Canterbury Park

Shakopee, MN

Environmental Assessment Worksheet

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July 2013 version

ENVIRONMENTAL ASSESSMENT WORKSHEET

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at:
http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.
Cumulative potential effects can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 19.
Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. **Project title:** Canterbury Commons

2. **Proposer: Canterbury Development, LLC.**
   Contact person: Melissa Duce
   Title: Vice President of Development
   Address: 7803 Glenroy Road, Suite 200
   City, State, ZIP: Bloomington, MN 55439
   Phone: 952-288-2086
   Fax:
   Email: Melissa.duce@dorancompanies.com

3. **RGU: City of Shakopee**
   Contact person: Mark Noble
   Title: Senior Planner
   Address: 129 Holmes Street South
   City, State, ZIP: Shakopee, MN 55379
   Phone: 952-233-9348
   Fax:
   Email: mnoble@shakopeemn.gov

4. **Reason for EAW Preparation:** (check one)

Required:	Discretionary:
☐ EIS Scoping	☐ Citizen petition
☒ Mandatory EAW	☐ RGU discretion
	☐ Proposer initiated

   If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s): 4410.4300; Subpart 19(d) Residential development and Subpart 32 Mixed residential and industrial-commercial projects

5. **Project Location:**
   County: Scott
   City/Township: Shakopee
   PLS Location (¼, ¼, Section, Township, Range): NE ¼ S8, T115N, R22W and SW ¼, SE ¼ S5, T115N, R22W
   Watershed (81 major watershed scale): Lower Minnesota River
   GPS Coordinates:
   Tax Parcel Number: 274500100, 274500050, 274500090, 274500010, 279080681, 279080411

At a minimum attach each of the following to the EAW:

- County map (Figure 1) showing the general location of the project;
- U.S. Geological Survey 7.5 minute (Figure 2), 1:24,000 scale map indicating project boundaries (photocopy acceptable); and
- Site plans (Figure 3) showing all significant project and natural features. Pre-construction site plan and post-construction site plan.

6. Project Description:

a. Provide the brief project summary to be published in the *EQB Monitor*, (approximately 50 words).

The project proposes the development of residential and commercial oriented uses adjacent to Canterbury Park along with public street and utility improvements in the City of Shakopee. The project includes development of approximately 856 residential units (700 apartments and 156 townhomes), 93,000 square feet of commercial uses (retail, restaurant and entertainment), and a 120 room hotel.

b. Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities.

The project proposes the development of residential and commercial oriented uses and public street and utility improvements in the City of Shakopee. The project site is located on the north side of Eagle Creek Boulevard, west of County Highway 83, adjacent to Canterbury Park. The project includes development of approximately 856 residential units (700 apartments and 156 townhomes), 93,000 square feet of commercial uses (retail, restaurant and entertainment), and a 120 room hotel. Refer to Figure 3 in Appendix A.

As part of this project, Shenandoah Drive is proposed to be extended from its current terminus at Eastway Avenue/Barenscheer Boulevard to the intersection of Vierling Drive and 12th Avenue East. The two lane extension will include access to the proposed residential and commercial development using roundabouts and minor-street stop controls. The road extension will include a pathway that will provide connections to existing pedestrian trail networks.

The development is planned to be constructed in multiple phases with Phase I consisting of all Shenandoah Drive improvements and a 350 unit apartment complex with a target opening year of 2020. The apartment complex will consist of two, three-story buildings connected by a central clubhouse with pool. All other development components would be completed as part of future phases with a target completion year of 2025.

The majority of the project site is vacant and undeveloped, but is utilized annually for Sever's Fall Festival and Corn Maze which will be relocated to an offsite location. The southwest corner of the project site is in use as a farmstead and is not owned or operated by the project proposer. Any development on this portion of the site would be dependent on future property ownership.

Development on this portion of the site is included in this EAW to assess all potential environmental impacts of full project buildout for the purpose of making future planning decisions.
Construction of the project will result in land disturbance totaling approximately 68.5 acres and will create approximately 35 acres of new impervious surfaces. Construction of the proposed project is anticipated to include:

- Site preparation for building pads and pavement including excavation and grading.
- Excavation for footing, utilities and stormwater retention basins.
- Paving of roadways, sidewalks, and parking areas.

c. Project magnitude:

Total Project Acreage	68.5
Linear project length	-
Number and type of residential units	856 (700 apartments 156 townhomes)
Commercial building area (in square feet)	93,000
Industrial building area (in square feet)	-
Institutional building area (in square feet)	-
Other uses – specify (in square feet)	120-room hotel
Structure height(s)	3 stories

d. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The purpose of the project is to provide housing and commercial oriented services to accommodate an increasing population in the City of Shakopee as well as persons visiting the area. The project will benefit future and current city residents and visitors.

e. Are future stages of this development including development on any other property planned or likely to happen? ☐ Yes ☒ No
If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

Continued redevelopment of the Canterbury Park site is always a possibility, but any such changes in land use on the adjacent site would be reviewed as required by the City of Shakopee, and if necessary, a separate environmental review may be required to be completed as a part of a future redevelopment project.

f. Is this project a subsequent stage of an earlier project? ☐ Yes ☒ No
If yes, briefly describe the past development, timeline and any past environmental review.

7. **Cover types:** Estimate the acreage of the site with each of the following cover types before and after development:

	Before	**After**		**Before**	**After**
Wetlands	0.38	0	Lawn/landscaping	38.51	20.67
Deep water/streams	0	0	Impervious surface	6.56	41.98
Wooded/forest	6.33	0	Stormwater Pond	0	3.78
Brush/Grassland	1.36	0	Drainageway	2.07	2.07
Cropland	13.29	0			
			TOTAL	**68.5**	**68.5**

8. **Permits and approvals required:** List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. *All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

Unit of Government	Type of Application	Status
FEDERAL		
US Army Corps of Engineers	• Section 404 Permit	To be determined
STATE		
Minnesota Pollution Control Agency (MPCA)	• Stormwater Pollution Prevention Plan (SWPPP) • NPDES/SDS Construction Stormwater (CSW) General Permit • Sanitary Sewer Extension	To be obtained
DNR	• MN Natural Heritage Database Review • Water Appropriation Permit	Complete To be obtained, if necessary
State Historic Preservation Office	• Archeological/Historic Sites Review	Complete
MN Dept. of Health	• Watermain Extension • Abandonment of Water Wells	To be obtained, if necessary
LOCAL		
City of Shakopee	• Preliminary Plat • Final Plat • Planned Unit Development Overlay • Site/Building Plan Review • Building Permit • Wetland Conservation Act approval	To be obtained

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 9-18, or the RGU can address all cumulative potential effects in response to EAW Item No. 19. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 19

9. Land use:

a. Describe:

i. Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.

The majority of the project site is vacant with a vegetative land cover that is utilized annually for Sever's Fall Festival and Corn Maze. Small wooden carnival structures consisting of food and beverage sale booths, carnival games, and performance stages remain onsite throughout the year. The northern portion of the site contains gravel parking and drive areas that are used occasionally during concerts and other events at Canterbury Park. The southeast portion of the site is currently being used as a staging area for the adjacent power plant construction. The area consists of a gravel parking lot that is being used to stage equipment and a job trailer until construction activities are complete. The southwest corner of the project site is in use as a farmstead, and is not owned or operated by the project proposer.

High density residential development is located directly west and adjacent to the project site. Canterbury Park, an entertainment venue that offers a casino, horse-racing events, and host concerts and other activities throughout the year, is located adjacent and east of the project site. The Upper Valley Drainageway System is located against and to the west of the site (refer to Figure 4 in Appendix A). A power plant is currently under construction in southeast quadrant of the intersection of Eagle Creek Boulevard and Veirling Drive.

No unique resources or corridors are located on the project site. Pedestrian trails are located adjacent to the project site along Eagle Creek Boulevard, Alysheba Road, and Shenandoah Drive. The site is less than a mile south of the Minnesota River and the Minnesota Valley State Trail. The Minnesota River corridor provides recreation opportunities with pedestrian and bicycle trails and water access points.

ii. Plans. Describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.

The City of Shakopee Comprehensive Plan designates the project site as Entertainment (E). The City of Shakopee conducts the surface water quality permitting activities on behalf of the Lower Minnesota River Watershed District within the city.

iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

The project site is currently zoned Major Recreation (MR). The purpose of the MR zone is to create opportunity for large amusement and recreation attractions with a regional draw, with land use compatibility and street efficiency. There are no shoreland or floodplain overlays.

b. Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

The proposed residential components would be consistent with the residential land uses located adjacent and west of the project site. The Shenandoah Drive extension will provide a buffer between the new residential uses and Canterbury Park. Eagle Creek Boulevard will serve as a buffer between existing residential uses to the south and the proposed hotel, restaurant, and retail uses.

Restaurants are a permitted, conditional, and Planned Unit Development (PUD) use allowed under the Major Recreation zoning. Hotel and retail are conditional and PUD uses under the Major Recreation zoning. A Planned Unit Development (PUD) overlay does allow for single use and mixed use residential development in this zone. The majority of the project site does not lie within the approved PUD for Canterbury Park. A new PUD for the 700-unit apartment project is anticipated to be submitted to the City concurrently with the EAW, the remainder of the development will be submitted to the City at a future date as needed.

The Comprehensive Plan states that the area of land adjacent to Canterbury Park has been reserved for expansion and spin-off uses. The Comprehensive Plan goes on to state that the intent of the Major Recreation zone is to accommodate recreation and associated uses. The Comprehensive Plan does not exclude any of the uses proposed for the project and the project does not require a Comprehensive Plan Amendment.

c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.

The project will incorporate landscaping and setbacks to provide buffers between uses as needed. The proposed uses are compatible with existing zoning as permitted, conditional, and PUD uses as noted above. A PUD will be submitted to the City for approval.

10. Geology, soils and topography/land forms:

a. Geology - Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.

Surficial geologic deposits are classified as grey Cloud terrace. Bedrock beneath the site consists of the Prairie du Chien Group limestone formation which is predominantly dolomitic limestone and dolomite. A geotechnical evaluation was prepared in February 2017 for the portion of the site where the apartments for Phase I will be developed and is included in Appendix C. The results of this report are assumed to generally represent the entirety of the site for the purposes of this EAW, however, additional geotechnical investigations can be completed for future development phases if deemed needed by the City. The study characterizes subsurface conditions for the purposes of underground utility siting and subgrade preparation requirements for foundations, floor slabs, exterior slabs, and pavements. Soil borings and test pits were conducted onsite. Topsoil onsite ranges in thickness from half a foot to three and a half feet. Bedrock deposits were found within 2 feet of the surface. Recommendations from this report will be incorporated into engineering and design as needed.

A SWPPP will be implemented during construction as part of the NPDES permit requirements for the project. The SWPPP will list all best management practices that will be utilized to minimize impacts to groundwater from project development.

b. Soils and topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

The project site is level or gently sloping and does not contain any hydric soils as shown in the soil characteristics table below. Refer to Figure 5 in Appendix A.

Map Unit	Soil Name	Slope %	Hydric
CdA	Copaston silt loam	0-2	No
DaA	Dakota loam	0-2	No
DbA	Dickman sandy loam	0-2	No
HdA	Sparta fine sand	0-2	No
HdB	Sparta fine sand	2-6	No
Sc	Stony land	-	No
TcB	Terril loam	2-6	No

A SWPPP will be implemented during construction as part of the NPDES permit requirements for the project. The SWPPP will list all best management practices that will be utilized to minimize erosion and sedimentation from the site during construction.

11. Water resources:

a. Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.

i. Surface water - lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.

There is one potential wetland within the project site that has been identified through an aerial photo review and will need to be field verified in the future. It is located in a depression towards the southeast end of the site. There is a 24-inch pipe, whose invert is approximately 18 inches higher than the basin low point, which exits to the northeast. This basin is charged through overland flow. This potential wetland is identified on NWI mapping as a PEM1A (Palustrine, Emergent, Persistent, Temporarily flooded) wetland. Refer to Figure 6 in Appendix A. No DNR public waters are located on or adjacent to the project site (refer to Figure 7 in Appendix A).

There is a wooded depression along the northwest edge of the site which is currently used for stormwater storage. There is a 30-inch pipe, whose invert is approximately 36" higher than the basin low point, which exits to the east. This basin is charged through overland flow.

A drainage feature called the Upper Valley Drainageway System (shown in Figure 4) is located near the western edge of the project site. It enters the site from the south via culvert beneath Eagle Creek Boulevard and travels north until it reaches about the midpoint of the site, on the west side, where it then turns to the northwest and continues offsite. This ditch system drains numerous portions of the City of Shakopee and directs flow towards a pretreatment area and eventually to the Minnesota River.

The Minnesota River lies within a mile of the Project Site and has been listed by the MPCA as an impaired waterbody. The river is impaired for mercury in fish tissue, mercury in the water column, polychlorinated biphenyls (PCBs) in fish tissue, and turbidity.

ii. Groundwater – aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.

Groundwater was not encountered during the soil borings and test pits conducted for the geotechnical evaluation included in Appendix C. The project site is located within the wellhead protection area and the Drinking Water Supply Management Area (DWSMA) for the City of Shakopee. Due to the proximity and type of bedrock, groundwater is highly vulnerable to contamination from land use activities. Karst conditions are possible and infiltration is not recommended or proposed to manage stormwater from the site.The MDH County Well Index did not identify any wells on the project site. If any wells are encountered they will be sealed in accordance with MDH requirements.

b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.

i. Wastewater - For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.
   1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.

The proposed development will generate wastewater typically associated with residential households as well as commercial type facilities such as retail shopping and restaurants. Wastewater will be conveyed to the Blue Lake Wastewater Treatment Plant (WWTP) via the City of Shakopee sanitary sewer system.

It is estimated that the proposed development will generate an average of 309,615 gallons per day (GPD). This estimate is based on equivalent Sewer Availability Charge (SAC) values, and unit parameters, taken from Met Council SAC Procedure Manual (2017) and illustrated in the table below. Wastewater from the proposed development will be conveyed via new sanitary sewer pipe, installed

and connected as part of the development, to the existing public sanitary sewer main line located at the east property line.

Establishment	Unit Value (Gal/Day/Unit)	Unit Type	# of Units	Discharge, GPD
Residential Multi-Family Apartments	274.0	Residence	700.0	191,800.0
Residential Townhomes	274.0	Residence	156.0	42,744.0
Food & Drink - Restaurants, Full Service	27.4	Seat	1840.0	50,416.0
Hotels/Motels	137.0	Room	120.0	16,440.0
Office - General Office (deduct mech, stairwells, storage, etc…)	274.0	/2,400 sf	10.0	2,740.0
Residential Parking Garage	274.0	/274 stalls	2.2	611.0
Retail - (deduct mech, stairwells, storage, etc…)	274.0	/3,000 sf	10.5	2,877.0
Swimming Pool	274.0	/900 SF	7.3	1,986.5
			Average Daily Flow (GPD)	309,614.5
			Peaking Factor	3.6
			Peak Daily Flow (GPD)	1,114,612.3

The Blue Lake WWTP has an average wastewater design flow of capacity of 42 million GPD and has seen an average inflow value of 26.73 million GPD over a recent 12 month period (Metropolitan Council Inflow Summary Report dated January 2017).

The City of Shakopee has indicated that the existing sanitary sewer system was designed and constructed to include wastewater flows generated by future developments within the area of the proposed development. Wastewater generated by the proposed development will not require modification of the existing wastewater infrastructure or treatment plant.

2) If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.

No wastewater will be discharged to a subsurface sewage treatment system (SSTS). All wastewater generated by the proposed development will be conveyed to the Blue Lake WWTP.

3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges.

Wastewater from the proposed development will be treated at the Blue Lake WWTP. The plant provides mechanical, biological, and chemical treatment to the wastewater before discharging it into the Minnesota River. There are no groundwater or surface water impacts anticipated from the wastewater produced by the proposed development.

ii. Stormwater - Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.

The proposed project site is tributary to the Minnesota River and lies within two sub-watersheds, Mill Pond and Blue Lake, of the City of Shakopee's Sub-watershed Delineation Map (Figure III-4) of the Comprehensive Water Resource Management Plan (January 2012).

The City of Shakopee Water Resource Management Plan (WRMP) applies Nationwide Urban Run-off Program (NURP) Standards for the design of new stormwater management ponds and the use of the Minnesota Pollution Control Agency's Best Management Practices (BMPs) for all proposed developments to reduce non-point source pollution associated with stormwater run-off.

The majority of existing site runoff would be from the current farmstead and previously farmed areas with the exception of a small northerly portion of the site which is currently a paved and/or gravel parking lot, and the southeast portion of the project site which has most recently been used a gravel lay down area for staging purposes related to the offsite construction of the new power plant to the west.

The type of run-off generated by the existing farmstead, and previous agricultural area, is typical pasture and previously farmed land (i.e. residual fertilizer, herbicide, pesticide, sediment from tilling and planting, etc). The stormwater run-off generated by this area is directed to a large centrally located depression where it is infiltrated.

The existing parking areas to the north, and the gravel construction staging area at the southeast, drain to a subsurface storm sewer system which leads to an existing stormwater management system located on the adjacent Canterbury Park property where it is treated prior to discharge via an existing 42" storm sewer pipe to the Upper Valley Drainage Way System which drains northwest to the Minnesota River approximately 1.5-miles away.

The proposed development must provide a stormwater management system which provides water quality treatment, as well as water quantity and rate control, in compliance with the City's WRMP.

Water quality treatment must meet NURP guidelines; however, the City will accept other treatment methods on a case-by-case basis. Due to excavation difficulties inherent with the existing shallow bedrock found throughout the project site, the proposed development will consist of a series of wet ponds and dry ponds which shall meet or exceed the required water quality treatment through wet detention in accordance with City standards and/or filtration in accordance with accepted practices such as media and vegetative filters as specified in the Minnesota Stormwater Manual.

Attempts to reduce the quantity of stormwater runoff in accordance with the City's WRMP, as well as the MPCA General Permit, through the use of infiltration is prohibited due to the presence of shallow

bedrock, potential karst soils, and the identification of a majority of the site being located within the City's Drinking Water Supply Management Area.

Rate control will be provided in accordance with the City's WRMP which allows a maximum discharge rate of 1/3 CFS per acre of newly developed land for areas of land tributary to the Minnesota River via within the Mill Pond Subcatchment Area, and 1/10 CFS per acre of newly developed land for areas within the Blue Lake Subcatchment Area. However, the City's WRMP allows the maximum peak discharge rate to be waived to the extents necessary to be limited to no less than the area of an 8-inch opening, and/or allow the outlet to be sized to allow the detention area to draw down to within one foot of the normal run-out elevation within the 72-hour following the onset of a 100-year rainfall event.

Stormwater runoff will receive treatment for water quality and rate control in compliance with governing authorities. The following tables include the maximum rate of runoff, and nutrient analysis, for the existing and proposed conditions through the use of proposed onsite, as well the expansion of existing offsite, regional wet ponds designed in accordance with NURP standards:

Maximum Rate of Runoff (cfs)

Storm Event	Existing	Proposed
2-year	64.71	2.68
10-year	117.79	3.62
100-year	241.59	20.45

Allowable Maximum Rate of Runoff (cfs)

Storm Event	Mill Pond	Blue Lake
100-year	20.03	1.03

Proposed Maximum Rate of Runoff (cfs)

Storm Event	Mill Pond	Blue Lake
100-year	19.61	0.87

The MIDS calculator was used to determine annual particulate Phosphorous (TP) and Total Suspended Solids (TSS) removal for the regional NURP ponds. For the existing conditions, sediment loading was calculated using an agricultural runoff event mean concentration value of 145 mg/l.

Nutrient Analysis

BMP	TSS (lb/yr)	TP (lb/yr))
Existing Conditions	9,186.4	18.9
Proposed Conditions	1,498.9	4.6

The proposed development will require approximately 28.12 AC-FT of live storage to meet the allowable discharge rate requirements of the City's WRMP for the approximate 60.1 acre portion of the project tributary to Mill Pond Subcatchment; and approximately 8.61 AC-FT of live storage to

meet the allowable discharge rate requirements of the City's WRMP for the approximate 10.3 acre portion of the project tributary to the Blue Lake Subcatchment.

To accommodate a portion of the required live storage for the Mill Pond subcatchment, a regional stormwater pond will be constructed at the north end of the site as part of Phase 1 construction and will provide treatment for approximately 37.9 acres of the 60.1 acre watershed, including Canterbury Residences, the future townhomes conceptually located on Outlot 'D', and a portion of the proposed Shenandoah Drive. The remaining area of this subcatchment will rely on the construction of onsite stormwater facilities, as well as the potential expansion of existing offsite facilities located on the adjacent Canterbury Park property, at the time of their development and will be conveyed via the installation of the subsurface storm sewer system and related service stubs included as part of the proposed Shenandoah Drive Improvement Project.

To accommodate a portion of the required live storage for the Blue Lake subcatchment, the southeast portion of the project site drains to the existing storm sewer system within Vierling Drive and 12th Avenue which directs runoff through a public storm sewer system to an offsite regional pond prior to its final outfall location of Blue Lake approximately 3.0 miles to the northeast. Future development within this watershed will rely upon the expansion of the existing regional pond located approximately 0.25 miles to the southeast.

Permanent Erosion and Sedimentation Control
Stormwater will be treated prior to discharge according to the MPCA requirements for Permanent Stormwater Management System in the NPDES Construction Permit and the Lower Minnesota River Watershed District and City of Shakopee WRMP for stormwater treatment and rate control. It is anticipated that stormwater treatment will include the construction of wet ponds and filtration basins to remove suspended solids from the runoff prior to its discharge from the site. Stormwater treatment facilities, and outlet control structures, will be designed and constructed to minimize sediment transport. The proposed stormwater treatment systems will be designed to have adequate capacity to provide storage and sediment control for stormwater runoff after construction of the development. Permanent BMPs will also include seeding, mulching and sodding.

Temporary Erosion and Sedimentation Control
The project will require a National Pollutant Discharge Elimination System (NPDES) construction permit through the Minnesota Pollution Control Agency (MPCA). Temporary erosion and sediment control measures will be implemented throughout the construction activities to protect drainage areas consistent with NPDES and impaired waters requirements.

Erosion control measures during construction will include BMPs as required by the City of Shakopee, the Lower Minnesota River Watershed District, and the NPDES requirements. Temporary erosion control measures may include:

- Rock entrances
- Silt fence
- Biorolls
- Erosion control mats and wood fiber blankets (as required)
- Inlet Protection
- Rock check dams
- Temporary seeding and mulching
- Temporary sedimentation basins (as required)

iii. Water appropriation - Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

Groundwater was not encountered during soil borings and test pits. The project is not anticipated to encounter water during construction or operation and therefore, need for a water appropriation permit is not anticipated. However, groundwater levels can fluctuate in response to rainfall, flooding, irrigation, seasonal freezing and thawing, surface drainage modifications, and other factors. Project planning will anticipate fluctuations and an appropriation permit will be obtained as needed.

As noted above the project will use approximately 300,000 gallons of water per day. The proposed project includes the extension of an onsite looped water supply system connected to the existing public 12" water main located within Eagle Creek Blvd to the south, and to the existing 12" water main located adjacent the west property line. The Water Supply Plan for the City of Shakopee has planned for population growth in the city and has the capacity to accommodate a projected demand of over 8.5 million gallons per day. Sufficient capacity is anticipated to accommodate the project demand. Additionally, based on discussion with the City and the Shakopee Public Utilities Commission, the existing water supply infrastructure that the project will utilize was designed to accommodate development of the project site.

iv. Surface Waters

a) Wetlands - Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed, and identify those probable locations.

It is anticipated that the one wetland onsite will be removed and replaced through mitigation banking. This wetland may have been created to assist in stormwater management and may be considered as an incidental wetland. Its contribution to the stormwater management of the area has been accounted for in the stormwater management plan for the site. A delineation will be completed and reviewed and approved as applicable. Final assessment of impact and replacement of the wetland will be completed as part of the permitting process.

b) Other surface waters- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water

features. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

The wooded depression on the north end of the site will be removed and its stormwater management functions will be accounted for by a stormwater pond at the north end of the site. No Federal Emergency Management Agency (FEMA) designated floodplains are located on the site.

The Upper Valley Drainageway System has no impacts proposed and will be avoided during future development.

12. Contamination/Hazardous Materials/Wastes:

a. Pre-project site conditions - Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.

A Phase I Environmental Site Assessment (ESA) was prepared for the project site by Wenck and Associates and is included in Appendix D. The ESA identifies environmental conditions and historical conditions on the site related to the presence or likely presence of any hazardous substance or petroleum product in, on or near the site, including any past release that has been addressed in accordance with applicable requirements. The ESA included all project parcels currently owned by the project proposer but does not include the farmstead parcels located on the southwest corner of the project site. The ESA included records retrieval and review of records, site reconnaissance, and interviews of people with knowledge of the site.

Historic use of the site indicates it was vacant agricultural cropland and farmstead until about 1993 after which the Corn Maze began utilizing the property. The historic uses for the majority of the project site show no evidence of a release or material threat of a release of petroleum products or hazardous materials. The ESA did identify that the farmstead on the project site was enrolled in the Petroleum Brownfields Program for a non-tank related petroleum release. Contamination to groundwater or off-site was not reported. Phase I and Phase II ESAs were prepared for the farmstead portion of the site and the MPCA granted a regulatory closure of their investigation. Due to the lack of groundwater and off-site contamination reported this site was determined to not be a regulatory environmental condition for the rest of the project site. However, if this portion of the site is developed further assessment may be required. Additionally, other nearby sites of regulatory interest including Canterbury Park, a registered Concentrated Animal Feedlot Operation, were found to have material threat of release to the project site.

b. Project related generation/storage of solid wastes - Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to

avoid, minimize or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.

Construction of the proposed project will result in the generation of solid waste and construction waste material. All waste and unused building materials will be properly disposed of off-site.

During project operation, municipal solid waste will be hauled away by a local, licensed garbage hauler and new residential and commercial tenants will be encouraged to recycle.

c. Project related use/storage of hazardous materials - Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

During construction and operation of the project vehicles containing gasoline will be present on site. Minimal amounts of gasoline may be stored on site, in approved containers with secondary leak protection. Toxic or hazardous materials present after construction will be consistent with residential and commercial uses and may include pesticides and herbicides. The potential for contamination is considered to be low. No above or below ground tanks are proposed to be stored onsite following construction.

d. Project related generation/storage of hazardous wastes - Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.

Construction of the project will not involve the generation of significant amounts of hazardous waste. Hazardous waste generated will be properly disposed of. The anticipated land uses proposed for the project site will may generate or require the storage of business type hazardous waste materials onsite and would be typical of residential, retail, and restaurant uses.

13. Fish, wildlife, plant communities, and sensitive ecological resources (rare features):

a. Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.

The site is has some vegetative cover, some gravel parking areas, and some structures. The site is located in the vicinity of the Minnesota River wildlife corridor. The surrounding area includes developed areas as well as vacant land and land in agricultural use.

b. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-____) and/or correspondence number (ERDB 20170287) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

No areas of biodiversity significance are located on or adjacent to the project site (refer to Figure 8 in Appendix A). The DNR's Natural Heritage Information System was reviewed for the presence of State-listed threatened, endangered, or special concern species within an approximate one-mile radius of the site. The DNR identified two rare features, the loggerhead shrike and the gopher snake, in correspondence dated March 27, 2017, included in Appendix B. The loggerhead shrike is state-listed endangered bird that was documented breeding the project area in 1994. Loggerhead shrike can be found in native prairie, pastures, old fields and orchards, cemeteries, grassy roadsides, and farmyards. The project site and surrounding area does contain suitable habitat so it is possible that the loggerhead shrike could breed in the area. The gopher snake, a state-listed species of special concern, has been documented in the project area and could be found onsite. The gopher snake prefers dry, sandy or bluff prairies and will nest or hibernate in old burrows.

c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

During construction of the project there is potential to disturb or harm the rare features identified in the NHIS database. The loggerhead shrike may be nesting on or near the site between April and July and removal of trees or shrubs during this time has the potential to impact this species. Additionally, use of plastic erosion control mesh has the potential to entangle and kill a variety of small animals including the gopher snake.

d. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.

The DNR identified measures to be taken in their correspondence dated March 27, 2017, included in Appendix B. To minimize potential impacts to the gopher snake erosion control mesh, if used, will be made of only wildlife friendly materials. To minimize potential impacts to the loggerhead shrike the following mitigation measures will be implemented during construction:

- Avoid or minimize tree and shrub removal within suitable habitat during loggerhead shrike breeding season (April through July).
- If any tree or shrub will be removed from suitable habitat suitable habitat during breeding season, inspect the trees/shrubs for active nests prior to removal.
- Report any loggerhead shrike sightings to the DNR.

Implementation of these measures will mitigate any potential impacts to rare features located on or near the project site.

14. Historic properties:

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

The SHPO was contacted regarding the potential for historic, cultural, or architectural resources on and near the site. SHPO's records, included in Appendix B, indicates there are numerous resources in the project vicinity, but not on the project site. Offsite resources are not anticipated to be impacted by the development of the project. Although no resources have been identified onsite, in the event that a possible resource is encountered during project construction, all activities will cease and proper authorities will be contacted.

15. Visual:

Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

Development of the site will change the visual landscape from vacant vegetated land to an urban landscape with buildings and streets. This will result in a change to the views on or near the site. However, these views are consistent with surrounding land uses and anticipated land use for the site

16. Air:

a. Stationary source emissions - Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.

No stationary source of air emissions is proposed as part of the project.

b. Vehicle emissions - Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.

Motor vehicle emissions will be associated with vehicles traveling to and from the development site and from construction equipment necessary for the proposed construction activities. The most critical pollutant associated with vehicular traffic in Minnesota is carbon monoxide (CO). Carbon monoxide (CO) is one of five vehicle emission pollutants for which the US Environmental Protection Agency has standards. CO is a colorless, odorless and tasteless toxic gas produced by the incomplete burning of carbon in fuel.

Concentrations of carbon monoxide are typically greatest at intersections with poor levels of service because of excessive idling or acceleration of vehicles. The existing concentration of carbon monoxide at the project location is considered to be low because no part of Scott County has been identified as a Carbon Monoxide Level Non-Attainment Location. The Minnesota Pollution Control Agency has a nearby ambient air quality monitoring station in Shakopee (MPC Station SPPRC 505) to track carbon monoxide levels.

c. Dust and odors - Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under

item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.

Odors generated during construction will be mitigated by maintenance of the construction equipment to the manufacturers' specifications and by using appropriate fuel additives when necessary. Grading and construction will temporarily generate dust. BMPs and other standard construction methods will be used to reduce construction impacts such as intermittent applications of water to exposed soils as needed to reduce dust during dry weather. Construction dust control is required to be in conformance with City of Shakopee's ordinances and the NPDES Construction Stormwater permit. Following construction, no dust is anticipated generated. The operation of the project is not anticipated to involve processes that would generate odors.

17. Noise

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

The site is located in an urban/suburban area and is surrounded by residential areas, entertainment and commercial land uses. Existing noise sources are those typical of residential areas and consist mainly of traffic on the area roadways. Additionally, noise from the existing Canterbury Park may include concert noise and noise associated with racing or special event activities. The nearest sensitive receptors are the residential uses to the west and south. Following completion of the first project phase, sensitive receptors will be located in the apartments constructed. During construction of future phases these receptors would be subject to construction noise.

Grading and construction will temporarily generate noise. BMPs and other standard construction methods will be used to reduce construction impacts such as limiting hours of operation to comply with the noise regulations in City ordinance. Construction noise will be limited to daytime hours consistent with the City of Shakopee's construction and noise ordinances (7 am to 10 pm on weekdays, 9 am to 9 pm on weekends and holidays). Construction equipment is expected to be dispersed on the site rather than concentrated in one limited area for extended periods of time to limit potential impacts.

18. Transportation

a. Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternative transportation modes.

Based on the conceptual site plan, there will be a total of 2,290 parking spaces provided for the entire mixed-use development. Following provides a breakdown of where the spaces will be allocated:

- North Townhomes – 135 parking spaces (2.25 spaces per unit)
- Multi-Family Apartments – 1,050 parking spaces (1.5 spaces per unit proposed based upon developers experience with similar apartment projects of similar scale and unit mix.)

- South Townhomes – 216 parking spaces (2.25 spaces per unit)
- West Commercial – 150 parking spaces
- East Commercial – 700 parking spaces

An estimated parking needs assessment based upon the requirements of City Code is provided below. All uses can comply with or exceed the City Code requirements, but it is anticipated the developer will seek a reduction in the amount of required parking associated with the apartments through a PUD application. Parking usage studies from similar developments elsewhere in the Metro can be provided to document the real-world parking need for the proposed style and mix of units to be proposed on this site.

Land Use	Number	# of Units	Total Parking Spaces
Residential	2.25 per unit	856	1,926
Hotels/Motels	1 per room	120	120
Hotels/Motels	1 per 2 employees	40	20
General Commercial/ Retail	1 per 200 square feet	93,000	465
		Total	2,531

While there are currently no transit options in the site vicinity, the project proposer is coordinating with MetroTransit to provide a Bus Rapid Transit stop along the Shenandoah Drive extension.

b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. *If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW.* Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 *(available at: http://www.dot.state.mn.us/accessmanagement/resources.html)* or a similar local guidance,

c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

A comprehensive Traffic Impact Analysis (TIA) was conducted for the project in order to determine the project's impact on the surrounding transportation system. The TIA is included Appendix E. The analysis considered Existing conditions, Phase 1 (2020) conditions (Background and Total) and Full-Build (2025) conditions (Background and Total). Background growth volumes were generated for the Phase 1 (2020) and Full-Build (2025) conditions using a two percent annual growth rate. The following provides a general summary of forecasted trips and measures necessary to mitigate anticipated impacts of the development on the surrounding transportation system.

Trip generation estimates for the proposed project were based on information provided in ITE's *Trip Generation* 9th Edition. Reductions in the overall trip generation forecast were considered to account for internal capture and pass-by. The following provides an explanation of these trip reductions:

- Internal Capture – Represents traffic that is generated by the proposed development that will make a stop at another land use with the development, therefore never entering the external

roadway network. These trips are reduced from the base trip generation potential to determine the total number of driveway trips the proposed development will generate. In this case, internal capture trips will travel along Shenandoah Drive, but are still considered to be "internal" for the purposes of this traffic analysis.

- Pass-By – Reflects the travel patterns of motorists who are already traveling on the adjacent study roadways (Eagle Creek Boulevard) and stop at the site in route to another primary destination. Based on ITE's *Trip Generation Handbook*, pass-by reduction can be applied to General Commercial (0% during the AM peak and 34% during the PM peak) and Restaurants (0% during the AM peak and 43% during the PM peak).

The table below provides trip generation estimates for daily, AM peak hour, and PM peak hour, and accounts for trip reductions due to internal capture and pass-by. Based on the calculation, the overall development is anticipated to generate 13,136 net new daily trips, 771 net new AM peak hour trips, and 632 net new PM peak hour trips. At the completion of Phase 1 (350 apartment units), the development is anticipated to generate 2,328 net new daily trips, 179 net new AM peak hour trips, and 217 net new PM peak hour trips. More detail information on the trip generation calculation is provided Appendix C of the traffic study.

Land Use	**ITE Land Use Code**	**Intensity**	**Trip Generation Values**		
			Daily	**AM Total (In/Out)**	**PM Total (In/Out)**
Multi-Family (Apartments)	220	700 Dwelling Units	4,656	357 (71/286)	434 (282/152)
Multi-Family (Townhomes)	230	156 Dwelling Units	908	69 (12/57)	81 (54/27)
Hotel	310	120 Rooms	492	64 (38/26)	72 (37/35)
General Commercial	820	62,000 Square Feet	2,648	60 (37/23)	230 (110/120)
Restaurants	932	31,000 Square Feet	3,942	335 (184/151)	305 (183/122)
Total Site Generated Trips			**13,136**	**885 (342/543)**	**1,122 (666/456)**
Internal Capture Reduction			--	*110 (55/55)*	*410 (205/205)*
Total Driveway Trips			**13,136**	**771 (285/486)**	**712 (416/251)**
Pass-By Reduction			--	--	*80 (40/40)*
Total Net New Trips			**13,136**	**771 (285/486)**	**632 (421/211)**

Based on the analysis, the following measures are necessary to minimize project related transportation effects on the surrounding transportation system. More detailed information regarding these measures is provided in Appendix C of the traffic study.

Phase 1 (2020) Conditions

- *Shenandoah Drive* – Extend Shenandoah Drive as a two-lane roadway through the proposed development from its current terminus at Eastway Avenue/Barenscheer Boulevard to the

current intersection of Vierling Drive & 12th Avenue E. As part of this, the realignment of Barenscheer Boulevard is being considered.

- *County Highway 83 & US 169 (Eastbound)* – Extend the inside northbound right-turn lane to Eagle Creek Boulevard to provide a full-length lane between the two intersections.

- *County Highway 83 & Eagle Creek Boulevard* – Convert the existing northbound right-turn lane to a shared through-right lane and construct a new dedicated northbound right-turn lane.

- *County Highway 83 & 12th Avenue E* – Construct an additional westbound left-turn lane. This improvement was identified in the County Highway 83 Corridor Readiness Study (Bolton & Menk, 2016). This improvement was included in the analysis but should be considered a background improvement and not responsibility of the proposed mixed-use development.

- *Proposed Roundabouts* – Although not measures necessary to mitigate transportation impacts, the development is considering the installation of roundabouts along the Shenandoah Drive extension at major site driveways and the intersections of Vierling Drive & 12th Avenue E and Vierling Drive & Eagle Creek Boulevard.

Full-Build (2025) Conditions

- *County Highway 83 & US Highway 169 (WB)* – Restripe the middle westbound off-ramp lane to a shared left-turn and right-turn lane.

- *County Highway 83 & Eagle Creek Boulevard* – Extend the eastbound right-turn and left-turn lanes to provide a total of 350 feet of storage.

- *County Highway 83* Corridor – Evaluate and Optimize traffic signal timings from 12th Avenue E to Eagle Creek Boulevard.

19. Cumulative potential effects: (Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items)

a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

Phase I of the project is proposed to be completed by 2020 and Phase II is anticipated to be completed by 2025. Any impacts to the environment (e.g., wetland, stormwater) will be required to meet Federal, State, and Local regulation and will be mitigated as required; therefore, it is not anticipated that these impacts will combine to create a cumulative potential effect.

b. Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.

No known development in the immediate project vicinity is proposed. Should projects be proposed in the vicinity of the project in the future, the impacts associated with those projects will be assessed and

mitigated as needed. It is not anticipated that future projects will combine with the impacts caused by the proposed projects in this EAW to cause significant cumulative potential effects.

c. Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.

No known development is planned adjacent to the proposed project site at this time. Development of the project is not anticipated to cause any future projects. Continued redevelopment of the Canterbury Park site is always a possibility, but any such changes in land use on the adjacent site would be reviewed as required by the City of Shakopee, and if necessary, a separate environmental review may be necessary to be completed as a part of a future redevelopment project.

20. Other potential environmental effects: If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

No additional environmental effects have been identified.

RGU CERTIFICATION. *(The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)*

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature _____ Date _____

Title _____

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Appendix A

Figures

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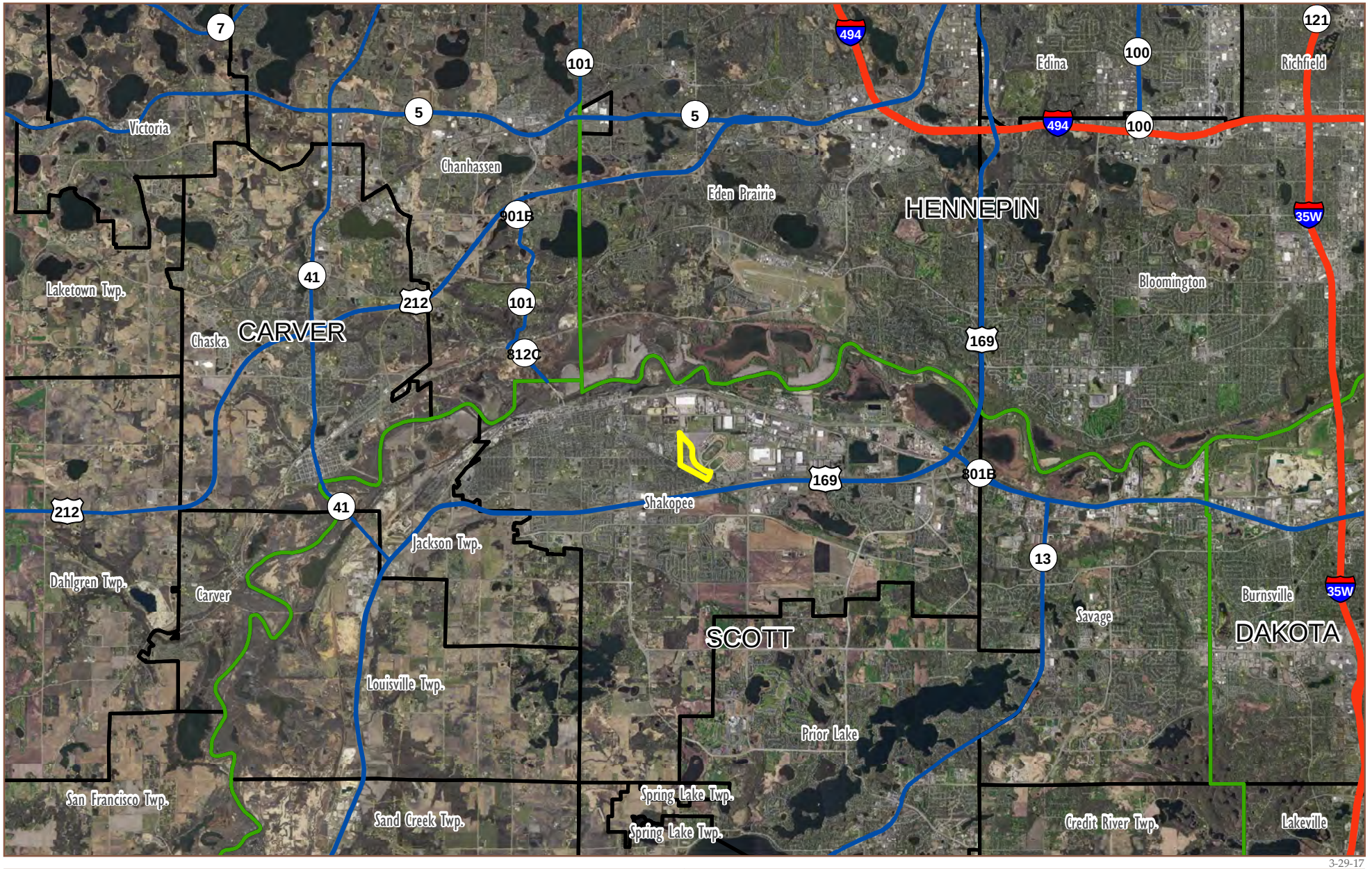

3-29-17

Location Map

Canterbury Commons
Shakopee, MN

Legend

- EAW Study Area
- County Lines
- US or State Highway
- Interstate

N

0 1 2
Miles

Sources: MetroGIS, MnDOT

FIGURE 1

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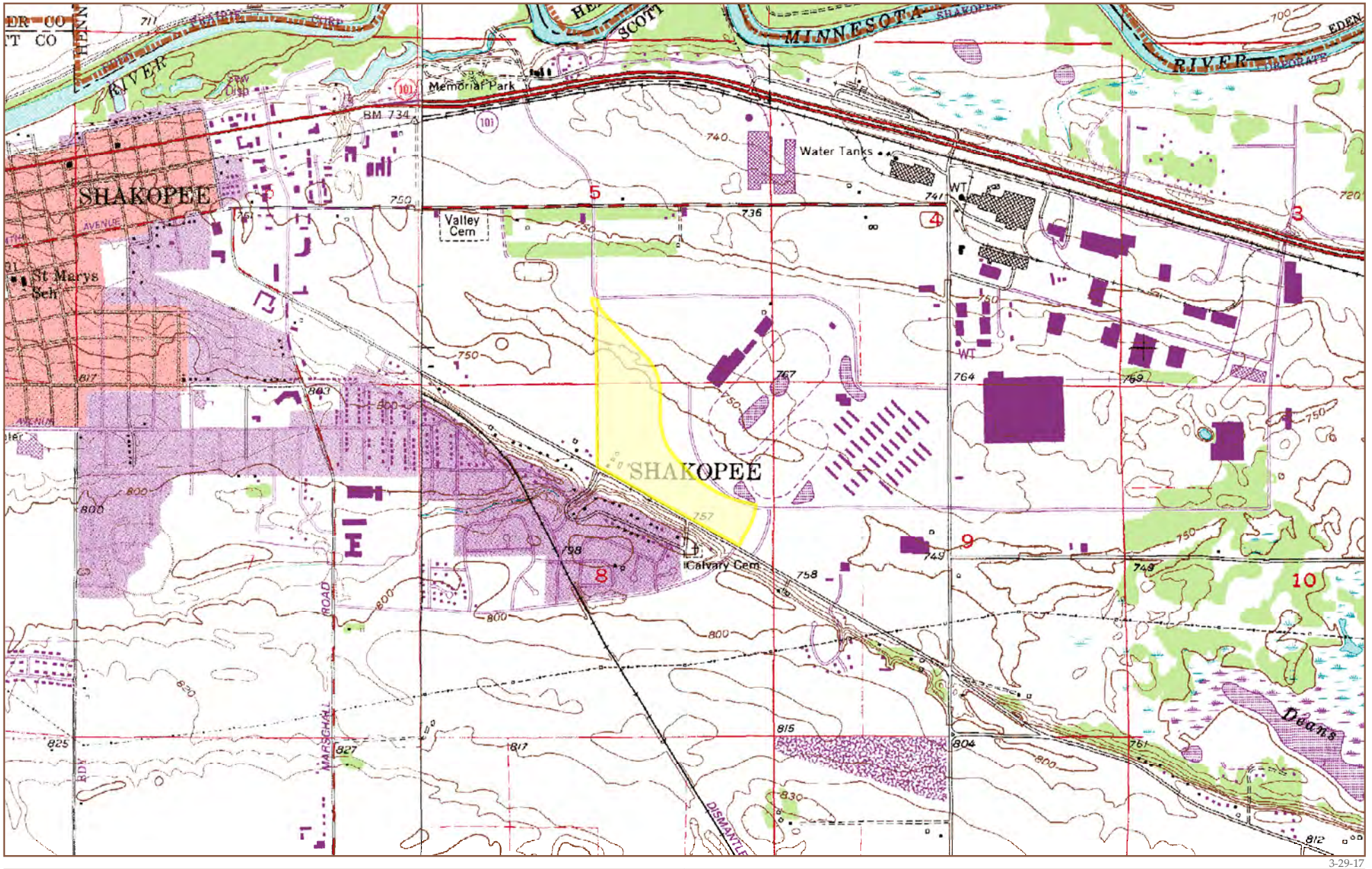

3-29-17

USGS Map

Canterbury Commons
Shakopee, MN

Legend

EAW Study Area

Sources: MetroGIS, MnDOT

N

0 1,000 2,000
Feet

FIGURE 2

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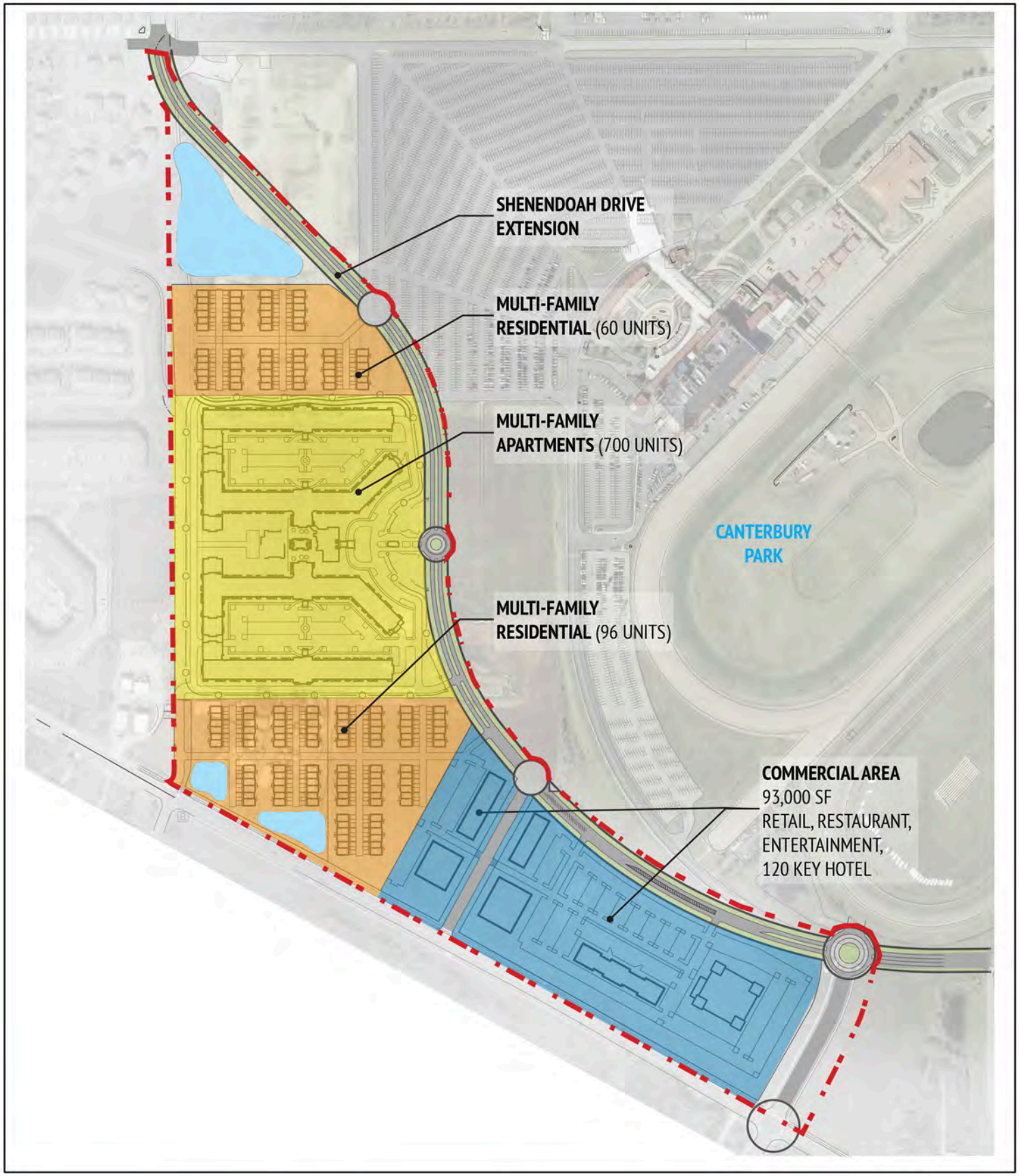

CONCEPT PLAN
Canterbury Commons
Shakopee, MN

N

FIGURE 3

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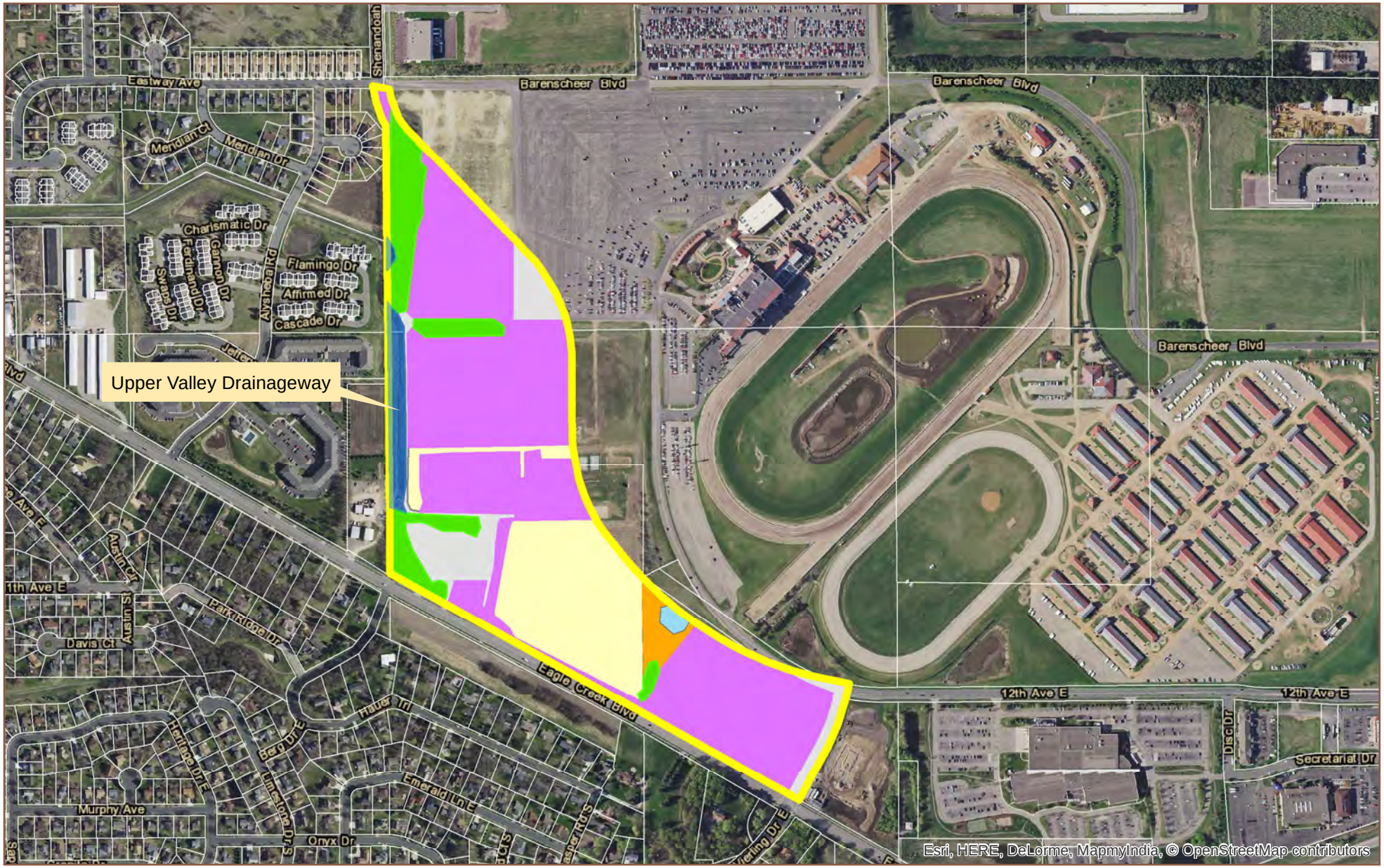

3-29-17

Existing Landcover

Canterbury Commons
Shakopee, MN

Legend

- EAW Study Area
- Brush/Grassland
- Cropland
- Drainageway
- Impervious Surface
- Lawn/Landscaping
- Wetland
- Wooded/forest

0 350 700
Feet

Sources: MetroGIS, MnDOT

FIGURE 4

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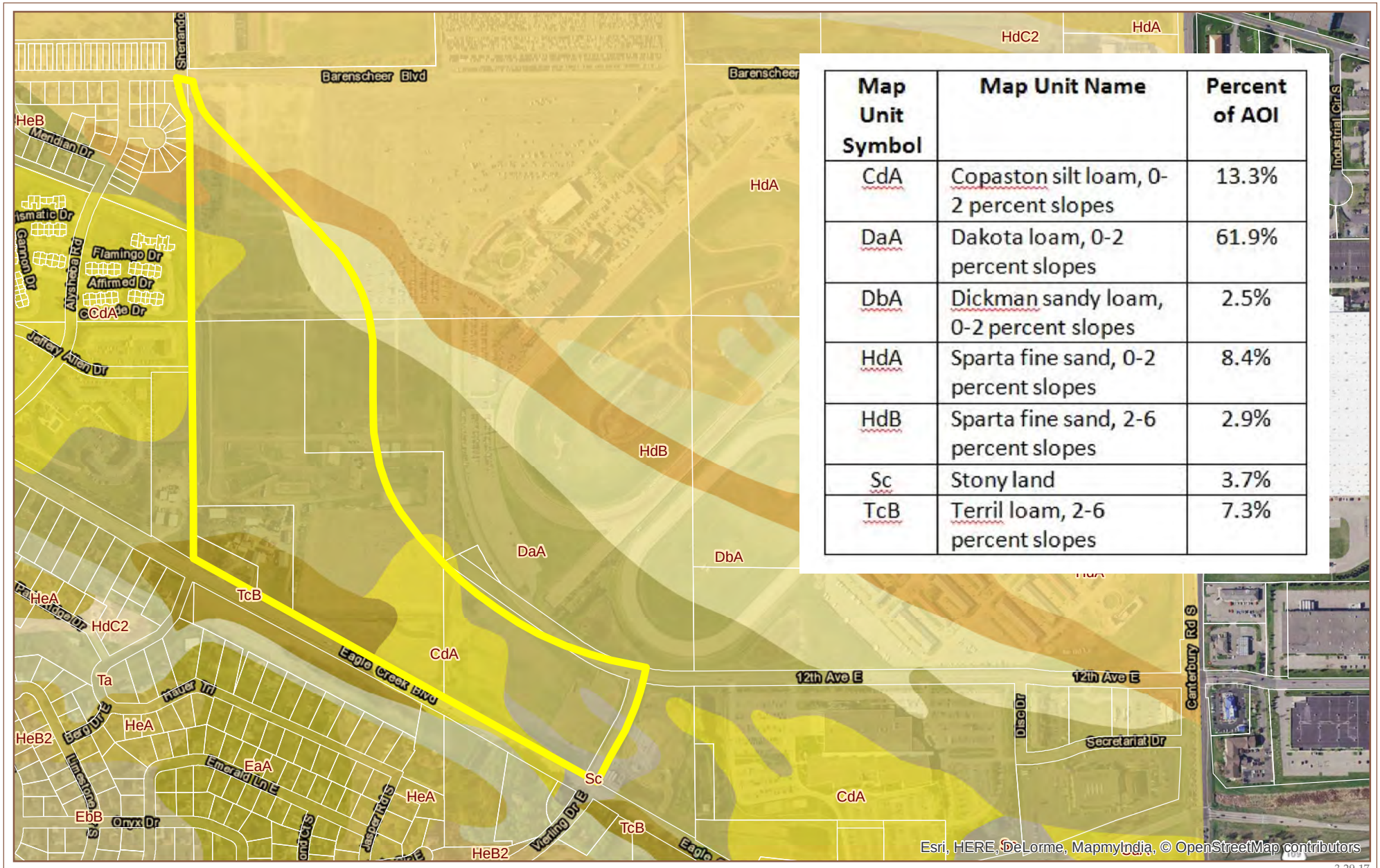

Map Unit Symbol	Map Unit Name	Percent of AOI
CdA	Copaston silt loam, 0-2 percent slopes	13.3%
DaA	Dakota loam, 0-2 percent slopes	61.9%
DbA	Dickman sandy loam, 0-2 percent slopes	2.5%
HdA	Sparta fine sand, 0-2 percent slopes	8.4%
HdB	Sparta fine sand, 2-6 percent slopes	2.9%
Sc	Stony land	3.7%
TcB	Terril loam, 2-6 percent slopes	7.3%

3-29-17

Soils

Canterbury Commons
Shakopee, MN

Legend

EAW Study Area

0 350 700
Feet

Sources: MetroGIS, MnDOT, NRCS, Scott County

FIGURE 5

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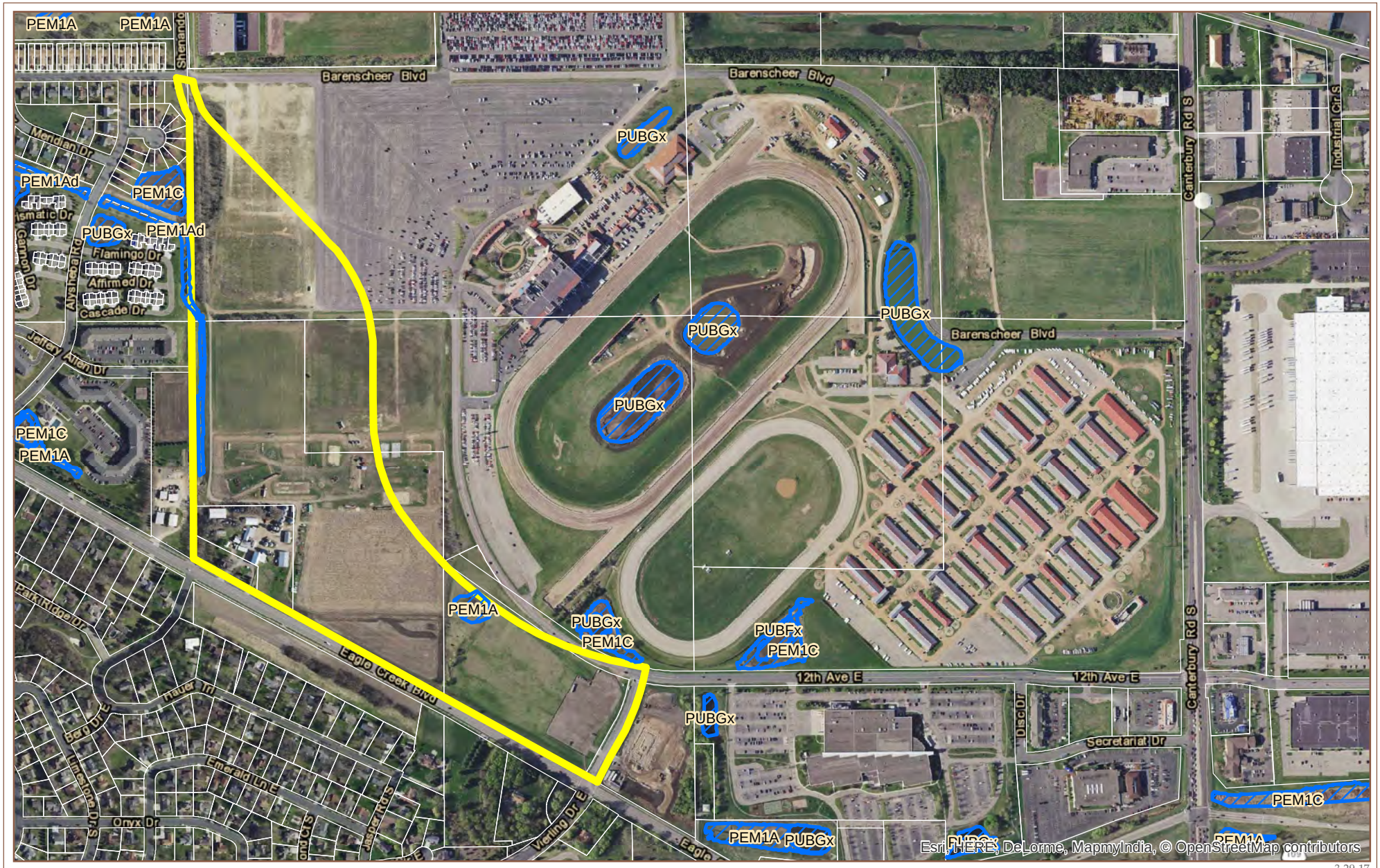

3-29-17

National Wetland Inventory

Canterbury Commons
Shakopee, MN

Legend

EAW Study Area

Wetland

0 350 700
Feet

Sources: MetroGIS, MnDOT, NRCS, Scott County

FIGURE 6

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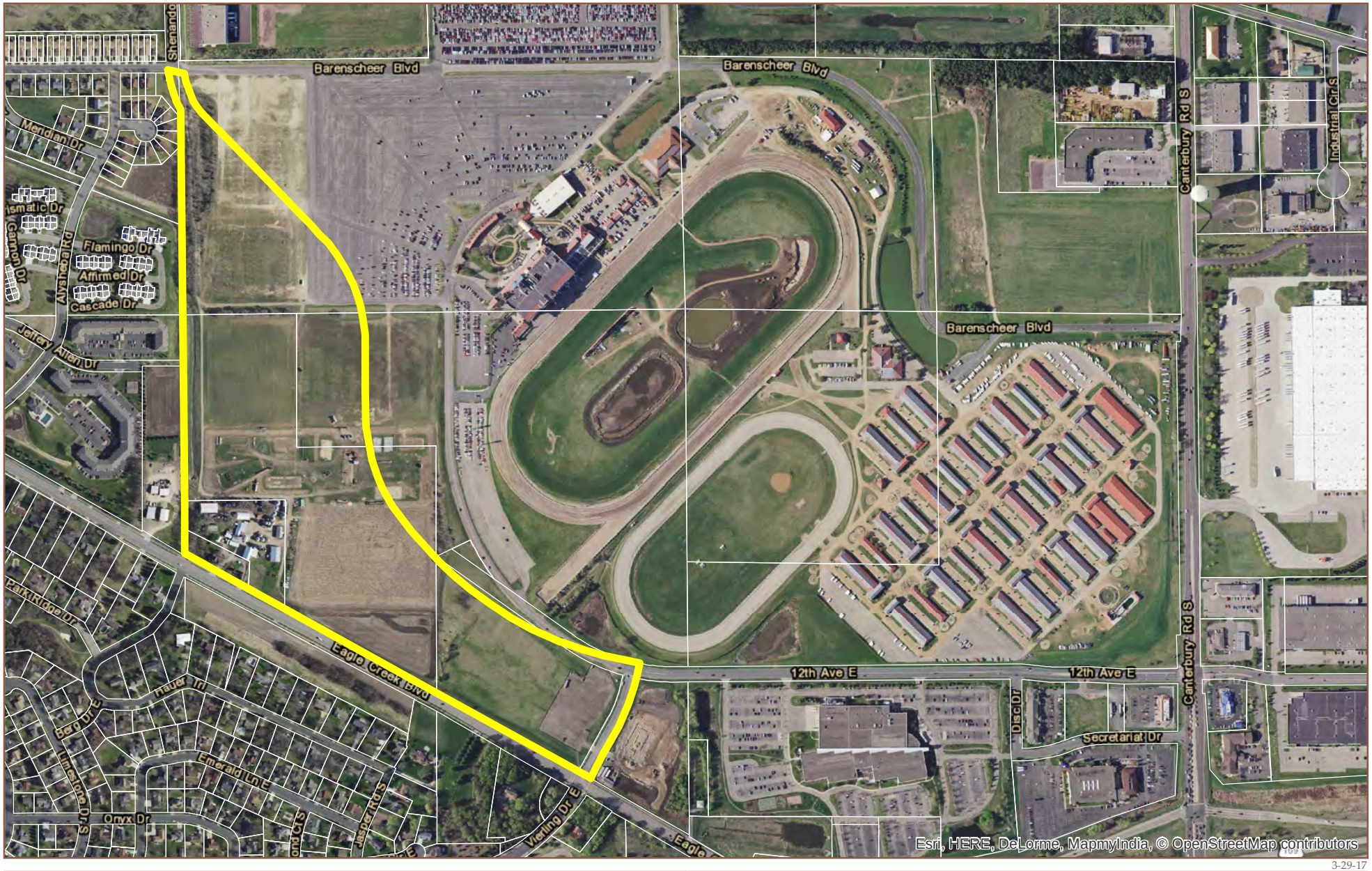

3-29-17

DNR Public Water Inventory

Canterbury Commons
Shakopee, MN

Legend

EAW Study Area

Wetland

0 350 700
Feet

Sources: MetroGIS, MnDOT, NRCS, Scott County

FIGURE 7

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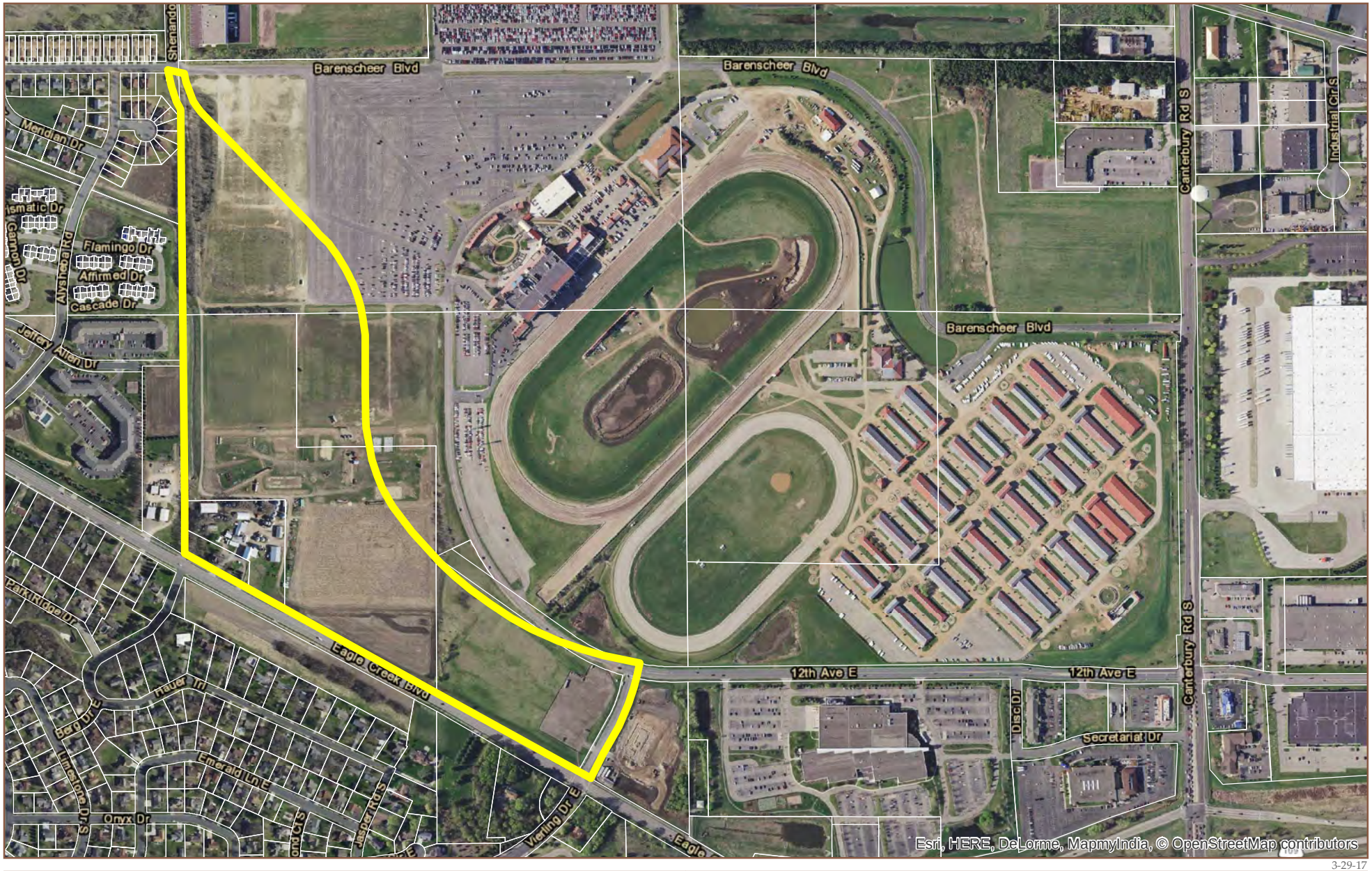

3-29-17

Minnesota County Biological Survey
Areas of Biodiversity Significance
Canterbury Commons
Shakopee, MN

Legend

EAW Study Area

Areas of Biodiversity Significance

0 350 700
Feet

Sources: MetroGIS, MnDOT, NRCS, Scott County

FIGURE 8

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Appendix B

Agency Correspondence

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Michele Ross

From: Thomas Cinadr <thomas.cinadr@mnhs.org>
Sent: Thursday, January 19, 2017 8:29 AM
To: Michele Ross
Subject: Re: Request for Cultural Resources database review
Attachments: Archaeology.rtf; Historic.rtf

Categories: Filed by Newforma

THIS EMAIL IS NOT A PROJECT CLEARANCE.

This message simply reports the results of the cultural resources database search you requested. The database search produced results for only previously known archaeological sites and historic properties. Please read the note below carefully.

Archaeological sites and historic properties were identified in a search of the Minnesota Archaeological Inventory and Historic Structures Inventory for the search area requested. **Reports containing the results of the searches are attached.**

The result of this database search provides a listing of recorded archaeological sites and historic architectural properties that are included in the current SHPO databases. Because the majority of archaeological sites in the state and many historic architectural properties have not been recorded, important sites or structures may exist within the search area and may be affected by development or construction projects within that area. Additional research, including field survey, may be necessary to adequately assess the area's potential to contain historic properties.

Properties that are listed in the National Register of Historic Places (NRHP) or have been determined eligible for listing in the NRHP are indicated on the reports you have received. The following codes on the reports you received are:

NR – National Register listed. The properties may be individually listed or may be within the boundaries of a National Register District.

CEF – Certified Eligible to the National Register findings are usually made during the federal review process, these properties have been evaluated as being eligible for listing in the National Register.

SEF – Staff eligible findings to the National Register are properties that have been determined eligible by SHPO staff.

DOE – Determination of Eligibility is made by the National Park Service and typically refers to properties deemed eligible but the owner objects to the listing.

CNEF – Certified Not Eligible to the National Register. SHPO has begun to record properties that have been evaluated as **not eligible** for listing in the National Register. If the box on the form has a check the property has been determined to be **not eligible.**

Properties without **NR, CEF, SEF, DOE, or CNEF** designations in the reports you received may not have been evaluated and therefore no assumption to their eligibility can be made.

If you require a comprehensive assessment of a project's potential to impact archaeological sites or historic architectural properties, you may need to hire a qualified archaeologist and/or historian. If you need assistance with a project review, please contact Kelly Gragg-Johnson in Review and Compliance @ 651-259-3455 or by email at kelly.graggjohnson@mnhs.org.

The Minnesota SHPO Survey Manuals and Database Metadata can be found at **http://www.mnhs.org/shpo/survey/inventories.htm**

SHPO research hours are 8:30 AM – 4:00 PM Tuesday-Friday.

The Office is closed on Mondays.

Tom Cinadr
Survey and Information Management Coordinator
Minnesota Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. West
St. Paul, MN 55102

651-259-3453

On Wed, Jan 18, 2017 at 4:32 PM, Michele Ross <MRoss@sambatek.com> wrote:

Tom,

It is located in township 115, range 22 and section 5 – thank you!!

Michele Ross
Associate Planner
MRoss@sambatek.com

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MFRA is now Sambatek!

From: Thomas Cinadr [mailto:thomas.cinadr@mnhs.org]
Sent: Tuesday, January 17, 2017 10:42 AM
To: Michele Ross
Subject: Re: Request for Cultural Resources database review

Please send me the Township/Range/Section coordinates you wish searched.

Tom Cinadr

Survey and Information Management Coordinator

Minnesota Historic Preservation Office

Minnesota Historical Society

345 Kellogg Blvd. West

St. Paul, MN 55102

651-259-3453

On Mon, Jan 16, 2017 at 12:04 PM, Michele Ross <MRoss@sambatek.com> wrote:

Tom,

I am currently preparing an EAW for the Canterbury Commons project in the City of Shakopee in Scott County MN. The competed EAW for this project will be distributed to the State Historic Preservation Office at the Minnesota Historical Society during the 30 day review period for the EAW.

The project proposes development of approximately 830 residential units (700 apartments and 130 townhomes), 90,000 square feet of commercial uses (restaurant and entertainment), and a 120 room hotel. The project is located directly west of Canterbury Park. The parcels currently included in the environmental assessment include 274500100, 274500050, 274500090, 274500010, 279080681, 279080411. I have attached a general map of the project area.

Please review the project area to determine whether there are any known or likely cultural resources. The information received from you will be used in the EAW. Please contact me at 612-607-3542 if you have any questions or need any other information in order to process this request. Thank you!

Michele Ross
Associate Planner
MRoss@sambatek.com

Sambatek
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History/Architecture Inventory

PROPERTY NAME	ADDRESS	Twp	Range	Sec	Quarters	USGS	Report	NRHP	CEF	DOE	Inventory Number
COUNTY: Scott											
CITY/TOWNSHIP: Shakopee											
Isaac Atwater House (moved)	off Mn. Hwy. 101	115	22	5		Eden Prairie					SC-SPC-055
Faribault House		115	22	5	N-NE	Eden Prairie			Y		SC-SPC-057
Burger Farmstead		115	22	5	N-NE	Eden Prairie		Y			SC-SPC-058
Pond Grist Mill		115	22	5	N-NW	Eden Prairie		Y			SC-SPC-059
Shakopee Historic District		115	22	5	N-NW, N-	Eden Prairie		Y			SC-SPC-063

Archaeological Site Locations

Site Number	Site Name	Twp.	Range	Sec.	Quarter Sections	Acres	Phase	Site Description	Tradition	Context	Reports	NR	CEF	DOE
County:	**Scott**													
21SC0022	Pond Mounds	115	22	5	SW-NW-NW	35	1,3	EW,CEM,AS	W-1		SC-03-05	Yes		
	Pond Mounds	115	22	5	SW-NW-NW	35	1,3	EW,CEM,AS	W-1		THY-73-01	Yes		
	Pond Mounds	115	22	5	SW-NW-NW	35	1,3	EW,CEM,AS	W-1		THY-85-01	Yes		
	Pond Mounds	115	22	5	SW-NW-NW	35	1,3	EW,CEM,AS	W-1		MULT-93-01	Yes		
21SC0024	Steele	115	22	5	N-NE	75	2,1	EW, CEM	W-1	Ka-1, ED-1	THY-85-01	Yes		
	Steele	115	22	5	N-NE	75	2,1	EW, CEM	W-1	Ka-1, ED-1	MULT-93-01	Yes		
	Steele	115	22	5	N-NE	75	2,1	EW, CEM	W-1	Ka-1, ED-1	SC-03-05	Yes		
	Steele	115	22	5	N-NE	75	2,1	EW, CEM	W-1	Ka-1, ED-1	SC-78-01	Yes		
	Steele	115	22	5	N-NE	75	2,1	EW, CEM	W-1	Ka-1, ED-1	THY-73-01	Yes		
21SC0031	Murphy's House	115	22	5	C-NW-NW-NE	1	3	AS, SR		EA-1	SC-03-05	Yes		
	Murphy's House	115	22	5	C-NW-NW-NE	1	3	AS, SR		EA-1	MULT-93-01	Yes		
21SC0033	Murphy's Landing Terrace	115	22	5	NW-NW-NE	6	1	AS,SR	W-1	LW-1,ED-1,IC-1,EA-1	MULT-93-01	Yes		
	Murphy's Landing Terrace	115	22	5	NW-NW-NE	6	1	AS,SR	W-1	LW-1,ED-1,IC-1,EA-1	SC-03-05	Yes		
	Murphy's Landing Terrace	115	22	5	NW-NW-NE	6	1	AS,SR	W-1	LW-1,ED-1,IC-1,EA-1	SC-90-01	Yes		
21SC0072	Shenandoah Park	115	22	5	SE-NE-NW	0.5	1	LS						
21SC0081	Pond Mill	115	22	5	NE-NW-NW	1.3	1	AS,STR		RA-1	SC-03-05	Yes		

Site Number	Site Name	Twp.	Range	Sec.	Quarter Sections	Acres	Phase	Site Description	Tradition	Context	Reports	NR	CEF	DOE
County:	**Scott**													
21SC0082	National Youth Administration Camp 5 Limestone Quarry	115	22	5	NW-NE-NE-NW	0.5	1	OTH-STONE		TR-1	SC-03-05	Yes		
21SC0101	Faribault House Relocation	115	22	5	NW-NE-NE	0.1	1	AS		EA-1				

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Minnesota Department of Natural Resources
Division of Ecological & Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025

March 27, 2017
Correspondence # ERDB 20170287

Ms. Michele Ross
Sambatek, Inc.
12800 Whitewater Drive, Suite 300
Minnetonka, MN 55343

RE: Natural Heritage Review of the proposed Canterbury Commons,
T115N R22W Sections 5 & 8; Scott County

Dear Ms. Ross,

As requested, the Minnesota Natural Heritage Information System has been queried to determine if any rare species or other significant natural features are known to occur within an approximate one-mile radius of the proposed project. Based on this query, rare features have been documented within the search area (for details, please visit the Rare Species Guide at http://www.dnr.state.mn.us/rsg/index.html for more information on the biology, habitat use, and conservation measures of these rare species). Please note that the following rare features may be adversely affected by the proposed project:

- The loggerhead shrike (*Lanius ludovicianus*), a state-listed endangered bird, have been documented breeding in the vicinity of the proposed project in 1994. Loggerhead shrikes use grasslands that contain short grass and scattered perching sites such as hedgerows, shrubs, or small trees. They can be found in native prairie, pastures, shelterbelts, old fields or orchards, cemeteries, grassy roadsides, and farmyards. If the project boundary contains suitable habitat, then it is possible that these birds may breed in the area. Recommendations to minimize potential impacts include the following:
  - Avoid or minimize tree and shrub removal within suitable habitat during the breeding season, typically April through July,
  - If any tree or shrub removal will occur within suitable habitat during the breeding season, inspect the trees/shrubs for active nests prior to removal,
  - Report any loggerhead shrike sightings to the DNR,
  - Please reference the attached fact sheet and the DNR Rare Species Guide for additional recommendations.

- The gopher snake (*Pituophis catenifer*), a state-listed species of special concern, has been documented in the vicinity of the proposed project and may be encountered on site. These snakes prefer dry, sandy or bluff prairies and will nest or hibernate in old mammal burrows. Given the presence of these rare snakes, the DNR recommends the use of erosion control mesh, if any, be limited to wildlife-friendly materials (see enclosed fact sheet).

- The Environmental Assessment Worksheet should address whether the proposed project has the potential to adversely affect the above rare features and, if so, it should identify specific measures that will be taken to avoid or minimize disturbance.

- Please include a copy of this letter in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location (noted above) and the project description provided on the NHIS Data Request Form. Please contact me if project details change or for an updated review if construction has not occurred within one year.

The Natural Heritage Review does not constitute review or approval by the Department of Natural Resources as a whole. Instead, it identifies issues regarding known occurrences of rare features and potential effects to these rare features. If you have not done so already, please contact your DNR Regional Environmental Assessment Ecologist to determine whether there are other natural resource concerns associated with the proposed project (contact information available at http://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html). Please be aware that additional site assessments or review may be required.

Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources. An invoice will be mailed to you under separate cover.

Sincerely,

Samantha Bump
Natural Heritage Review Specialist
Samantha.Bump@state.mn.us

Enc. Loggerhead Shrike Fact Sheet, Wildlife Friendly Erosion Control

Cc: Becky Horton, Leslie Parris

Landowners Guide for Maintaining and Encouraging

Loggerhead Shrikes

Loggerhead shrikes are in trouble – but you may be able to help. Throughout the United States, and particularly in the Midwest, loggerhead shrikes are disappearing at an alarming rate. So serious is the decline that the loggerhead shrike is one of six bird species considered threatened in Minnesota.

What is a loggerhead shrike?

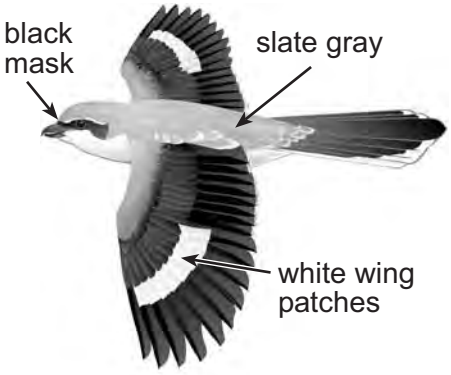
Loggerhead shrikes are special birds – an interesting cross between songbird and hawk. They feed on large insects such as grasshoppers and beetles, mice, small birds, frogs and toads. Shrikes spend much of their time perched on powerlines, fences or the top-most branches of trees and shrubs, scouting for prey and then swooping down to catch it. Then the bird either eats its prey, impales it on a nearby thorn or barbed wire fence or wedges it into the fork of a branch. Because shrikes lack the strong, sharp claws and feet of hawks, impaling food holds it in place as the bird tears at it with its bill. Your first clue that loggerhead shrikes are on your property may be finding an animal impaled on a fence barb or a thorn. This habit has earned the loggerhead shrike the nickname "butcher bird."

What do loggerhead shrikes look like?

The robin-sized loggerhead shrike has a slate-gray back with a light breast. The most distinguishing markings of this bird are the black mask, which extends across the eye, and the black and white wing and tail patches which flash when the bird flies. Males and females are similar in size and color.

In Minnesota, loggerhead shrikes are most easily confused with eastern kingbirds and northern shrikes. However, eastern kingbirds have no mask, their heads are entirely dark, and they do not have white patches on their wings. The northern shrike looks very similar to the loggerhead shrike, but occurs in Minnesota from October through April, whereas the loggerhead shrike is here from March to October. During the early spring and fall, when both shrikes are in the state, they can be told apart by the loggerhead shrike's completely black bill and its mask which extends across the top of the bill.

Loggerhead Shrike



Where do they live?

Loggerhead shrikes were once found throughout much of the unforested region of the state. Today, their numbers are very low. Recent surveys have located fewer than 30 nests in the state (Fig. 1). It is very important that we try to maintain habitat for the few shrikes that still breed in Minnesota.

Shrikes use grassy, open areas with scattered trees and shrubs such as pastures, prairie patches and grassy roadsides. A few trees and shrubs, along with fences and powerlines provide nesting sites and perches from

Eastern Kingbird

continued on back

which to hunt. Red cedar, hawthorn and plum trees are often used for nesting. A pair may range over 2.5 - 30 acres.

Loggerhead shrikes are early nesters, arriving in Minnesota from their wintering areas in the southern U.S. and Mexico in early spring. Shrikes lay 4-6 eggs that hatch after about 16 days. The young birds remain with their parents for about 4 weeks after leaving the nest. It is at this time that the birds are most conspicuous. Shrikes tend to nest in the same general areas from year to year, although they may be absent for a year or two and then return again, as long as the habitat remains.

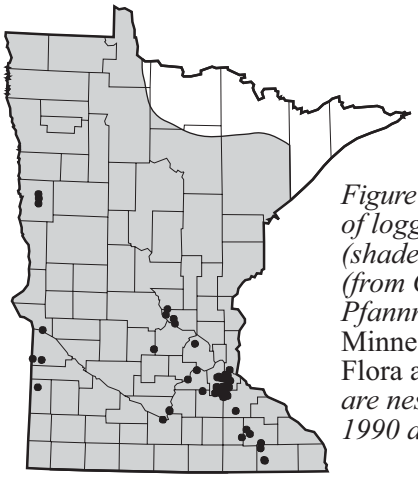


Figure 1. Historical range of loggerhead shrikes (shaded) in Minnesota. (from Coffin and Pfannmuller. 1988. Minnesota's Endangered Flora and Fauna). *Dots are nests found between 1990 and 1996.*

Why is the loggerhead shrike population declining?

The decline of the loggerhead shrike is likely the result a combination of factors, including loss of habitat resulting from the conversion of pasture and grasslands to houses or cropland and the encroachment of forest and brush on pastures and grasslands. In addition, changes in farming practices have resulted in larger fields and fewer trees, shrubs and fences scattered about. The increasing use of pesticides may also play a role in the decline of shrikes because these chemicals affect many animals that shrikes eat.

WHAT CAN YOU DO TO HELP LOGGERHEAD SHRIKES?

If there are shrikes nesting on your property, congratulations! You are one of a very few Minnesotans fortunate to share your property with such a unique bird. We hope you will want to help this bird continue its presence in your neighborhood. Obviously your land management practices and land use are already compatible if the birds have selected your land for nesting. While biologists continue to investigate the decline of the shrike there are things you can do on your property to encourage shrikes.

1. Leave fences standing for shrikes to use for perching and impaling food. If a fence must be removed, or if there are no fences near your grassland or pasture, you can create perch and impaling posts. To do this, wrap barbed wire near the top of a post. Place these posts along the edges of pastures and fields for shrikes to use. Your local nongame wildlife biologist can help you select the best locations for the posts.

2. Keep brush from encroaching upon grasslands by removal or burning, but only to the extent that the shrubs and trees don't dominate the grassland. A few scattered shrubs and trees are necessary to maintain the best shrike habitat.

3. Pastures and grassland are more attractive to shrikes than are row crops. Therefore, it is important to maintain existing pasture and grasslands. Investigate the Conservation Reserve Program (CRP) which pays farmers to retire highly erodible farmlands from production and to establish permanent grassland. Contact your local Natural Resources Conservation Service office (formerly the Soil Conservation Service) for more information about this program.

4. Take advantage of financial incentives for maintaining compatible land uses. In many counties, the Agricultural Preserve Program and/or the Green Acres Program provide tax adjustments and/or deferments to farmers to help them maintain their land for agricultural use. Contact your county assessor's office for more information about these programs.

5. Minimize use of pesticides. Pesticides can reduce the supply of large insects and other non-target animals that shrikes need. Also, because shrikes feed on animals at which pesticides are directed, these chemicals can build up in the birds and impair their ability to reproduce and reduce the survival of their young.

For more information about shrikes or to report loggerheads shrikes on your property please contact:

Nongame Wildlife Program
500 Lafayette Rd.,
St. Paul, MN 55155 or locally contact:
(651) 297-3764
1-800 766-6000

10/96

Preventing Entanglement by Erosion Control Blanket

Plastic mesh netting is a common component in erosion control blanket. It is utilized to hold loose fibrous materials in place (EG straw) until vegetation is established. Erosion control blanket is being utilized extensively and is effective for reducing soil erosion, benefitting both soil health and water quality. Unfortunately there is a negative aspect of the plastic mesh component: It is increasingly being documented that its interaction with reptiles and amphibians can be fatal (Barton and Kinkead, 2005; Kapfer and Paloski, 2011). Mowing machinery is also susceptible to damage due to the long lasting plastic mesh.

Potential Problems:

- Plastic netting remains a hazard long after other components have decomposed.
- Plastic mesh netting can result in entanglement and death of a variety of small animals. The most vulnerable group of animals are the reptiles and amphibians (snakes, frogs, toads, salamanders, turtles). Ducklings, small mammals, and fish have also been observed entangled in the netting.
- Road maintenance machinery can snag the plastic mesh and pull up long lengths into machinery, thus binding up machinery and causing damage and/or loss of time cleaning it out.

Suggested Alternatives:

- Do not use in known locations of reptiles or amphibians that are listed as Threatened or Endangered species.
- Limit use of blanket containing welded plastic mesh to areas away from where reptiles or amphibians are likely (near wetlands, lakes, watercourses, or rock outcrops) or habitat transition zones (prairie – woodland edges, rocky outcrop – woodland edges, steep rocky slopes, etc.)
- Select products with biodegradable netting (preferably made from natural fibers, though varieties of biodegradable polyesters also exist on the market). Biodegradable products will degrade under a variety of moisture and light conditions.
- DO NOT use products that require UV-light to degrade (also called “photodegradable”) as they do not degrade properly when shaded by vegetation.

Solution: Most categories of erosion control blanket and sediment control logs are available in natural net options.

- Specify ‘Natural Netting’ for rolled erosion control products, per MnDOT Spec 3885. See Table 3885-1.
- Specify ‘Natural Netting’ for sediment control logs, per MnDOT Spec 3897

The plastic mesh component of erosion control blanket becomes a net for entrapment.

Literature Referenced

Barton, C. and K. Kinkead. 2005. Do erosion control and snakes mesh? Soil and Water Conservation Society 60:33A-35A.
Kapfer, J.M., and R.A. Paloski. 2011. On the threat to snakes of mesh deployed for erosion control and wildlife exclusion. Herpetological Conservation and Biology 6:1-9.

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Appendix C

Geotechnical Report

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Geotechnical Evaluation Report

Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

Prepared for

Doran Companies, LLC

Professional Certification:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Eric J. Dagenhardt, PE
Project Engineer
License Number: 54281
February 16, 2017

Project B1700011

Braun Intertec Corporation

BRAUN INTERTEC
The Science You Build On.

BRAUN INTERTEC
The Science You Build On.

Braun Intertec Corporation
11001 Hampshire Avenue S
Minneapolis, MN 55438

Phone: 952.995.2000
Fax: 952.995.2020
Web: braunintertec.com

February 16, 2017

Project B1700011

Ms. Melissa Duce
Doran Companies, LLC
7803 Glenroy Road, Suite 200
Bloomington, MN 55439

Re: Geotechnical Evaluation
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

Dear Ms. Duce:

We are pleased to present this Geotechnical Evaluation Report for the Canterbury Apartment development project in Shakopee, Minnesota. Thank you for making Braun Intertec your geotechnical consultant for this project. If you have questions about this report, or if there are other services that we can provide in support of our work to date, please call Eric Dagenhardt at 952.995.2251 or Ray Huber at 952.995.2260.

Sincerely,

BRAUN INTERTEC CORPORATION

Eric J. Dagenhardt, PE
Project Engineer

Ray A. Huber, PE
Vice President – Principal Engineer

c: Mr. Jason Petersen, Doran Companies, LLC
Mr. Tony Kuechle, Doran Companies, LLC
Mr. Erik Miller, Sambatek
Mr. George Abernathy, Sambatek

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Appendix

A. Introduction

A.1. Project Description

This Geotechnical Evaluation Report addresses the proposed design and construction of the Canterbury Apartment development located in Shakopee, Minnesota. This development will consist of two, three-level buildings connected by a central clubhouse containing the pool and other complex amenities. Both buildings will be constructed so that the apartment units wrap around a central parking garage ("Texas Doughnut" design). Construction of the first building is anticipated to start in fall of 2017.

Table 1 below presents additional aspects of the buildings.

Table 1. Building Description

Aspect	Description
Below grade levels	0
Above grade levels	3
Lowest level floor elevation	750 (North Building, Club House) 752 (South Building)
Maximum column loads (kips)	500 (Assumed)
Maximum wall loads (kips/ft)	10 (Assumed)
Nature of construction	Precast Concrete (Parking Ramp) Wood Framed (Residential Units)
Cuts for buildings (feet)	Up to 7 (North Building, Club House) Up to 8 (South Building)
Fills for buildings (feet)	Up to 4 (North Building, Club House) Up to 2 (South Building)

A.1.a. Site Conditions

We understand this site historically has been used for agricultural purposes. However, as shown below outlined in Photograph 1, after the harvest this site is used for parking and attractions as part of the Sever's Fall Festival and Corn Maze.

Current grades range from about elevation 749 to 760. Generally, the northern half of the site elevations range from 750 to 753, while the southern half of the site elevations range from 756 to 759.

Photograph 1. Aerial Photograph of the Site

Photograph provided by Google Earth

A.1.b. Basis of Understanding

We have described our understanding of the proposed construction and site to the extent others reported it to us. Depending on the extent of available information, we may have made assumptions based on our experience with similar projects. If we have not correctly recorded or interpreted the project details, the project team should notify us. New or changed information could require additional evaluation, analyses and/or recommendations.

A.2. Purpose

The purpose of our geotechnical evaluation will be to characterize subsurface conditions at selected exploration locations and evaluate their impact on the design and construction of the Canterbury Apartment development.

A.3. Background Information

We initially performed soil borings on this site in May 2016 as part of a larger 31-acre, multi-family apartment development. As the development aspects were not defined once our soil borings were performed, we did not prepare a geotechnical evaluation for the site.

We were provided a site plan prepared by Sambatek and dated December 2, 2016. This proposed site layout was used as our basis for selecting the test pit locations. We recommended test pits due to our knowledge of the shallow bedrock from our 2016 soil borings.

After our test pits were performed, we met with members of the design team in February 2017 to discuss the proposed development. At this meeting we were provided a new site plan of the proposed apartment complex. This layout can be found on our Soil Boring and Test Pit Location Sketch in the Appendix portion of this report. That layout was used as the basis of this evaluation.

A.4. Scope of Services

We performed our scope of services for the project in accordance with our Proposal QTB049862, dated December 12, 2016, and authorized on December 30, 2016. The following list describes the geotechnical tasks completed in accordance with our authorized scope of services.

- Reviewing the background information and reference documents previously cited.

- Staking and clearing the exploration location of underground utilities. We selected and staked the test pit locations. We acquired the surface elevations and locations with GPS technology using the State of Minnesota's permanent GPS base station network. The Soil Boring and Test Pit Location Sketch included in the Appendix shows the approximate locations of the borings and test pits.

- Performing 26 shallow test pits, denoted as TP-1 to TP-26, extending to the bedrock surface. At selected test pit locations, the bedrock was to be scraped with the backhoe to determine competency of the rock.

- Performing laboratory testing on select samples to aid in soil classification and engineering analysis.

- Preparing this report containing a test pit location sketch, test pit logs, a summary of the soils encountered, results of laboratory tests, and recommendations for structure and pavement subgrade preparation and the design of foundations, floor slabs, exterior slabs, utilities, and pavements.

B. Results

B.1. Geologic Overview

We based the geologic origins used in this report on the soil types, in-situ and laboratory testing, and available common knowledge of the geological history of the site. Because of the complex depositional history, geologic origins can be difficult to ascertain. We did not perform a detailed investigation of the geologic history for the site.

B.2. Previous Geotechnical Information

We performed 15 soil borings as part of a 31-acre proposed development in May 2016. Of these 15 soil borings, 8 were performed within the extents of this development (ST-1, ST-2, ST-4, ST-5, ST-7, ST-8, ST-10 and ST-11). These 8 soil borings encountered auger refusal at the bedrock surface ranging from 1 1/2 to 8 feet below the existing surface. We included these soil boring results with the test pits below.

B.3. Test Pit & Boring Results

Table 2 provides a summary of the test pits (TP-1 to TP-26) and 2016 soil boring results (ST-1, ST-2, ST-4, ST-5, ST-7, ST-8, ST-10 and ST-11), in the general order we encountered strata. Please refer to the Log of Test Pit and Boring sheets in the Appendix for additional details. The Descriptive Terminology in the Appendix includes definitions of abbreviations used in Table 2.

Table 2. Subsurface Profile Summary*

Strata	Soil Type - ASTM Classification	Range of Penetration Resistances (Soil Borings Only)	Commentary and Details
Topsoil	SM, SC, CLS	N/A	▪ Generally a mixture of silty sand and clayey sand. ▪ Ranges in thickness from approximately 1/2 feet to 3 1/2 feet. ▪ In areas of bedrock within 2 feet of the surface, the topsoil generally extends to the bedrock. ▪ Slightly organic based on laboratory testing ▪ Dark brown to black in color.
Fill	SP-SM, SM, CLS	7 (ST-10)	▪ Encountered in soil boring ST-10 and test pits TP-3 and TP-4. ▪ TP-3 and TP-4 located near the tree line on the north end of the site. It appears the farmer buried boulders along the tree line. Fill in this area extends to the bedrock surface. ▪ Extends to 4 feet below the surface at ST-10.
Glacial deposits	SP, SM	25 to 51 BPF	▪ Intermixed layers of glacial outwash and till. ▪ Variable amounts of gravel; may contain cobbles and limestone floats. ▪ Generally silty sands and clayey sands on the northern half of the site. ▪ Sandy lean clays and lean clays glacial till soils generally encountered on the southern half of the site.
	SC, CLS, CL, ML	5 to 8 BPF	
Bedrock	Limestone	50 blows for 2 to 6 inches of penetration	▪ The Prairie du Chien Group limestone formation, which predominately consists of dolomitic limestone and dolomite. ▪ Generally well cemented and not extensively weathered. ▪ See Table 3 in Section C.1 for bedrock surface elevations. Bedrock surface ranged in elevations 741.5 to 757.9. ▪ Soil boring auger generally met refusal at the surface of the bedrock or within 2 feet into the rock. However, one soil boring was able to penetrate up to 4 feet into the limestone bedrock. ▪ Generally, the backhoe during test pits was able to rip bedrock between 6 inches and 1 foot. One test pit was able to rip approximately 2 1/2 feet into the highly weathered limestone.

*Abbreviations defined in the attached Descriptive Terminology.

For simplicity in this report, we define fill to mean existing, uncontrolled or undocumented fill.

B.4. Groundwater

We did not observe groundwater while advancing our borings. Therefore, it appears that groundwater is below the depths explored. However, project planning should anticipate seasonal and annual fluctuations of groundwater.

B.5. Laboratory Test Results

We performed a small laboratory testing program on selected samples collected during the test pits. Generally, we performed mechanical analyses (through a number 200 sieve only) to aid in the classification of the overburden soils above the bedrock. We also performed organic content tests on selected topsoil samples. The test pit logs show the results of these lab tests next to the tested sample depth.

C. Recommendations

C.1. Site Grading and Subgrade Preparation

As presented earlier in this report, the bedrock is shallow across this site. Therefore, the finished floor elevation of 750 for the north building and clubhouse and 752 for the south building have been established by the design team to minimize grading and bedrock removal across the site to construct these buildings. Presented below in Table 3 are the surface and bedrock elevations and anticipated excavations within the building pads. Any soil borings or test pits performed within green areas or pavement areas are not included in this table (TP-5, TP-8, TP-14, TP-15, TP-19, TP-22 and ST-7, ST-8, ST-10, ST-11) as site grades have not been provided.

Table 3. Anticipated Excavation Depths in Building Pads

Test Pit (Location)	Surface Elevation	Approximate Bedrock Elevation	Anticipated Bedrock Removal Depth for FFE (Feet)	Approximate Total Removal Depths for FFE (Feet)	Approximate Bottom of Excavation	Approximate Footing Embedment Depth (Feet)
TP-1 (N. Bldg)	750.5	747.2	0	2	748 1/2	3
TP-2 (N. Bldg)	750.6	747.6	0	1	749 1/2	2 1/2
TP-3 (N. Bldg)	749.4	744.9	0	2	747 1/2	4*
TP-4 (N. Bldg)	752.6	747.1	0	2 1/2	750	3
TP-6 (N. Bldg)	750.8	746.3	0	1 1/2	749 1/2	3 1/2
TP-7 (N. Bldg)	749.4	747.9	0	1 1/2	748	2
TP-9 (N. Bldg)	756.4	753.4	4	6 1/2	750	1
TP-10 (N. Bldg)	751.3	747.3	0	1 1/2	750	3
TP-11 (N. Bldg)	750.5	749.0	0	1	749 1/2	1
TP-12 (CH)	757.1	753.6	4	7	750	1
TP-13 (CH)	753.1	751.6	2	3	750	1
TP-16 (S. Bldg)	758.0	756.5	5	6	752	1
TP-17 (S. Bldg)	753.3	750.3	0	3	750 1/2	1 1/2
TP-18 (S. Bldg)	752.0	745.5	0	2	750	4*
TP-20 (S. Bldg)	759.1	753.1	1	7	752	1
TP-21 (S. Bldg)	757.7	750.2	0	5 1/2	752	2
TP-23 (S. Bldg)	760.2	756.7	5	8	752	1
TP-24 (S. Bldg)	760.0	757.0	5	8	752	1
TP-25 (S. Bldg)	758.4	753.9	2	6 1/2	752	1
TP-26 (S. Bldg)	757.6	752.6	1/2	5 1/2	752	1
ST-1 (N. Bldg)	750.3	746.3	0	2	748	3 1/2
ST-2 (N. Bldg)	749.1	745.1	0	2	747	4*
ST-4 (N. Bldg)	751.3	749.8	0	1 1/2	750	1
ST-5 (N. Bldg)	750.1	748.6	0	1 1/2	748 1/2	1 1/2

*Based on bedrock elevations, these footings are not supported directly on the bedrock unless they are dropped deeper than the required frost depth.

For building subgrade preparation, we recommend removing the topsoil and any organic soils from below the proposed building pad and oversize area. After excavation of any unsuitable soils, the subgrade should be surface compacted prior to any engineered fill or placement of foundations in accordance with Section C.2.a below. In areas where the exposed surface is the limestone bedrock, this surface compaction requirement can be waived. Prior to fill or foundation placement, we recommend the excavation bottom be observed by a geotechnical engineer to verify that the bottom soils are suitable for fill and/or foundation support.

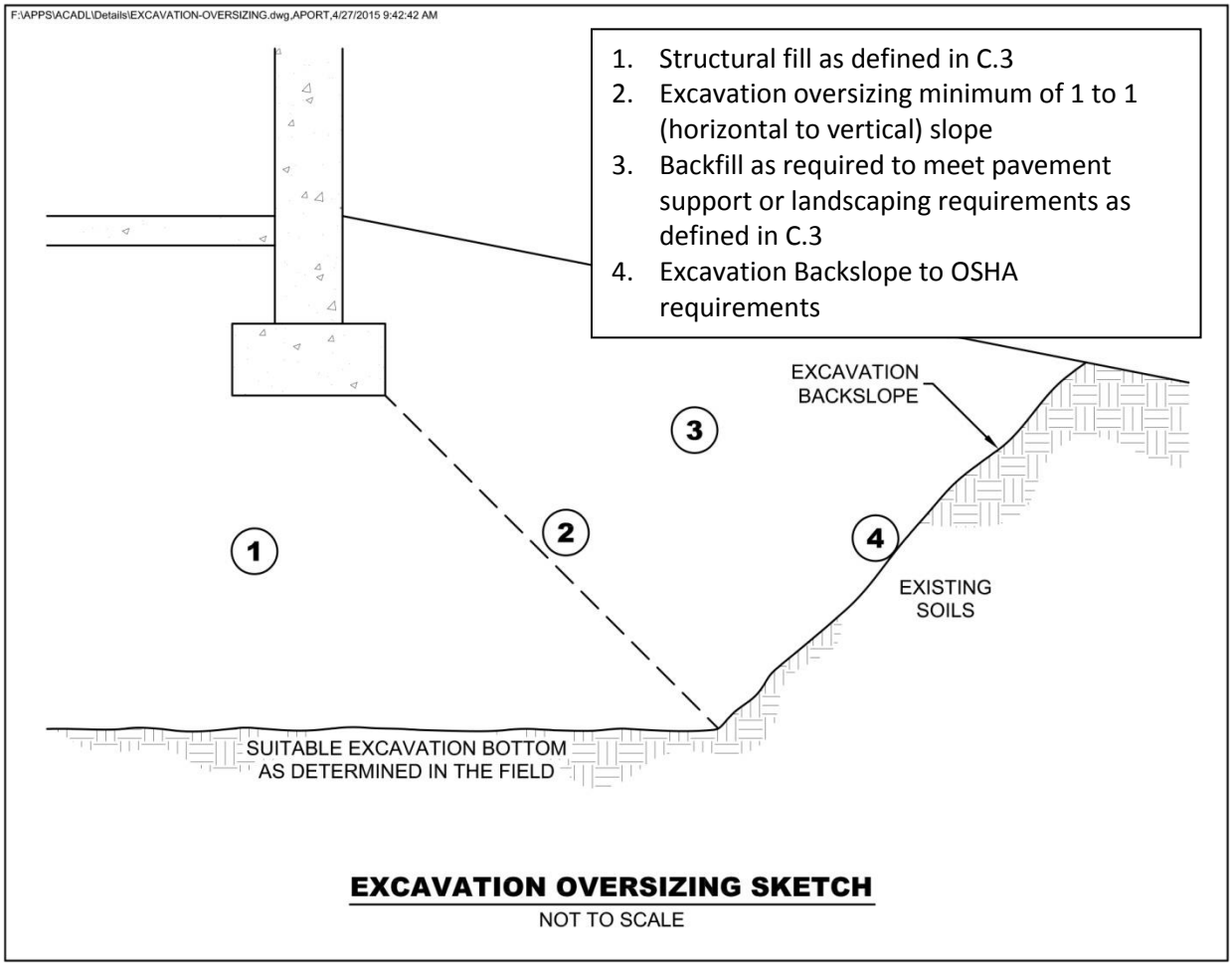
We anticipate the north building and clubhouse will require engineered fill to reach finished floor elevations after the subcut of unsuitable soils. The south building is generally cut to grade, therefore, engineered fill may only be required in isolated areas of the building pad.

As shown in Table 3 above, the south building will require a significant amount of bedrock removal to reach the slab subgrade elevation. This rock removal may extend up to 5 feet in some areas. An additional foot of bedrock removal may be required to embed spread footings below the slab. The north building may only see isolated rock removals within the building pad to reach slab subgrade elevation. To remove bedrock, the weathered surficial bedrock could be ripped with a large backhoe or dozer, however, other mechanical methods, such as pneumatic hammers or blasting, may be required to remove large amounts of bedrock with in the building pad.

C.1.a. Excavation Oversizing

When removing unsuitable materials below structures or pavements, we recommend the excavation extend outward and downward at a slope of 1H:1V (horizontal:vertical) or flatter. See Figure 1 for an illustration of excavation oversizing.

Figure 1. Generalized Illustration of Oversizing



C.1.b. Surface Compaction

In areas where the bedrock surface is not exposed at the base of the excavation, the native soils should be surface compacted prior to placement of engineered fill or foundations. We recommend the exposed excavation bottoms be surface compacted with a minimum of five passes with a self-propelled, vibratory sheepsfoot compactor with a minimum drum diameter of 3 feet. Moisture conditioning of the excavation bottom may be required prior to surface compaction.

C.1.c. Excavated Slopes

Based on the borings and test pits, we recommend project planning anticipate the soils will be Type C Soil under OSHA (Occupational Safety and Health Administration) guidelines. Therefore, planning should anticipate unsupported excavations at a gradient no steeper than 1 1/2H:1V. Slopes constructed in this manner may still exhibit surface sloughing.

An OSHA approved qualified person should review this soil classification in the field. Excavations must comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P, "Excavations and Trenches." This document states excavation safety is the responsibility of the contractor. The project specifications should reference these OSHA requirements. OSHA also requires an engineer to evaluate slopes or excavations over 20 feet in depth.

C.1.d. Fill Materials and Compaction

Table 4 below contains our recommendations for fill materials.

Table 4. Soil for Fill Description*

Locations to Be Used	Fill Classification	Possible Soil Type Descriptions	Gradation	Additional Requirements
Below foundations Below interior slabs	Structural Fill	SP, SP-SM,	100% passing 2-inch sieve	< 2% OC P200 < 20%
Pavements	Pavement Fill	SP, SM, SC, CL,	100% passing 3-inch sieve	< 2% OC PI < 20%
Pavements	Pavement Fill	Crushed Limestone Bedrock	12-inch maximum size	
Below landscaped surfaces, where subsidence is not a concern	Non-Structural Fill		100% passing 6-inch sieve	< 10% OC

* Fill materials should satisfy the approved Response Action Plan (RAP), or applicable environmental requirements.

* More select soils comprised of coarse sands with < 5% passing #200 sieve may be needed to accommodate work occurring in periods of wet or freezing weather.

We recommend spreading fill in loose lifts of approximately 12 inches. We recommend compacting fill in accordance with the criteria presented below in Table 5. The project documents should require relative compaction of fill, based on the structure located above the fill, and vertical proximity to that structure.

Table 5. Compaction Recommendations Summary

Reference	Relative Compaction, percent (ASTM D 698 – Standard Proctor)	Moisture Content Variance from Optimum, percentage Points
Below foundations	100%	±3 for Sand Soils
Below slabs	95%	±3 for Sand Soils
Below pavements, within 3 feet of subgrade elevations	100%	-2 to +1 for Clayey Soils ±3 for Sand Soils
Below pavements, more than 3 feet below subgrade elevations	95%	±3 for Clayey Soils ±3 for Sand Soils
Below landscaped surfaces	90%	±5

The project documents should not allow the contractor to use frozen material as fill or to place fill on frozen material.

We recommend performing density tests in fill.

C.1.e. Special Inspections of Soils

We recommend including the site grading and placement of fill within the building pad under the direction of Special Inspections, as provided in Chapter 17 of the International Building Code. This requires observation of soil conditions below fill or footings, evaluations to determine if excavations extend to the anticipated soils, and if fill materials meet requirements for type of fill and compaction condition of fill. A licensed geotechnical engineer should direct the Special Inspections of site grading and fill placement. The purpose of these special inspections is to evaluate whether the work is in accordance with the approved Geotechnical Report for the project. Special Inspections should include evaluation of the subgrade, observing preparation of the subgrade (surface compaction, excavation oversizing, placement procedures and materials used for fill, etc.) and compaction testing of the fill.

C.2. Spread Footings

C.2.a. Embedment Depth

For frost protection, we recommend embedding perimeter footings 42 inches below the lowest exterior grade. Interior footings may be placed directly below floor slabs. If footings are on bedrock, full embedment depth would not be needed assuming the bedrock is competent and not fractured or weathered.

We recommend embedding building footings not heated during winter construction, and other unheated footings associated with canopies, stoops, sidewalks, or unheated buildings, 60 inches below the lowest exterior grade. Again, if footings are on competent bedrock, full embedment depth would not be needed.

C.2.b. Net Allowable Bearing Pressure

We recommend sizing spread footings to exert a net allowable bearing pressure of 10,000 pounds per square foot (psf) when placed on competent bedrock. This value includes a safety factor of at least 3.0 with regard to bearing capacity failure.

If the footings are not dropped to the limestone bedrock and bear on structural fill or native soils, we recommend sizing spread footings to exert a net allowable bearing pressure of 5,000 psf. This value also includes a safety factor of at least 3.0 with regard to bearing capacity failure.

C.2.c. Settlement

The total settlement of the spread footings supported by competent bedrock will be negligible. However, we estimate the total settlement for footings supported on native soils or structural fill be less than 1/2 inch. This settlement will be differential to the foundation supported by the bedrock.

C.3. Interior Slabs

C.3.a. Subgrade Modulus

After site grading is performed to remove vegetation, topsoil and unsuitable soils within the building pad, we anticipate the north building to have an engineered fill floor subgrade. The south building will require significantly more bedrock removal to construct the slab on grade, therefore, we anticipate in most areas of the slab a thin sand section between the bedrock and slab as a subgrade to provide separation. We recommend using a modulus of subgrade reaction, k, of 200 pounds per square inch per inch of deflection (pci) to design the slabs. If a minimum of 6 inches of compacted crushed gravel aggregate base is placed immediately beneath the floor slabs of if the slab requires a thin sand section to separate the slab from the bedrock, it is our opinion that the modulus may be increased by 50 pci.

C.3.b. Moisture Vapor Protection

Excess transmission of water vapor could cause floor dampness, certain types of floor bonding agents to separate, or mold to form under floor coverings. If project planning includes using floor coverings or coatings, we recommend placing a vapor retarder or vapor barrier immediately beneath the slab. We also recommend consulting with floor covering manufacturers regarding the appropriate type, use and installation of the vapor retarder or barrier to preserve warranty assurances.

C.4. Exterior Slabs

Though not necessarily designed to accommodate dead and live load surcharges or vehicles, exterior slabs can be subjected to both. Settlement of exterior slabs on poorly compacted foundation backfill, utility backfill and other compressible naturally deposits soils or fills can also contribute to unfavorable surface drainage conditions and frost-related damage (see below) to the slabs and adjacent structures, including buildings and pavements. We recommend subgrades supporting exterior slabs should therefore be prepared in accordance with the subgrade preparation and subgrade fill and compaction recommendations provided below in Section C.5. Additional commentary on risks associated with frost, and recommendations for helping mitigate those risks, is provided in Section C.6.

C.5. Pavements

C.5.a. Pavement Subgrade Preparation

We recommend the following steps for pavement and exterior slab subgrade preparation, understanding the site will generally have a grade change of 4 feet or less. Note that project planning may need to require additional subcuts to limit frost heave. Frost heave considerations are found below in Section C.6.

1. Strip unsuitable soils consisting of vegetation, topsoil and organic soils from the area, within 3 feet of the surface of the proposed pavement grade. In some pavement areas we anticipate the bedrock surface to be within 3 feet of the surface.

2. Surface compact the exposed subgrade in accordance with Section C.1.b. We recommend the existing subgrade be surface compacted to a minimum of 100 percent of standard Proctor density if within 3 feet of the proposed pavement subgrade. If below 3 feet, surface compaction of 95 percent should be adequate. Note, this surface compaction requirement can be waived in areas where the bedrock surface is exposed.

3. Have a geotechnical engineer or a technician working under a geotechnical engineer observe the excavated subgrade to evaluate if additional subgrade improvements are necessary.

4. Place Pavement Fill to grade and compact in accordance with Section C.1.d to bottom of pavement and exterior slab section. As noted in Table 4 of this section, crushed or pulverized bedrock removed during site grading of the building pad is suitable as fill beneath pavements. We recommend the use of large machines, such as a Caterpillar D10, in addition to a large sheepsfoot roller to further break down and compact the rock. The maximum size of rock used below pavements subgrade is 12 inches.

5. Proofroll the subgrade as described below in Section C.5.b.

C.5.b. Pavement Subgrade Proofroll

After preparing the subgrade as described above and prior to the placement of the aggregate base, we recommend proofrolling the subgrade soils with a fully loaded tandem-axle truck. We also recommend having a geotechnical engineer or a technician working under the direction of a geotechnical engineer observe the proofroll. This will assist in identifying soft or weak areas that will require additional soil correction work.

The contractor should correct areas that display excessive yielding or rutting during the proofroll. Possible options for subgrade correction include: moisture conditioning and recompaction, subcutting

and replacement with soil or crushed aggregate. We recommend performing a second proofroll after the aggregate base material is in place, and prior to placing bituminous or concrete pavement.

C.5.c. Design Sections

Our scope of services for this project did not include laboratory tests on subgrade soils to determine an R-value for pavement design. Based on our experience with similar soils anticipated at the pavement subgrade elevation, we recommend pavement design assume an R-value of 12 for a clay subgrade and 50 for a sand or crushed bedrock subgrade. Note to achieve this value some localized removals of less suitable soils may be needed.

Table 6 provides recommended pavement sections, based on the soils support and traffic loads. As the parking lot areas will generally be used for resident automobiles, we recommend the light duty pavement section in the table below. Should any pavement areas be subjected to delivery and trash trucks, the medium duty pavement or concrete pavement sections should be considered.

Table 6. Recommended Bituminous and Concrete Pavement Sections

Layer	Thickness (inches)	
	Light Duty Pavement (Parking Stalls)	
	Sand or Crushed Rock Subgrade	**Clay Subgrade**
Bituminous Wear Course	1 1/2	1 1/2
Bituminous Base Course	1 1/2	1 1/2
Aggregate Base	6	12
	Medium Duty Pavement (Drive Lanes/Delivery Areas)	
Bituminous Wear Course	2	2
Bituminous Base Course	2	2
Aggregate Base	6	12
	Concrete Pavement	
Concrete*	6	
Aggregate Base	6	

*Concrete designs are based on a modulus of subgrade reaction (k) of 200 pci.

C.5.d. Concrete Pavements

We assumed the concrete pavement sections in Table 6 will have edge support. We recommend an aggregate base below the pavement to provide a suitable subgrade for concrete placement, reduce faulting, and help dissipate loads. Appropriate mix designs, panel sizing, jointing, doweling and edge reinforcement are critical to performance of rigid pavements. We recommend you contact your civil engineer to determine the final design or consult with us for guidance on these items.

C.5.e. Subgrade Drainage

We recommend installing perforated drainpipes throughout pavement areas at low points and around catch basins. The drainpipes should be placed in small trenches extended at least 8 inches below the granular subbase layer – or aggregate base material where no subbase is present.

C.5.f. Performance and Maintenance

We based the above pavement designs on a 20-year performance life for bituminous and a 35-year life for concrete. This is the amount of time before we anticipate the pavement will require reconstruction. This performance life assumes routine maintenance, such as seal coating and crack sealing. The actual pavement life will vary depending on variations in weather, traffic conditions and maintenance.

It is common to place the non-wear course of bituminous and then delay placement of wear course. For this situation, we recommend evaluating if the reduced pavement section will have sufficient structure to support construction traffic.

Many conditions affect the overall performance of the exterior slabs and pavements. Some of these conditions include the environment, loading conditions and the level of ongoing maintenance. With regard to bituminous pavements in particular, it is common to have thermal cracking develop within the first few years of placement, and continue throughout the life of the pavement. We recommend developing a regular maintenance plan for filling cracks in exterior slabs and pavements to lessen the potential impacts for cold weather distress due to frost heave or warm weather distress due to wetting and softening of the subgrade.

C.6. Frost Protection

We consider the native silty or clayey soils, where encountered, to be moderately to highly frost susceptible. Most of the exterior slabs, as well as pavements, will be underlain with these soils. Such soils can retain moisture and heave upon freezing. In general, this characteristic is not an issue unless these soils become saturated due to surface runoff or infiltration or are excessively wet in-situ. Once frozen,

unfavorable amounts of general and isolated heaving of the soils and the surface structures supported on them could develop. This type of heaving could impact design drainage patterns and the performance of exterior slabs and pavements, as well as any isolated exterior footings and piers.

It should be noted that general runoff and infiltration from precipitation are not the only sources of water that can saturate subgrade soils and contribute to frost heave. Roof drainage and the irrigation of landscaped areas in close proximity to exterior slabs, pavements, and isolated footings and piers, contribute as well.

C.6.a. Frost Heave Mitigation

To address most of the heave related issues, we recommend setting general site grades and grades for exterior surface features to direct surface drainage away from buildings, across large paved areas and away from walkways. Such grading will limit the potential for saturation of the subgrade and any subsequent heaving. General grades should also have enough "slope" to tolerate potential larger areas of heave, which may not fully settle after thawing.

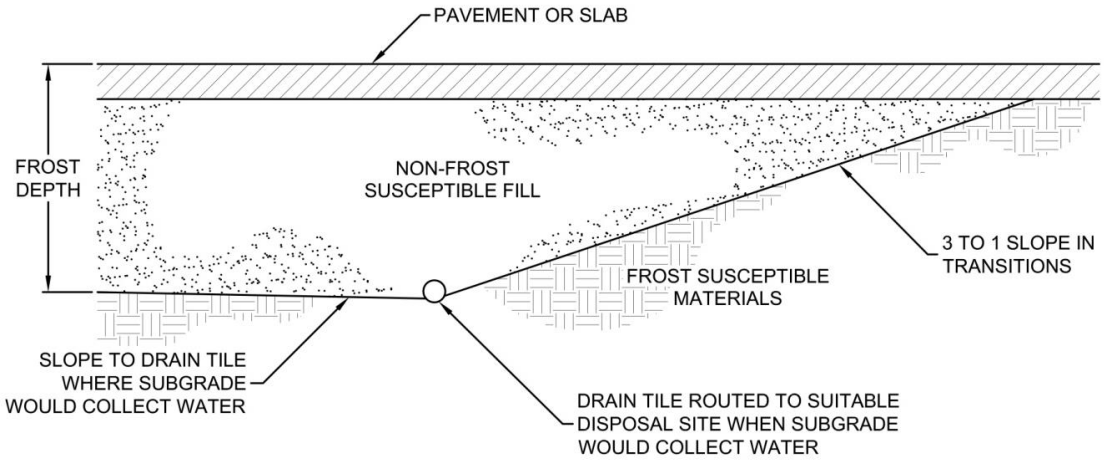
Even small amounts of frost-related differential movement at walkway joints or cracks can create tripping hazards. Project planning can explore several subgrade improvement options to address this condition.

One of the more conservative subgrade improvement options to mitigate potential heave is removing any frost-susceptible soils present below the exterior slabs' "footprints" down to a minimum depth of 3 feet below subgrade elevations or to bedrock. We recommend filling the resulting excavation with sand or sandy gravel having less than 50 percent of the particles by weight passing the #40 sieve and less than 5 percent of the particles by weight passing a #200 sieve. We also recommend sloping the bottom of the excavation toward one or more collection points to remove any water entering the fill. This approach will not be effective in controlling frost heave without removing the water.

An important geometric aspect of the excavation and replacement approach described above is sloping the banks of the excavations to create a more gradual transition between the unexcavated soils considered frost-susceptible and the excavation fill, which is not frost-susceptible. The slope allows attenuation of differential movement that may occur along the excavation boundary. We recommend 3H:1V, or flatter, banks along transitions between frost-susceptible and non-frost-susceptible soils.

Figure 2 shows an illustration summarizing some of the recommendations.

Figure 2. Frost Protection Geometry Illustration



Another option is to limit frost heave in critical areas, such as doorways and entrances, via stoops or localized excavations with sloped transitions between frost-susceptible and non-frost-susceptible soils, as described above.

Over the life of slabs and pavements, cracks will develop and joints will open up, which will expose the subgrade and allow water to enter from the surface and either saturate or perch atop the subgrade soils. This water intrusion increases the potential for frost heave or moisture-related distress near the crack or joint. Therefore, we recommend implementing a detailed maintenance program to seal and/or fill any cracks and joints. The maintenance program should give special attention to areas where dissimilar materials abut one another, where construction joints occur and where shrinkage cracks develop.

C.7. Utilities

C.7.a. Subgrade Stabilization

The native soils encountered at typical invert elevations generally appear suitable for utility support. However, if unstable or organic soils are encountered at pipe invert elevations, they should be subcut and replaced with engineered backfill or crushed rock.

Depending on the location and depth of the proposed utilities, bedrock may be encountered at the utility elevations. Where bedrock is encountered at utility elevations we recommend it be subcut an additional 3 to 4 inches below the utility and replaced with crushed rock to provide a more uniform subgrade for utility support and to reduce potential point loads. As discussed earlier, the weathered limestone may be

ripped by large backhoes or dozers, however, other mechanical methods, such as pneumatic hammers or blasting, could be required to achieve the invert elevations for utility installation.

C.7.b. Selection, Placement and Compaction of Backfill

We recommend selecting, placing, and compacting utility backfill in accordance with the recommendations provided above in Section C.1.

C.7.c. Corrosion Potential

Based on our experience, the native soils encountered by the borings and test pits, where encountered, are moderately corrosive to metallic conduits, but only marginally corrosive to concrete. We recommend specifying non-corrosive materials or providing corrosion protection, unless project planning chooses to perform additional tests to demonstrate the soils are not corrosive.

C.8. Stormwater

Due to the location of the shallow bedrock surface, we do not recommend stormwater be infiltrated on this site. Infiltrating water into the bedrock could cause karst conditions. Therefore, to manage stormwater on this site, we recommend the use of stormwater filtration ponds. To construct these filtration ponds, the limestone bedrock should be capped with 2 to 3 feet of non-organic clay. Drain tile should be placed on top of the clay, and then capped with 2 to 3 feet of free-draining sand. Based on the soils encountered during the test pits, we anticipate the free-draining sand will need to be imported. The clays encountered during site grading should be tested for suitability to prevent infiltration through this cap as part of this filtration system.

D. Procedures

D.1. Penetration Test Borings

We drilled the penetration test borings with a truck-mounted core and auger drill equipped with hollow-stem auger. We performed the borings in general accordance with ASTM D1586 taking penetration test samples at 2 1/2-foot intervals. The boring logs show the actual sample intervals and corresponding depths.

D.2. Exploratory Test Pits

Minnesota Utilities and Excavating excavated the test pits with a backhoe, under the direction and observation of our staff. We prepared Test Pit Logs by visually examining the sidewalls of the test pits and classifying the materials brought to the surface by the backhoe bucket. We measured strata boundary depths with a tape and generally rounded to the nearest 1/2 foot.

D.3. Exploration Logs

D.3.a. Log of Boring Sheets

The Appendix includes Log of Boring sheets for our penetration test borings. The logs identify and describe the penetrated geologic materials, and present the results of penetration resistance. The logs also present the results of laboratory tests performed on penetration test samples and groundwater measurements.

We inferred strata boundaries from changes in the penetration test samples and the auger cuttings. Because we did not perform continuous sampling, the strata boundary depths are only approximate. The boundary depths likely vary away from the boring locations, and the boundaries themselves may occur as gradual rather than abrupt transitions.

D.3.b. Log of Test Pit Sheets

The Appendix also includes Log of Test Pit sheets. The logs classify and describe the geologic materials exposed in the sidewalls and bottoms of the pits, present the results of laboratory tests performed on bulk samples obtained from them, and depict groundwater measurements.

D.3.c. Geologic Origins

We assigned geologic origins to the materials shown on the logs and referenced within this report, based on: (1) a review of the background information and reference documents cited above, (2) visual classification of the various geologic material samples retrieved during the course of our subsurface exploration, (3) penetration resistance and other in situ testing performed for the project, (4) laboratory test results, and (5) available common knowledge of the geologic processes and environments that have impacted the site and surrounding area in the past.

D.4. Material Classification and Testing

D.4.a. Visual and Manual Classification

We visually and manually classified the geologic materials encountered in accordance with ASTM Standard Practice D 2488. The Appendix includes a chart explaining the classification system.

D.4.b. Laboratory Testing

The exploration logs in the Appendix note most of the results of the laboratory tests performed on geologic material samples. The remaining laboratory test results follow the exploration logs. We performed the tests in general accordance with ASTM procedures.

D.5. Groundwater Measurements

The drillers checked for groundwater while advancing the penetration test borings, and again after auger withdrawal. We then filled the boreholes or allowed them to remain open for an extended period of observation, as noted on the boring logs.

E. Qualifications

E.1. Variations in Subsurface Conditions

E.1.a. Material Strata

We developed our evaluation, analyses and recommendations from a limited amount of site and subsurface information. It is not standard engineering practice to retrieve material samples from exploration locations continuously with depth. Therefore, we must infer strata boundaries and thicknesses to some extent. Strata boundaries may also be gradual transitions, and project planning should expect the strata to vary in depth, elevation and thickness, away from the exploration locations.

Variations in subsurface conditions present between exploration locations may not be revealed until performing additional exploration work, or starting construction. If future activity for this project reveals any such variations, you should notify us so that we may reevaluate our recommendations. Such variations could increase construction costs, and we recommend including a contingency to accommodate them.

E.1.b. Groundwater Levels

We made groundwater measurements under the conditions reported herein and shown on the exploration logs, and interpreted in the text of this report. Note that the observation periods were relatively short, and project planning can expect groundwater levels to fluctuate in response to rainfall, flooding, irrigation, seasonal freezing and thawing, surface drainage modifications and other seasonal and annual factors.

E.2. Continuity of Professional Responsibility

E.2.a. Plan Review

We based this report on a limited amount of information, and we made a number of assumptions to help us develop our recommendations. We recommend retaining us to review the geotechnical aspects of the designs and specifications. This review will allow us to evaluate whether we anticipated the design correctly, if any design changes affect the validity of our recommendations, and if the design and specifications correctly interpret and implement our recommendations.

E.2.b. Construction Observations and Testing

We recommend that we be retained to perform the required observations and testing during construction as part of the ongoing geotechnical evaluation. This will allow us to correlate the subsurface conditions exposed during construction with those encountered by the borings and provide professional continuity from the design phase to the construction phase. If we are not retained, it becomes the responsibility of others to validate the assumption made during the preparation of this report and to accept the construction-related geotechnical engineer-of-record responsibilities.

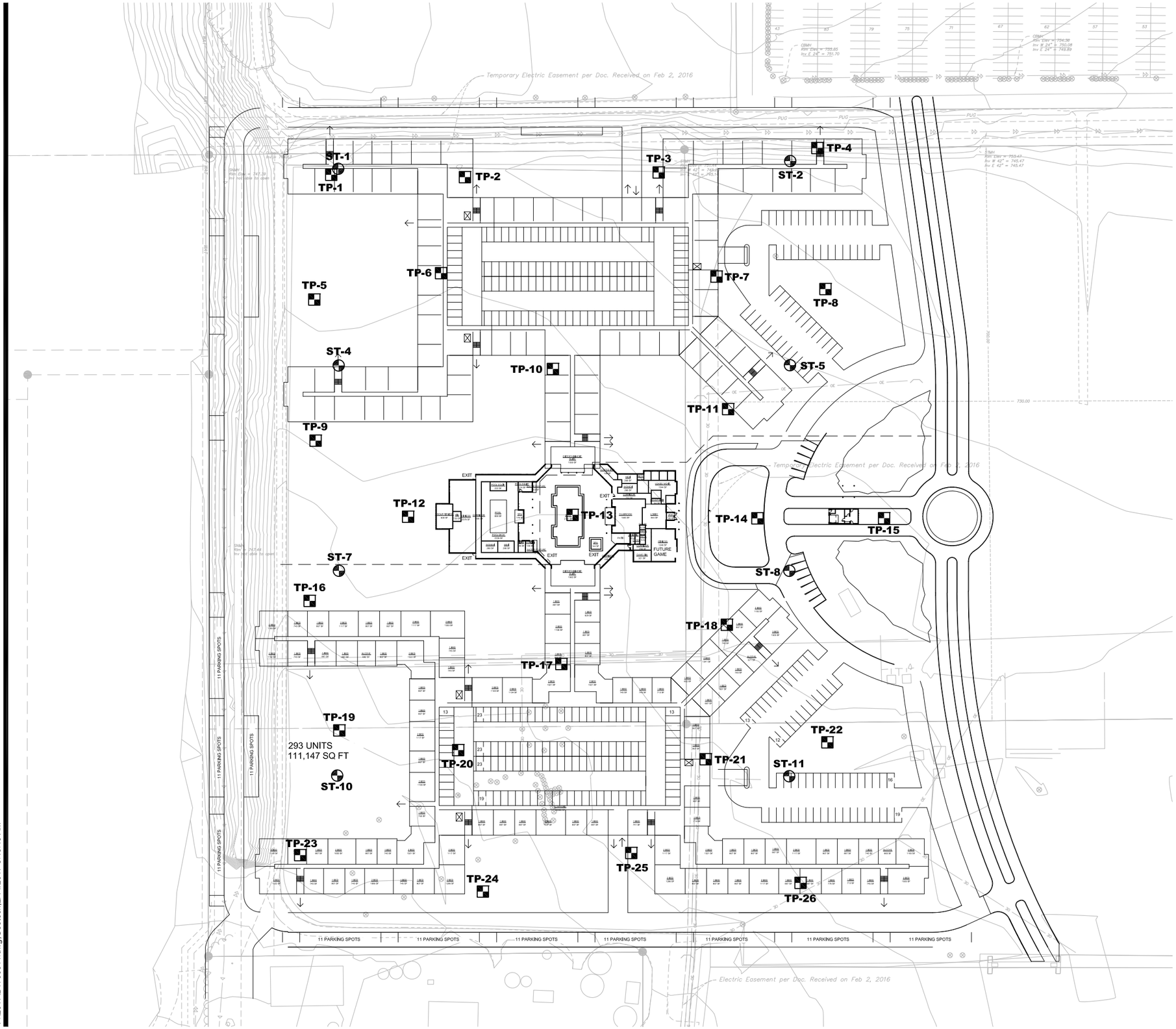
E.3. Use of Report

This report is for the exclusive use of the addressed parties. Without written approval, we assume no responsibility to other parties regarding this report. Our evaluation, analyses and recommendations may not be appropriate for other parties or projects.

E.4. Standard of Care

In performing its services, Braun Intertec used that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession currently practicing in the same locality. No warranty, express or implied, is made.

Appendix



DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

DENOTES APPROXIMATE LOCATION OF TEST PIT

60' 0 120'

SCALE: 1"= 120'

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Base Dwg Provided By:

SOIL BORING AND TEST PIT LOCATION SKETCH
GEOTECHNICAL EVALUATION
CANTERBURY APARTMENTS
1100 CANTERBURY ROAD
SHAKOPEE, MINNESOTA

Project No: B1700011

Drawing No: B1700011

Scale:	1"= 120'
Drawn By:	JAG
Date Drawn:	1/3/17
Checked By:	EJD
Last Modified:	2/14/17

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BRAUN INTERTEC

LOG OF BORING

Braun Project B1604368
PRELIMINARY GEOTECHNICAL EVALUATION
Canterbury 31 Acre Multi-Family Apartments
2419 Eagle Creek Blvd
Shakopee, Minnesota

BORING: **ST-1**

LOCATION: See attached sketch.

DRILLER: B. Kammermeier | METHOD: 3 1/4" HSA, Autohammer | DATE: **5/18/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
750.3	0.0					
		SM	SILTY SAND, fine- to medium-grained, dark brown, moist. (Topsoil)			Benchmark: Elevations were obtained using GPS and the State of Minnesota's permanent base station network.
748.3	2.0					
		ML	SILT, brown, moist. (Glacial Till)	8		
746.3	4.0					
			END OF BORING.			
			Auger met refusal at the 4-foot depth.			
			Water not observed while drilling.			
			Boring immediately backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINT\PROJECTS\AX PROJECTS\2016\04368.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:56

BRAUN INTERTEC

LOG OF BORING

Braun Project B1604368
PRELIMINARY GEOTECHNICAL EVALUATION
Canterbury 31 Acre Multi-Family Apartments
2419 Eagle Creek Blvd
Shakopee, Minnesota

BORING: **ST-2**

LOCATION: See attached sketch.

DRILLER: B. Kammermeier | METHOD: 3 1/4" HSA, Autohammer | DATE: **5/18/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
749.1	0.0					
		SC	CLAYEY SAND, black, moist. (Topsoil)			
747.1	2.0					
		SP	POORLY GRADED SAND, fine- to medium-grained, with Gravel, light brown, moist, medium dense. (Glacial Outwash)	25		
745.1	4.0					
		LS	LIMESTONE, highly weathered, tan.			
744.1	5.0					
			END OF BORING.			
			Auger met refusal at the 5-foot depth.			
			Water not observed while drilling.			
			Boring immediately backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B1604368
PRELIMINARY GEOTECHNICAL EVALUATION
Canterbury 31 Acre Multi-Family Apartments
2419 Eagle Creek Blvd
Shakopee, Minnesota

BORING: **ST-4**

LOCATION: See attached sketch.

DRILLER: B. Kammermeier | METHOD: 3 1/4" HSA, Autohammer | DATE: **5/18/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
751.3	0.0					
749.8	1.5	SM	SILTY SAND, fine- to medium-grained, black, moist. (Topsoil)			
747.8	3.5	LS	LIMESTONE, highly weathered, tan.	*		*50/4" set
			END OF BORING.			
			Auger met refusal at the 3.5-foot depth.			
			Water not observed while drilling.			
			Boring immediately backfilled.			

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LOG OF BORING

Braun Project B1604368
PRELIMINARY GEOTECHNICAL EVALUATION
Canterbury 31 Acre Multi-Family Apartments
2419 Eagle Creek Blvd
Shakopee, Minnesota

BORING: **ST-5**

LOCATION: See attached sketch.

DRILLER: B. Kammermeier | METHOD: 3 1/4" HSA, Autohammer | DATE: **5/18/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
750.1	0.0	SC	CLAYEY SAND, black, moist. (Topsoil)			
748.6	1.5	LS	LIMESTONE, highly weathered, tan.			
748.1	2.0		END OF BORING.			
			Auger met refusal at the 2-foot depth.			
			Water not observed while drilling.			
			Boring immediately backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

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LOG OF BORING

Braun Project B1604368
PRELIMINARY GEOTECHNICAL EVALUATION
Canterbury 31 Acre Multi-Family Apartments
2419 Eagle Creek Blvd
Shakopee, Minnesota

BORING: **ST-7**

LOCATION: See attached sketch.

DRILLER: B. Kammermeier | METHOD: 3 1/4" HSA, Autohammer | DATE: **5/18/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
752.9	0.0	SM	SILTY SAND, fine- to medium-grained, black, moist. (Topsoil)			
750.9	2.0	LS	LIMESTONE, highly weathered, tan.	*		*50/2" set
749.9	3.0		END OF BORING.			
			Auger met refusal at the 3-foot depth.			
			Water not observed while drilling.			
			Boring immediately backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B1604368
PRELIMINARY GEOTECHNICAL EVALUATION
Canterbury 31 Acre Multi-Family Apartments
2419 Eagle Creek Blvd
Shakopee, Minnesota

BORING: **ST-8**

LOCATION: See attached sketch.

DRILLER: B. Kammermeier | METHOD: 3 1/4" HSA, Autohammer | DATE: **5/18/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
750.5	0.0					
		SM	SILTY SAND, black, moist. (Topsoil)			
748.5	2.0					
		CL	SANDY LEAN CLAY, brown, wet, rather soft. (Glacial Till)	5		
746.5	4.0					
		SM	SILTY SAND, with Gravel, Limestone floats, light brown, moist, very dense. (Glacial Outwash)	51		
743.5	7.0					
			END OF BORING.			
			Auger met refusal at the 7-foot depth.			
			Water not observed while drilling.			
			Boring immediately backfilled.			

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LOG OF BORING

Braun Project B1604368
PRELIMINARY GEOTECHNICAL EVALUATION
Canterbury 31 Acre Multi-Family Apartments
2419 Eagle Creek Blvd
Shakopee, Minnesota

BORING: **ST-10**

LOCATION: See attached sketch.

DRILLER: B. Kammermeier | METHOD: 3 1/4" HSA, Autohammer | DATE: **5/18/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
754.9	0.0					
753.4	1.5	FILL	FILL: Silty Sand, fine- to medium-grained, black, moist. (Topsoil Fill)			
750.9	4.0	FILL	FILL: Sandy Lean Clay, dark brown, moist.	7		
747.9	7.0	CL	SANDY LEAN CLAY, brown, wet, medium. (Glacial Till)	6		
746.4	8.5	LS	LIMESTONE, highly weathered, tan.	*		*50/6" sample
			END OF BORING.			
			Auger met refusal at the 8.5-foot depth.			
			Water not observed while drilling.			
			Boring immediately backfilled.			

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LOG OF BORING

Braun Project B1604368
PRELIMINARY GEOTECHNICAL EVALUATION
Canterbury 31 Acre Multi-Family Apartments
2419 Eagle Creek Blvd
Shakopee, Minnesota

BORING: **ST-11**

LOCATION: See attached sketch.

DRILLER: B. Kammermeier | METHOD: 3 1/4" HSA, Autohammer | DATE: **5/18/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
752.6	0.0					
		FILL	FILL: Clayey Sand, black, moist. (Topsoil Fill)			
750.6	2.0					
		FILL	FILL: Sandy Lean Clay, dark brown, wet.			
748.6	4.0					
		CL	LEAN CLAY, brown, wet, medium. (Glacial Till)			
745.6	7.0					
		LS	LIMESTONE, highly weathered, tan.	*		*50/5" set
				*		*50/3" set
741.6	11.0					
			END OF BORING.			
			Auger met refusal at the 11-foot depth.			
			Water not observed while drilling.			
			Water not observed to cave-in depth of 9 feet immediately after withdrawal of auger.			
			Boring immediately backfilled.			

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BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-1**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	MC %	Tests or Notes
750.5	0.0	SM	SILTY SAND, fine- to medium-grained, slightly organic, dark brown, frozen. (Topsoil)			23	OC=5%
748.7	1.8	SC	CLAYEY SAND, brown, wet. (Glacial Till)				
747.2	3.3		TEST PIT TERMINATED AT LIMESTONE BEDROCK.				
			Water not observed while digging.				
			Test pit backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-2**

LOCATION: 30' S of staked location. See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	MC %	P200 %	Tests or Notes
750.6	0.0							
749.9	0.8	SC	CLAYEY SAND, dark brown, frozen. (Topsoil)					
		SC	LEAN CLAY, with Clay seams, Boulders and Cobbles, brown, wet. (Glacial Till)			24	71	
747.6	3.0		TEST PIT TERMINATED AT LIMESTONE BEDROCK.					
			Water not observed while digging.					
			Test pit backfilled.					

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-3**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
749.4	0.0	FILL	FILL: Silty Sand, fine- to medium-grained, dark brown, frozen. (Topsoil)			
747.4	2.0	FILL	FILL: Poorly Graded Sand with Silt, fine- to medium-grained, with Cobbles, Boulders and Gravel, brown.			
744.9	4.5		TEST PIT TERMINATED AT LIMESTONE BEDROCK. Water not observed while digging. Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-4**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
752.6	0.0					
752.1	0.5	FILL	FILL: Clayey Sand, black, frozen. (Topsoil)			
		FILL	FILL: Poorly Graded Sand with Silt, fine- to medium-grained, brown, moist.			
749.1	3.5	FILL	FILL: Silty Sand, fine- to medium-grained, dark brown, moist.			
747.1	5.5		TEST PIT TERMINATED AT LIMESTONE BEDROCK.			
			Water not observed while digging.			
			Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

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LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-5**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
750.9	0.0	SM	SILTY SAND, fine- to medium-grained, with Gravel, dark brown, frozen. (Topsoil)			
748.9	2.0		TEST PIT TERMINATED AT LIMESTONE BEDROCK.			
			Water not observed while digging.			
			Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-6**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
750.8	0.0					
749.3	1.5	SC	CLAYEY SAND, dark brown, frozen. (Topsoil)			
746.3	4.5	SM	SILTY SAND, with Limestone fragments, Cobbles and Gravel, brown, wet. (Glacial Till)			
745.3	5.5	LS	LIMESTONE, highly weathered, tan.			
			BOTTOM OF TEST PIT.			
			Limestone ripped 1 foot with backhoe.			
			Water not observed while digging.			
			Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-7**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
749.4	0.0	SM	SILTY SAND, dark brown, frozen. (Topsoil)			
747.9	1.5					
747.4	2.0	LS	LIMESTONE, highly weathered, tan.			
			BOTTOM OF TEST PIT.			
			Limestone ripped 1/2 foot with backhoe.			
			Water not observed while digging.			
			Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-8**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
749.2	0.0	SM	SILTY SAND, fine- to medium-grained, dark brown to black, frozen. (Topsoil)			
746.2	3.0	SM	SILTY SAND, fine- to medium-grained, light brown, wet. (Glacial Till)			
745.2	4.0		TEST PIT TERMINATED AT LIMESTONE BEDROCK.			
			Water not observed while digging.			
			Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

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LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-9**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
756.4	0.0					
755.1	1.3	SM	SILTY SAND, fine- to medium-grained, dark brown, frozen. (Topsoil)			
753.4	3.0	SM	SILTY SAND, fine- to medium-grained, with Cobbles and Boulders, brown, moist. (Glacial Till)			
			TEST PIT TERMINATED AT LIMESTONE BEDROCK.			
			Water not observed while digging.			
			Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

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LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-10**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	MC %	Tests or Notes
751.3	0.0						
		SC	CLAYEY SAND, dark brown, frozen. (Topsoil)				
749.8	1.5						
		ML	SANDY SILT, brown, moist. (Glacial Till)	21		70	
747.3	4.0						
			TEST PIT TERMINATED AT LIMESTONE BEDROCK.				
			Water not observed while digging.				
			Test pit backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-11**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
750.5	0.0					
749.5	1.0	SM	SILTY SAND, fine- to medium-grained, dark brown, frozen. (Topsoil)			
749.0	1.5	SM	SILTY SAND, fine- to medium-grained, brown, frozen. (Glacial Till)			
			TEST PIT TERMINATED AT LIMESTONE BEDROCK.			
			Water not observed while digging.			
			Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-12**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
757.1	0.0	SM	SILTY SAND, fine- to medium-grained, dark brown, frozen. (Topsoil)			
754.6	2.5	SM	SILTY SAND, fine- to medium-grained, brown, wet. (Glacial Till)			
753.6	3.5	LS	LIMESTONE, highly weathered, fractured, tan.			
751.1	6.0		TEST PIT TERMINATED AT LIMESTONE BEDROCK. Water not observed while digging. Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-13**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
753.1	0.0					
		SC	CLAYEY SAND, dark brown, frozen. (Topsoil)			
751.6	1.5					
751.4	1.7	LS	LIMESTONE, slightly weathered, fractured, tan.			
			BOTTOM OF TEST PIT.			
			Limestone ripped 0.2 feet with backhoe.			
			Water not observed while digging.			
			Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

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LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-14**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
751.5	0.0					
		SM	SILTY SAND, fine- to medium-grained, dark brown, frozen.			
750.2	1.3		(Topsoil)			
		SM	SILTY SAND, with Gravel, Cobbles and Boulders, brown, moist to wet. (Glacial Till)			
746.5	5.0		TEST PIT TERMINATED AT LIMESTONE BEDROCK.			
			Water not observed while digging.			
			Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-15**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	MC %	Tests or Notes
751.2	0.0	SM	SILTY SAND, fine- to medium-grained, slightly organic, dark brown, frozen. (Topsoil)			28	OC=6%
749.7	1.5	SM	SILTY SAND, fine- to medium-grained, brown, moist to wet. (Glacial Till)				
			With Gravel, Cobbles and Boulders from 7 to 10 feet.				
741.2	10.0		TEST PIT REACHED REFUSAL AT 10 FEET DUE TO BOULDERS.				
			Water not observed while digging.				
			Test pit backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-16**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
758.0	0.0					
756.5	1.5	SM	SILTY SAND, fine- to medium-grained, dark brown to black, frozen. (Topsoil)			
			TEST PIT TERMINATED AT LIMESTONE BEDROCK.			
			Water not observed while digging.			
			Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-17**

LOCATION: 20' S of staked location. See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
753.3	0.0	SC	CLAYEY SAND, dark brown, frozen to wet. (Topsoil)			
750.3	3.0		TEST PIT TERMINATED AT LIMESTONE BEDROCK.			
			Water not observed while digging.			
			Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-18**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
752.0	0.0	SM	SILTY SAND, fine- to medium-grained, dark brown, frozen. (Topsoil)			
750.0	2.0	CL	SANDY LEAN CLAY, with Cobbles, brown, wet. (Glacial Till)			
745.5	6.5		TEST PIT TERMINATED AT LIMESTONE BEDROCK. Water not observed while digging. Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-19**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
759.4	0.0					
757.9	1.5	SC	CLAYEY SAND, dark brown, frozen. (Topsoil)			
			TEST PIT TERMINATED AT LIMESTONE BEDROCK.			
			Water not observed while digging.			
			Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-20**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
759.1	0.0	SM	SILTY SAND, fine- to medium-grained, dark brown, frozen. (Topsoil)			
756.1	3.0	SM	SILTY SAND, fine- to medium-grained, brown, moist to wet. (Glacial Till)			
753.1	6.0		TEST PIT TERMINATED AT LIMESTONE BEDROCK. Water not observed while digging. Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-21**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
757.7	0.0	SC	CLAYEY SAND, dark brown to black, frozen to wet. (Topsoil)			
754.2	3.5	CL	SANDY LEAN CLAY, brown, wet. (Glacial Till)			
750.2	7.5		With Cobbles and Gravel near Limestone surface.			
			TEST PIT TERMINATED AT LIMESTONE BEDROCK.			
			Water not observed while digging.			
			Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-22**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	MC %	Tests or Notes
756.7	0.0	SC	CLAYEY SAND, slightly organic, dark brown, frozen to wet. (Topsoil)			20	OC=4%
753.7	3.0	CL	SANDY LEAN CLAY, with Cobbles, brown, wet. (Glacial Till)				
751.7	5.0		TEST PIT TERMINATED AT LIMESTONE BEDROCK. Water not observed while digging. Test pit backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-23**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	MC %	Tests or Notes
760.2	0.0	CL	SANDY LEAN CLAY, dark brown to black, frozen. (Topsoil)			14	OC=2%
756.7	3.5		With Cobbles at Limestone surface.				
			TEST PIT TERMINATED AT LIMESTONE BEDROCK.				
			Water not observed while digging.				
			Test pit backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-24**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
760.0	0.0	SM	SILTY SAND, fine- to medium-grained, dark brown, frozen. (Topsoil)			
757.0	3.0		TEST PIT TERMINATED AT LIMESTONE BEDROCK. Water not observed while digging. Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-25**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	MC %	P200 %	Tests or Notes
758.4	0.0	SC	CLAYEY SAND, dark brown, frozen. (Topsoil)					
755.9	2.5	CL	LEAN CLAY, brown, wet. (Glacial Till)			25	80	
753.9	4.5		TEST PIT TERMINATED AT LIMESTONE BEDROCK.					
			Water not observed while digging.					
			Test pit backfilled.					

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

BRAUN INTERTEC

LOG OF TEST PIT

Braun Project B1700011
GEOTECHNICAL EVALUATION
Canterbury Apartments
1100 Canterbury Road
Shakopee, Minnesota

TEST PIT: **TP-26**

LOCATION: See attached sketch.

DRILLER: MUE | METHOD: Backhoe | DATE: **1/9/17** | SCALE: **1" = 4'**

Elev. feet	Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
757.6	0.0	SM	SILTY SAND, fine- to medium-grained, dark brown, frozen to wet. (Topsoil)			
754.6	3.0	SC	CLAYEY SAND, with Boulders and Cobbles, brown, wet. (Glacial Till)			
752.6	5.0		TEST PIT TERMINATED AT LIMESTONE BEDROCK. Water not observed while digging. Test pit backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF TEST PIT N:\GINT\PROJECTS\AX PROJECTS\2017\00011-TEST PITS.GPJ BRAUN_V8_CURRENT.GDT 2/16/17 13:54

Test Pit #: 2 B1700011
Date: January 9, 2017

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Test Pit #: 3 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 4 B1700011
Date: January 9, 2017

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Test Pit #: 5 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 6 B1700011

Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 7 B1700011

Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 8 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 9 B1700011
Date: January 9, 2017

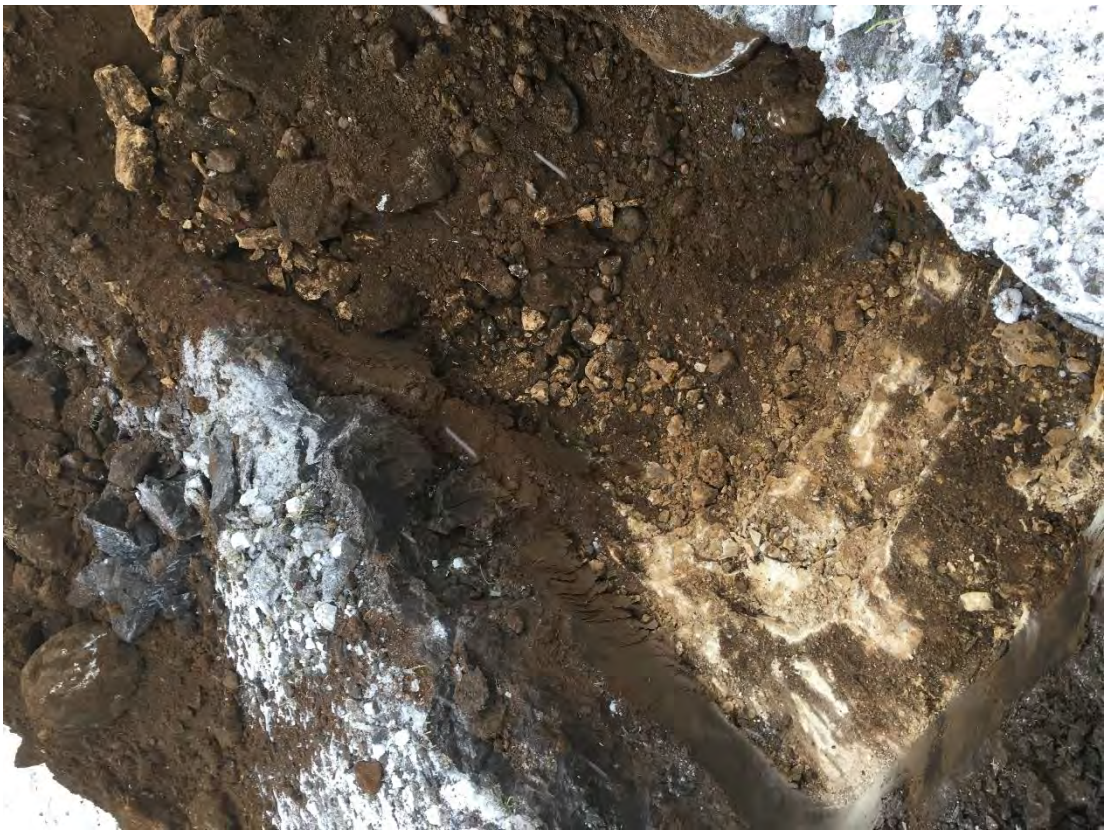
BRAUN INTERTEC

Test Pit #: 10 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 11 B1700011
Date: January 9, 2017

BRAUN INTERTEC



Test Pit #: 12 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 13 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 14 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 15 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 16 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 17 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 18 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 19 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 20 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 21 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 22 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 23 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 24 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 25 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 26 B1700011
Date: January 9, 2017

BRAUN INTERTEC

Test Pit #: 26 B1700011
Date: January 9, 2017

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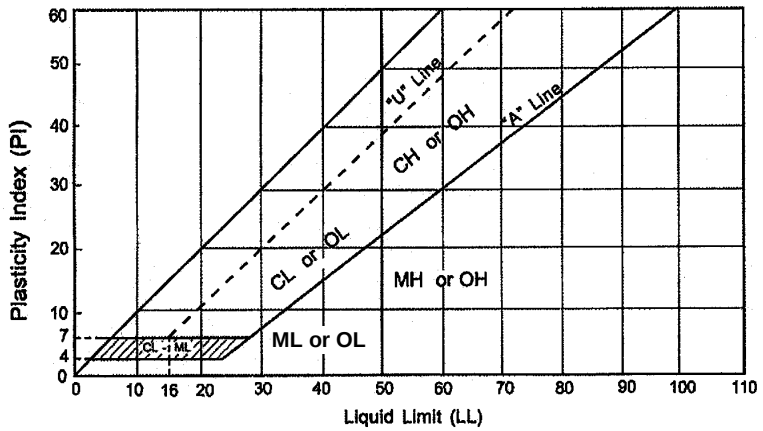
Descriptive Terminology of Soil

Standard D 2487
Classification of Soils for Engineering Purposes
(Unified Soil Classification System)

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [a]				Soils Classification	
				Group Symbol	Group Name [b]
Coarse-grained Soils more than 50% retained on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines [e]	$C_u \geq 4$ and $1 \leq C_c \leq 3$ [c]	GW	Well-graded gravel [d]
			$C_u < 4$ and/or $1 > C_c > 3$ [c]	GP	Poorly graded gravel [d]
		Gravels with Fines More than 12% fines [e]	Fines classify as ML or MH	GM	Silty gravel [d f g]
			Fines classify as CL or CH	GC	Clayey gravel [d f g]
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines [i]	$C_u \geq 6$ and $1 \leq C_c \leq 3$ [c]	SW	Well-graded sand [h]
			$C_u < 6$ and/or $1 > C_c > 3$ [c]	SP	Poorly graded sand [h]
		Sands with Fines More than 12% [i]	Fines classify as ML or MH	SM	Silty sand [f g h]
			Fines classify as CL or CH	SC	Clayey sand [f g h]
Fine-grained Soils 50% or more passed the No. 200 sieve	Silts and Clays Liquid limit less than 50	Inorganic	PI > 7 and plots on or above "A" line [j]	CL	Lean clay [k l m]
			PI < 4 or plots below "A" line [j]	ML	Silt [k l m]
		Organic	Liquid limit - oven dried / Liquid limit - not dried < 0.75	OL	Organic clay [k l m n]
				OL	Organic silt [k l m o]
	Silts and clays Liquid limit 50 or more	Inorganic	PI plots on or above "A" line	CH	Fat clay [k l m]
			PI plots below "A" line	MH	Elastic silt [k l m]
		Organic	Liquid limit - oven dried / Liquid limit - not dried < 0.75	OH	Organic clay [k l m p]
				OH	Organic silt [k l m q]
Highly Organic Soils	Primarily organic matter, dark in color and organic odor			PT	Peat

a. Based on the material passing the 3-inch (75mm) sieve.
b. If field sample contained cobbles or boulders, or both, add "with cobbles or boulders or both" to group name.
c. $C_u = D_{60}/D_{10}$ $C_c = \frac{(D30)^2}{D_{10} \times D_{60}}$
d. If soil contains ≥15% sand, add "with sand" to group name.
e. Gravels with 5 to 12% fines require dual symbols:
   GW-GM well-graded gravel with silt
   GW-GC well-graded gravel with clay
   GP-GM poorly graded gravel with silt
   GP-GC poorly graded gravel with clay
f. If fines classify as CL-ML, use dual symbol GC-GM or SC-SM.
g. If fines are organic, add "with organic fines: to group name.
h. If soil contains ≥15% gravel, add "with gravel" to group name.
i. Sand with 5 to 12% fines require dual symbols:
   SW-SM well-graded sand with silt
   SW-SC well-graded sand with clay
   SP-SM poorly graded sand with silt
   SP-SC poorly graded sand with clay
j. If Atterberg limits plot in hatched area, soil is a CL-ML, silty clay.
k. If soil contains 10 to 29% plus No. 200, add "with sand" or "with gravel" whichever is predominant.
l. If soil contains ≥ 30% plus No. 200, predominantly sand, add "sandy" to group name.
m. If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.
n. PI ≥ 4 and plots on or above "A" line.
o. PI < 4 or plots below "A" line.
p. PI plots on or above "A" lines.
q. PI plots below "A" line.



Laboratory Tests

DD	Dry density, pcf	**OC**	Organic content, %
WD	Wet density, pcg	**S**	Percent of saturation, %
MC	Natural moisture content, %	**SG**	Specific gravity
LL	Liquid limit, %	**C**	Cohesion, psf
PL	Plastic limits, %	**Ø**	Angle of internal friction
PI	Plasticity index, %	**qu**	Unconfined compressive strength, psf
P200	% passing 200 sieve	**qp**	Pocket penetrometer strength, tsf

Particle Size Identification

Boulders..... over 12"
Cobbles ..... 3" to 12"
Gravel
  Coarse ..... 3/4" to 3"
  Fine..... No. 4 to 3/4"
Sand
  Coarse ..... No. 4 to No. 10
  Medium ..... No. 10 to No. 40
  Fine..... No. 40 to No. 200
Silt ..... <No. 200, PI< 4 or below "A" line
Clay ..... <No. 200, PI ≥ 4 and on or about "A" line

Relative Density of Cohesionless Soils

Very Loose..... 0 to 4 BPF
Loose..... 5 to 10 BPF
Medium dense ..... 11 to 30 PPF
Dense ..... 31 to 50 BPF
Very dense..... over 50 BPF

Consistency of Cohesive Soils

Very soft..... 0 to 1 BPF
Soft ..... 2 to 3 BPF
Rather soft ..... 4 to 5 BPF
Medium..... 6 to 8 BPF
Rather stiff ..... 9 to 12 BPF
Stiff ..... 13 to 16 BPF
Very stiff..... 17 to 30 BPF
Hard..... over 30 BPF

Drilling Notes

Standard penetration test borings were advanced by 3 1/4" or 6 1/4" ID hollow-stem augers, unless noted otherwise. Jetting water was used to clean out auger prior to sampling only where indicated on logs. All samples were taken with the standard 2" OD split-tube samples, except where noted.

Power auger borings were advanced by 4" or 6" diameter continuous flight, solid-stern augers. Soil classifications and strata depths were inferred from disturbed samples augered to the surface, and are therefore, somewhat approximate.

Hand auger borings were advanced manually with a 1 1/2" or 3 1/4" diameter auger and were limited to the depth from which the auger could be manually withdrawn.

BPF: Numbers indicate blows per foot recorded in standard penetration test, also known as "N" value. The sampler was set 6" into undisturbed soil below the hollow-stem auger. Driving resistances were then counted for second and third 6" increments, and added to get BPF. Where they differed significantly, they are reported in the following form: 2/12 for the second and third 6" increments, respectively.

WH: WH indicates the sampler penetrated soil under weight of hammer and rods alone; driving not required.

WR: WR indicates the sampler penetrated soil under weight of rods alone; hammer weight, and driving not required.

TW: TW indicates thin-walled (undisturbed) tube sample.

Note: All tests were run in general accordance with applicable ASTM standards.

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Appendix D

Phase I Report

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WENCK File #3237-0015
March 10, 2017

Phase I Environmental Site Assessment

Canterbury Commons
NE ¼ of Section 8, and SW ¼, SE ¼ of Section 5
T115N, R22W
Shakopee, Minnesota

Prepared for:

Doran Development, LLC 7803

7803 Glenroy Road
Suite 200
Minneapolis, MN 55439

WENCK ASSOCIATES

Responsive partner.
Exceptional outcomes.

Prepared by:

WENCK Associates, Inc.
1800 Pioneer Creek Center
Maple Plain, MN 55359
Phone: 763-479-4200
Fax: 763-479-4242

Table of Contents

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1.0 Summary

Wenck Associates, Inc. (Wenck) was authorized by Doran Development, LLC 7803 (Doran) to conduct this Phase I Environmental Site Assessment (ESA) of the Canterbury Commons property located at the NE ¼ of Section 8, and SW ¼, SE ¼ of Section 5, T115N, R22W, Shakopee, Scott County, Minnesota (the Subject Property). The Subject Property consists of portions of six adjoining parcels totaling approximately 65-acres of vacant land. Access to the Subject Property is from Shenandoah Drive to the north and Eagle Creek Boulevard to the south. The Subject Property location is depicted in Figure 1. A Site Detail Map of the Subject Property is included as Figure 2.

This was conducted in accordance with the American Society for Testing and Materials (ASTM) Phase I Environmental Site Assessment Process, Designation E-1527-13 (ASTM Phase I Standard) and satisfies standards and practices set forth in 40 CFR Part 312 – Standards for Conducting All Appropriate Inquiry (AAI Rule) for the purposes of meeting the all appropriate inquiries provisions necessary to qualify for certain landowner liability protections under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601(35)(B).

Wenck understands that Doran is considering purchasing the Subject Property. The conclusions contained in this report have been made to assist Doran in evaluating environmental conditions at the present time at the Subject Property.

This ESA has identified no evidence of recognized environmental conditions (RECs), controlled recognized environmental conditions (CRECs), and historical recognized environmental conditions (HRECs) in connection with the Subject Property.

2.0 Introduction

2.1 PURPOSE

Wenck Associates, Inc. (Wenck) was authorized by Doran Development, LLC 7803 (Doran) to conduct this Phase I Environmental Site Assessment (ESA) of the Canterbury Commons property located at the NE ¼ of Section 8, and SW ¼, SE ¼ of Section 5, T115N, R22W, Shakopee, Scott County, Minnesota (the Subject Property). The Subject Property consists of portions of six adjoining parcels totaling approximately 65-acres of vacant land. Access to the Subject Property is from Shenandoah Drive to the north and Eagle Creek Boulevard to the south. The Subject Property location is depicted in Figure 1. A Site Detail Map of the Subject Property is included as Figure 2.

Wenck understands that Doran is considering purchasing the Subject Property. The conclusions contained in this report have been made to assist Doran in evaluating environmental conditions at the present time at the Subject Property. In addition, the report is intended to satisfy the requirements of "all appropriate inquiry… consistent with good commercial or customary practice" referenced in the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601(35)(B).

2.2 SCOPE

This ESA was prepared in accordance with the ASTM Phase I Standard and AAI Rule to identify, to the extent feasible and in accordance with the processes described herein; recognized environmental conditions, controlled recognized environmental conditions, and historical recognized environmental conditions in connection with the Subject Property.

As defined in ASTM E 1527-13, the term recognized environmental condition (REC) means "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to a release to the environmental; (2) under conditions of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

As defined in ASTM E1527-13, the term controlled recognized environmental condition (CREC) means "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls."

As defined in ASTM E1527-13, the term historical recognized environmental condition (HREC) means "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls."

A summary of the general scope of work for this project is described in the following tasks:

- Task I. Records Retrieval and Review of Records: Wenck obtained publicly available, practically reviewable and reasonably ascertainable federal, state, county, and city information about the Subject Property and other properties within minimum

established search distances of the Subject Property. These sources were searched for any information about RECs, CRECs, or HRECs or business-related environmental risks relative to the Subject Property. This search included a review of Superfund sites; waste treatment, storage, and disposal facilities regulated under RCRA; spills or discharges of hazardous substances, toxic materials, or petroleum products; and known or recorded landfills; and/or well databases.

- Task II. Site Reconnaissance: Wenck visually inspected the Subject Property to evaluate the Subject Property for any RECs, CRECs, HRECs and business-related environmental risks. The structures and grounds of the Subject Property were observed for filling, subsidence, unusual land or surface forms, colorations, odors, indications of any dumping, and evidence of suspect environmental features on the Subject Property such as tanks, drains, drywells, etc. Observations pertaining to adjacent property use were also recorded where such observations pertained to RECs, CRECs, or HRECs or business-related environmental risks relative to the Subject Property.

- Task III. Interviews of People with Knowledge of the Subject Property: Wenck interviewed people with knowledge of the history of the Subject Property and of the surrounding properties. Interviews were completed in order to obtain information pertaining to RECs, CRECs, or HRECs relative to the Subject Property. Interviewees included the Subject Property owner(s) and occupant(s), as well as local government officials.

  Data gathered in the course of performing the above three tasks was used in concert to determine if information from one source indicated the need for additional information from another source.

- Task IV. Reporting: Wenck completed this Phase I ESA by combining the information retrieved through data searches with the observations that were made during the Subject Property reconnaissance and interviews. Photographs were taken to document the overall status and current use of the Subject Property and specific areas of concern.

Any deviations from the scope described in the ASTM Phase I Standard are identified in Section 2.3.

2.3 DEVIATIONS

No intentional deviations from the ASTM Phase I Standard were made in preparing this report.

2.4 LIMITATIONS AND EXCEPTIONS

The results of this study, performed by Wenck, are based on the scope of work defined in Section 2.2, subject to any project-specific limitations or project-specific additional non-scope considerations described herein.

As is the case with any investigation of finite scope, this review is intended to reduce, but cannot eliminate, the uncertainty regarding the potential for RECs, CRECs, or HRECs in connection with the Subject Property. Therefore, the possibility of the presence of some localized substances that may be classified as hazardous cannot be ruled out completely.

However, it is Wenck's opinion that the conditions observed at the Subject Property are representative of existing conditions at the time of the site reconnaissance.

2.5 SIGNIFICANT ASSUMPTIONS

Wenck assumes that Doran has provided accurate information that will assist Wenck in determining appropriate inquiry, including but not limited to actual knowledge, previously prepared reports, environmental cleanup liens, and title review information. In addition, Wenck assumes, for the purposes of the site reconnaissance, adequate information has been provided to accurately establish the physical boundaries of the real property being evaluated.

2.6 SPECIAL TERMS AND CONDITIONS

The purpose of this report is to aid in the environmental assessment of the Subject Property and not to evaluate the structural condition of buildings or other features of the Subject Property.

Wenck has performed its work in a manner consistent with the care and skill ordinarily exercised by members of the environmental profession. The conclusions contained in this report represent our professional opinions. These opinions were arrived at in accordance with currently accepted engineering practices at this time and location. Wenck does not offer any form of warranty or guarantee that the Subject Property contains no hazardous substances, pollutants or contaminants.

Wenck assumes no responsibility for the accuracy of information that was obtained from other sources, including, without limitation, regulatory and government agencies, persons knowledgeable about the Subject Property, persons knowledgeable about adjacent properties, and vendors of public practice.

2.7 USER RELIANCE

This report has been prepared solely for the information and use of Doran Development, LLC 7803. Others wishing to rely on the findings of this report, not having a contractual relationship with Wenck, do so without permission and at their own risk. Our professional recommendations made to the addressee(s) are exclusive to that party's disclosed intended or proposed consideration with respect to the Subject Property at the present time.

3.0 Site Description

The Subject Property is located in a mixed agricultural, residential, and commercial area in the City of Shakopee, Minnesota.

Site Address/Location	Address: 1100 Canterbury Road		City: Shakopee
	County: Scott		State: Minnesota
	Township:	Range:	Section:
	115 North	22 West	Portions of 8 and 5
Property Information	Size: Approximately 65 acres Property Identification Number: Portions of: 272450010, 27450050, 274500100, 274500090, 274500040 and 274500010		
Improvements	The Subject Property consists of approximately 65-acres of vacant land with vegetative cover. The southern portion of the Subject Property is used during the fall by Sever's Corn Maze and Fall Festival. Small wooden carnival structures consisting of food and beverage sale booths, carnival games and performance stages remain on the Subject Property throughout the year. The northern portion of the Subject Property contains gravel parking and drive areas that are used occasionally during concerts and other events at Canterbury Park.		
Use of the Property	Current Use: The southern portion of the Subject Property is used during the fall months as a corn maze and fall festival. Small carnival structures associated with the fall festival remain at the Subject Property. The southeast portion of the Subject Property is currently being used as a staging area for the adjacent power plant construction. According to the Subject Property owner the area consists of a gravel parking lot and is used to stage equipment and a job trailer until construction activities are complete. Past Use: According to reviewed sources of information, the Subject Property was undeveloped land in agricultural use from at least 1940 until approximately 1985 when the adjacent Canterbury Park was constructed. Portions of the Subject Property have been used as overflow parking, corn maze and fall festival since approximately 1985.		
Ownership and Operation of the Property	Current Ownership & Operation: The Subject Property is currently owned by Canterbury Park Holding Corporation.		

The Subject Property location is depicted in Figure 1. A Site Detail Map showing the Subject Property is provided in Figure 2.

3.1 CURRENT USE OF ADJOINING PROPERTIES

The following land uses were noted on adjoining properties:

Direction	Description
North	Gravel parking/drive areas followed by Barenscheer Boulevard and residential development
South	Eagle Creek Boulevard followed by residential development
East	Canterbury Park, 12th Avenue East, Vierling Drive followed by a power plant currently under construction
West	Portions of the Hauer Farm and residential development

3.2 PHYSICAL SETTING

3.2.1 Topography

The Subject Property gently slopes to the south. The majority of the Subject Property is at an approximate elevation of 750 feet above mean sea level. Site surface drainage is to low-lying areas, a stormwater pond along the northwest property boundary and a stormwater culvert adjacent to the southwest corner of the Subject Property. Historic development included grading or filling of the Subject Property to improve the location for construction and drainage.

3.2.2 Geology

Published references describe the surficial geology at the Subject Property as alluvial terrace deposits comprised of sand and gravelly sand (University of Minnesota, 2006).

Bedrock in the vicinity of the Subject Property consists predominately of the Prairie Du Chien group comprised of fine grained dolostone, sandstone and shale and is anticipated to be located approximately 50 feet below ground surface (University of Minnesota, 2006).

3.2.3 Hydrogeology

The general direction of regional groundwater flow in the area of the Subject Property is presumed to be to the north towards to Minnesota River (University of Minnesota, 2006). Local conditions may vary due to surface water features, perched groundwater conditions or artificially created drainage systems. Depth to regional groundwater is anticipated to be less than 50 feet bgs (University of Minnesota, 2006).

4.0 User Provided Information

4.1 TITLE RECORD INFORMATION

A title commitment record for the Subject Property was not provided to Wenck during preparation of this Phase I ESA, and a title search was not within the scope of this ESA.

4.2 USER QUESTIONNAIRE

User provided information includes a copy of the ASTM User Questionnaire completed by Mr. Tony Kuechle with Doran. The following sections include the information obtained from the completed User Questionnaire, which is included in Appendix A.

4.2.1 Environmental Liens or Activity and Use Limitations

No independent review of environmental liens was undertaken by Wenck as a part of this scope of work. No activity and use limitations were disclosed to Wenck during preparation of this ESA.

4.2.2 Specialized Knowledge

Doran reported no specialized knowledge of the Subject Property.

4.2.3 Commonly Known or Reasonably Ascertainable Information

Commonly known or reasonably ascertainable environmental information was found relevant to this study including the information provided in Section 6.0 and Section 7.0.

4.2.4 Valuation Reduction for Environmental Reasons

No valuation reduction for environmental reasons was disclosed at the outset of this study.

4.3 OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION

The Subject Property is currently owned by Canterbury Park Holding Corporation.

4.4 REASON FOR PERFORMING PHASE I ESA

This Phase I ESA is being performed as a component of due diligence activities and to determine whether RECs, CRECs, and HRECs affect the Subject Property.

5.0 Records Review

5.1 STANDARD ENVIRONMENTAL RECORD SOURCES

5.1.1 Subject Property

The Subject Property was not identified on the regulatory databases in the GeoSearch Radius Report.

5.1.2 Surrounding Properties

Additional mapped sites of regulatory interest identified within the search radii defined by the ASTM Phase I Standard, as identified in the GeoSearch Radius Report, include the following:

Number of Sites	Regulatory Database	Comments
1	Resource Conservation and Recovery Act - Generator Facilities (RCRAGR05) sites	Listings are not considered to represent RECs for the Subject Property based on type of database, location relative to the Subject Property, violations status, and/or regulatory status.
1	State Assessment Sites (SAS)	The SAS database lists sites that have been investigated for contamination by the MPCA, and if contamination is found, they are referred to a cleanup program. Based on the type of database, these listings are not considered a threat to soil, groundwater and/or soil vapor conditions at the Subject Property, and, therefore, are not considered to represent RECs, CRECs or HRECs for the Subject Property.
5	Registered Storage Tank (UAST) sites	UAST sites are not necessarily indicative of a release or a material threat of release, therefore, these listings are not considered a threat to soil, groundwater and/or soil vapor conditions at the Subject Property, and, therefore, are not considered to represent RECs for the Subject Property. Registered Leaking UAST sites are discussed below.
2	Registered Leaking Storage Tank (LUAST) sites	The Certainteed Corporation site is located approximately ½-mile north of the Subject Property in a down-gradient location with respect to groundwater flow direction and is not considered a REC for the Subject Property based on distance and location.
1	Petroleum Brownfields Program (PBF) site	This listing is for the Hauer Farm site located adjacent to the southwest of the Subject Property. According to the Minnesota Pollution Control Agency (MPCA) What's In My Neighborhood (WIMN) online

Number of Sites	Regulatory Database	Comments
		database the site was enrolled in the PB program under ID# 4951 in 2015 following a non-tank related petroleum release. Groundwater and off-site contamination was not reported. A Phase I dated April 2015; Phase II dated July 2015 and Excavation Report dated December 2015 were submitted to the MPCA for review and on January 21, 2016 the MPCA Petroleum Brownfields department granted PB4951 regulatory closure. Wenck requested to review the MPCA files regarding PB4951. At this time the request is still being processed by the MPCA. However, based on the lack of groundwater and off-site contamination reported and the sites regulatory status the Hauer Farm site is not anticipated to represent a REC for the Subject Property.
1	Concentrated Animal Feeding Operations (CAFO) sites	This listing is for the Canterbury park site located approximately 0.23 miles north of the Subject Property in a down-gradient location with respect to groundwater flow direction and is not considered to represent a REC for the Subject Property based on distance and location.
20	MPCA Remediation Sites (REMSITES)	The adjacent Hauer Farm site is discussed in the PBF listing of this table. The remaining REMSITES sites identified are located in either a side-gradient or down-gradient location with respect anticipated groundwater flow direction. Based on their location and the information provided in the GeoSearch Radius Report, these listings are not considered a threat to soil, groundwater and/or soil vapor conditions at the Subject Property, and, therefore, are not considered to represent RECs for the Subject Property.
2	Superfund Site Information Listing (SF) site	The Hennen Cleaners site is located 0.91-mile to the northwest and the Anchor Glass container site is located 0.97-mile to the northeast. Both sites are located in down-gradient locations with respect to groundwater flow direction and are not considered RECs for the Subject Property based on distance and location.

The two unmapped sites identified in the GeoSearch Radius Report are identified as the Wheel Lumber UAST listings. Unmapped sites are those where address information is insufficient to allow the sites to be accurately mapped by GeoSearch. Wenck was able to ascertain the approximate location of the Wheeler Lumber site which is located approximately 3-miles northwest of the Subject Property. Based on location and database listings, these listings are not considered a threat to soil, groundwater and/or soil vapor

conditions at the Subject Property, and, therefore, are not considered to represent RECs for the Subject Property.

Wenck did not review State/County/City files for these database listings because sufficient information was available from other sources to determine the potential for RECs, CRECs, and/or HRECs relative to the Subject Property.

The GeoSearch Radius Report is included as Appendix B.

5.2 ADDITIONAL RECORD SOURCES

Additional record sources may be consulted when, in the judgment of the Environmental Professional, such additional records are reasonably ascertainable, sufficiently useful, accurate and complete, and are generally obtained pursuant to good commercial and customary practice. Such records may include local brownfield lists, or other local lists similar to those federal, state and tribal lists. Such sources may include local health or environmental departments, fire departments, planning departments, building permit or inspection departments, and other local pollution, water quality or utility companies.

5.2.1 Scott County Tax Information

Scott County tax information was obtained and reviewed from the Scott County tax assessor's website. Tax records provide publicly available information about the Subject Property. The tax records indicate the Subject Property is comprised of multiple adjoining parcels totaling approximately 65-acres. The tax records did not reveal any additional information with respect to the environmental condition of the Subject Property.

The Scott County tax information is included as Appendix C.

5.2.2 City of Shakopee Building Permits

Wenck reviewed the City of Shakopee online permits for the Subject Property and surrounding adjacent properties. The online records pertain to permits regarding the annual fall festival and corn maze, various concerts and entertainment events. No records regarding permanent structures, hazardous waste storage, and/or storage tanks at the Subject Property.

5.3 HISTORICAL USE INFORMATION

5.3.1 Aerial Photographs

Aerial photographs were reviewed from 1940, 1947, 1951, 1957, 1964, 1966, 1970, 1980, 1984, 1991, 1997, 2000, 2003, 2008, 2013 and 2015. The aerial photographs are presented in Appendix D.

Year	Description
1940-1984	In 1940 through 1980 aerial photographs the Subject Property appears to be vacant agricultural cropland. Surrounding adjacent sites appear to consist of a vacant agricultural land to the

	north, east and west; an east-west orientated road (currently Eagle Creek Boulevard followed by agricultural land to the south. Access to the adjacent farmsteads is via Eagle Creek Boulevard. An additional farmstead is apparent to the southwest on the 1947 and all subsequent photographs. The farmsteads appear to expand in subsequent photographs and additional structures and equipment is apparent.
1991	The majority of the Subject Property remains agricultural land. The northern portion is partially occupied by a stormwater pond, parking lot and gravel access road from the adjacent Canterbury Park to the east. Surrounding, adjacent sites consist of a parking lot followed by an east-west orientated road to the north; Eagle Creek Boulevard followed by residential development to the south; the farmstead to the southwest contains numerous structures and large equipment storage; Canterbury Park is apparent to the east; and a stormwater culvert followed by agricultural land is apparent to the west.
1997-2015	The majority of the Subject Property remains agricultural land. The corn maze and several associated structures and vehicle parking apparent on the southern portion of the Subject Property on the 2003 through 2015 photographs. Surrounding, adjacent sites appear to be in similar configurations as previous photographs with increasing residential development to the south and west.

5.3.2 City Directories

The Subject Property currently does not have an address. City directories were researched for the properties surrounding the Subject Property along Eagle Creek Boulevard. Directories for Eagle Creek Boulevard were available for the years 1982-83, 1987-88, 1992-93, 1997-98, 2002, 2007 and 2012. The city directories are included as Appendix E.

Listings along Eagle Creek Boulevard consisted primarily of residential listings. The adjacent Hauer Farm is listed at 2449 Eagle Creek Boulevard on the 2007 directory. Canterbury Road is listed on the 2002 directory and Vierling Drive is listed on the 2012 directory.

5.3.3 Historical Maps

The Minneapolis, Minnesota USGS 15-minute series topographic maps dated 1896, 1901 and 1954 and the Eden Prairie, Minnesota USGS 7.5-minute series topographic maps dated 1954, 1967, 1972, 1980, 1993 and 2013 show the area of the Subject Property.

There are no structures or other items shown on the Subject Property on any of the topographic maps. Eagle Creek Boulevard is depicted adjacent to the south on all the maps. The structures associated with the farmstead to the southwest are depicted on the 1967 through 1993 maps. On the 1993 topographic map the structures associated with Canterbury Park are shown to the east and the area south of Eagle Creek Boulevard is shaded pink indicating dense development.

Additionally, real estate atlases for the year 1855, 1898 and 1944 were reviewed. The atlases identified the property owners in sections 5 and 8. Eagle Creek Boulevard is shown on the 1944 map and a structure is depicted adjacent to the southwest of the Subject Property on the 1944 map.

The historical maps are included as Appendix F.

5.3.4 Fire Insurance Maps

A search was conducted to determine if fire insurance maps were available for the Subject Property. Fire insurance maps were created for insurance underwriters and often contain information regarding the uses of individual structures and the locations of fuel and/or chemical storage tanks that may have been on a particular property.

According to Historical Information Gatherers, Inc. (HIG), fire insurance map coverage is not available in the research materials searched for the Subject Property.

6.0 Subject Property

6.1 SUBJECT PROPERTY OBSERVATIONS

Ms. Kelly Jaworski of Wenck conducted a site reconnaissance on February 21, 2017. Ms. Jaworski was unaccompanied during the site reconnaissance. Wenck staff visually observed the Subject Property to identify current land use, obtain evidence of past uses, and to identify surface characteristics of the Subject Property for the presence of RECs, CRECs, and HRECs. Subject Property photographs are included in Appendix G.

The site reconnaissance consisted of visually observing the exterior portions of the Subject Property. Wenck staff observed (from the Subject Property boundaries) the adjoining properties for evidence of RECs, CRECs, and HRECs, and for indications of past and current land use.

As noted in Section 3.1, the Subject Property consists of approximately 65-acres of vacant land with vegetative cover. The southern portion of the Subject Property is used during the fall by Sever's Corn Maze and Fall Festival. Small wooden carnival structures consisting of food and beverage sale booths, carnival games and performance stages remain on the Subject Property throughout the year. The northern portion of the Subject Property contains gravel parking and drive areas that are used occasionally during concerts and other events at Canterbury Park. The southeast portion of the Subject Property is currently being used as a staging area for the adjacent power plant construction. According to the Subject Property owner the area consists of a gravel parking lot and is used to stage equipment and a job trailer until construction activities are complete.

The Subject Property is located in a mixed agricultural, residential, and commercial area in Shakopee and is bound to the north by Barenscheer Boulevard followed by residential development; to the south by Eagle Creek Boulevard followed by residential development; to the east by Canterbury Park, 12th Avenue East, Vierling Drive and a power plant under construction; west by Hauer Farm and residential development.

6.1.1 Solid and Hazardous Waste Management

The Subject Property is vacant; therefore, no waste is currently being generated.

6.1.2 Aboveground and Underground Storage Tanks (ASTs/USTs)

Wenck observed no evidence of existing ASTs/USTs at the Subject Property. No evidence of previously existing ASTs/USTs was identified in the review of the GeoSearch™ Radius Map Report or the MPCA's WIMN database.

6.1.3 Exterior Surface Observations

Wenck observed evidence of surficial debris on the northern portion of the Subject Property. The surficial debris consisted of a gravel pile with some intermixed building demolition debris (concrete and wood). A 55-gallon drum was observed on the eastern edge of the corn maze area. The drum had multiple holes and did not appear to contain liquid, additionally staining, and/or odors were not observed in the vicinity of the drum. According

to Mr. Erickson, the Subject Property owner representative, the drum was likely a prop related to the annual fall festival that takes place at the Subject Property.

6.1.4 Pits, Sumps, Oil-Water Separators, and Floor Drains

The Subject Property is vacant; therefore, Wenck did not observe any pits, sumps, oil-water separators, or floor drains on the Subject Property at the time of the site reconnaissance.

6.1.5 Wastewater and Stormwater Discharge Systems

No wastewater is currently generated at the Subject Property. Stormwater drains through infiltration.

6.1.6 Wells, Drywells, and Lagoons

Wenck did not observe the presence of wells, drywells, or lagoons at the time of the site reconnaissance. Additionally, the Minnesota Department of Health (MDH) County Well Index (CWI) showed no wells listed for the Subject Property.

6.1.7 Polychlorinated Biphenyls (PCBs) and Oil-Containing Equipment

Pole mounted transformers were observed along Eagle Creek Boulevard.

7.0 Interviews

7.1 INTERVIEW WITH SUBJECT PROPERTY OWNER REPRESENTATIVE

Date of Interview:	March 7, 2017
Name:	Mr. Mark Erickson
Affiliation:	CEO, Canterbury Park Holding Corporation
Year Familiar with Subject Property:	Over 15 years
Telephone Number:	952-496-6429

Wenck interviewed Mr. Mark Erickson regarding the Subject Property. Mr. Erickson indicated that the southern portion of the Subject Property was acquired from the Valley Green Farm approximately 15 years ago, and the northern portion of the Subject Property was acquired from the Hauer Farm approximately 10 years ago. Mr. Erickson indicated the Subject Property has predominately used as agricultural land he was unaware of any previous structures at the Subject Property. Mr. Erickson informed Wenck that the southeast portion of the Subject Property is currently being used as a staging area for the adjacent power plant construction, across Vierling Drive. According to Mr. Erickson the area is used to stage equipment and a job trailer related to construction activities.

Mr. Erickson indicated he was unaware of any hazardous waste use or storage, dumping, storage tanks or environmental concerns for the Subject Property. Mr. Erickson indicated the discarded drum observed during the site reconnaissance was likely a prop from the annual fall festival and was not used for storage purposes.

7.2 INTERVIEW WITH FIRE DEPARTMENT

Date of Interview:	March 6, 2017
Name:	Mr. Tom Pitschneider
Affiliation:	Shakopee Fire Marshal
Telephone Number:	952-233-9575

Wenck interviewed Mr. Tom Pitschneider regarding the Subject Property. Mr. Pitschneider indicated he was unaware of any hazardous waste use or storage, dumping, storage tanks or environmental concerns for the Subject Property. According to Mr. Pitschneider the adjacent farmstead to the west has several small above ground storage tanks on-site; however, he was unaware of any records related spills. Mr. Pitschneider checked aerial photographs depicting the Subject Property and surrounding area back to 1980 and indicated the Subject Property was agricultural land until approximately 1985 when Canterbury Park was developed.

According to Mr. Pitschneider the adjacent parcel to the east is being redeveloped as a distributive power generation plant. The facility operates 5 turbine engine driven generators and can produce about 45 Mw of power. According to Mr. Pitschneider the primary fuel source for the power plant is natural gas delivered by pipeline and the facility also stores 8,800 gallons of motor oil, 250,000 gallons of a water/glycol blend and by July there will be 88,000 gallons of liquefied natural gas stored on-site.

8.0 Evaluation

8.1 DATA GAPS

Historical information was reviewed back to 1855. Data gaps greater than five years exist from prior to 1855, from 1855 to 1896 and from 1901 to 1940.

The interviews, historical maps, city directories, aerial photographs, fire insurance maps and previous environmental reports provide generally good corroborating information that allows an understanding of historical Subject Property use. A research summary is included as Appendix H.

Wenck considers the evaluation of the presence of recognized environmental conditions, controlled recognized environmental conditions, and historical recognized environmental conditions to be complete, based on the lack of identified changes in land use during the periods affected by any data gaps of more than five years. Therefore, we do not recommend additional investigation relative to the resolution of those data gaps, as we do not believe it would materially affect our conclusion.

8.2 IDENTIFIED FINDINGS

Wenck was authorized by Doran to conduct this Phase I Environmental Site Assessment (ESA) of the Canterbury Commons property located at the NE ¼ of Section 8, and SW ¼, SE ¼ of Section 5, T115N, R22W, Shakopee, Scott County, Minnesota (the Subject Property). The Subject Property consists of portions of six adjoining parcels totaling approximately 65-acres of vacant land. Access to the Subject Property is from Shenandoah Drive to the north and Eagle Creek Boulevard to the south.

The Subject Property consists of approximately 65-acres of vacant land with vegetative cover. The southern portion of the Subject Property is used during the fall by Sever's Corn Maze and Fall Festival. Small wooden carnival structures consisting of food and beverage sale booths, carnival games and performance stages remain on the Subject Property throughout the year. The northern portion of the Subject Property contains gravel parking and drive areas that are used occasionally during concerts and other events at Canterbury Park. The southeast portion of the Subject Property is currently being used as a staging area for the adjacent power plant construction. According to the Subject Property owner the area consists of a gravel parking lot and is used to stage equipment and a job trailer until construction activities are complete.

Minor amounts of surficial debris including cinder blocks, wood and a 55-gallon drum may require removal and proper disposal of the debris if the site is redeveloped. However, no evidence of potentially hazardous materials or petroleum products was observed among the debris piles.

The Subject Property is located in a mixed agricultural and residential area in Shakopee and is bound to the north by Barenscheer Boulevard followed by residential development; to the south by Eagle Creek Boulevard followed by residential development; to the east by Canterbury Park, 12th Avenue East, Vierling Drive and a power plant under construction; west by Hauer Farm and residential development.

According to reviewed sources of information, the Subject Property was undeveloped land in agricultural use from at least 1940 until approximately 1985 when the adjacent Canterbury Park was constructed. Portions of the Subject Property have been used as overflow parking, corn maze and fall festival since approximately 1985.

The GeoSearch Radius Report did not identify listings for the Subject Property. Adjacent site listings are not considered a threat to the soil, groundwater or soil vapor at the Subject Property based on the type of listings and regulatory status.

8.3 OPINIONS

We have reviewed the above findings and have come to the following opinions:

- The historical status of the Subject Property as agricultural or vacant land from at least 1940 through the present is not considered to represent a REC, HREC, or CREC, because there is no evidence of a release or material threat of a release of petroleum products or potentially hazardous substances as a result of its historical agricultural use.
- The use of Subject Property as a gravel parking lot, corn maze and fall festival from 1985 to the present is not considered to represent a REC, HREC, or CREC, because there is no evidence of a release or material threat of a release of petroleum products or potentially hazardous substances as a result of its residential use.
- Mapped sites of regulatory interest revealed within the GeoSearch Radius Report are not considered RECs, HRECs, or CRECs. Based on the review of the revealed sites of regulatory interest, including unmapped site listings revealed within search radii defined by the Practice, we identified no material threat of release to the Subject Property from adjacent or upgradient properties.
- The surficial debris observed at the Subject Property appears to represent a *de minimus* condition that may require the removal and proper disposal of the debris if the site is redeveloped.

8.4 CONCLUSIONS

Wenck performed a Phase I ESA in conformance with the scope and limitations of the ASTM Phase I Standard and in accordance with the AAI Rule (40 CFR Part 312) of the property and improvements of the at the NE ¼ of Section 8, and SW ¼, SE ¼ of Section 5, T115N, R22W, Shakopee, Scott County, Minnesota. Any exceptions to, or deletions from, the ASTM Phase I Standard are described in Section 2.3 and Section 2.4 of this report.

This ESA has identified no evidence of RECs, CRECs, or HRECs in connection with the Subject Property.

9.0 Non-Scope Considerations

Assessments of potential environmental issues or conditions at the Subject Property that may relate to commercial real estate activities, but were not part of this scope of work include the following:

- Asbestos Survey
- Radon Gas Survey
- Lead-Based Paint Assessment
- Lead in Drinking Water Evaluation
- Wetland Delineation
- Regulatory Compliance Audit
- Cultural and Historic Resources Review
- Industrial Hygiene Review
- Health and Safety Assessment
- Ecological Resources Evaluation
- Endangered Species Survey
- Indoor Air Quality Evaluation
- Mold Investigation
- High Voltage Power Lines Assessment

This list is not intended to be all-inclusive and is not intended to imply significance of further investigation into these non-scope items.

10.0 References

American Society for Testing and Materials, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process E 1527-13,* West Conshohocken, PA, 2013.

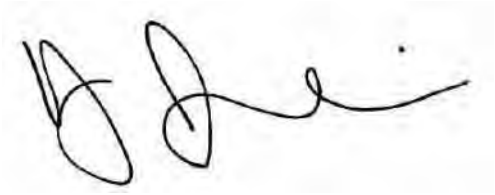
University of Minnesota, *Geologic Atlas, Scott County, Minnesota*, 2006.

Other materials referenced in this report are included in the Appendices.

11.0 Signature Page

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in 312.10 of 40 CFR Part 312, and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared by:



Kelly J. Jaworski
Environmental Scientist

Reviewed by:

Adam P. Zobel
Senior Environmental Project Manager

12.0 Qualifications

Company Experience

WENCK ASSOCIATES, INC. is a full-service environmental consulting firm that specializes in providing comprehensive environmental, regulatory, and safety guidance for our client's real estate asset protection, redevelopment and development needs. Collectively, Wenck offers our clients over 25 years of experience, depth of technical and regulatory knowledge and expertise in the following service areas:

- Environmental Assessment Services (Phase I and II)
- Site Preparation/Planning Services
- Integrated Site Remediation and Risk-based Response Actions
- Storage Tank Removal, Replacement and Compliance
- Stormwater Management Plans and Permitting (NPDES requirements, etc.)
- Wetlands Delineation and Mitigation
- Environmental Permitting and Compliance
- Asbestos and Lead Identification and Abatement
- Voluntary Cleanup Programs and Guidance on Public Funding Mechanisms for Brownfield Redevelopment
- Indoor Air Quality Assessment
- Facility Layout Review for Environmental and Safety Efficiency
- Environmental Impact Assessments (EIA) and Statements (EIS), Environmental Assessment Worksheets (EAW), Alternative Urban Areawide Review (AUAR)
- Traffic Engineering
- Pollution Prevention Plans
- Greenhouse Gas Services

Wenck strives to provide our clients with strategic, high quality and cost-effective services that are customized to their specific needs. For more extensive information on the services we provide please refer to www.wenck.com.

Individual Bios

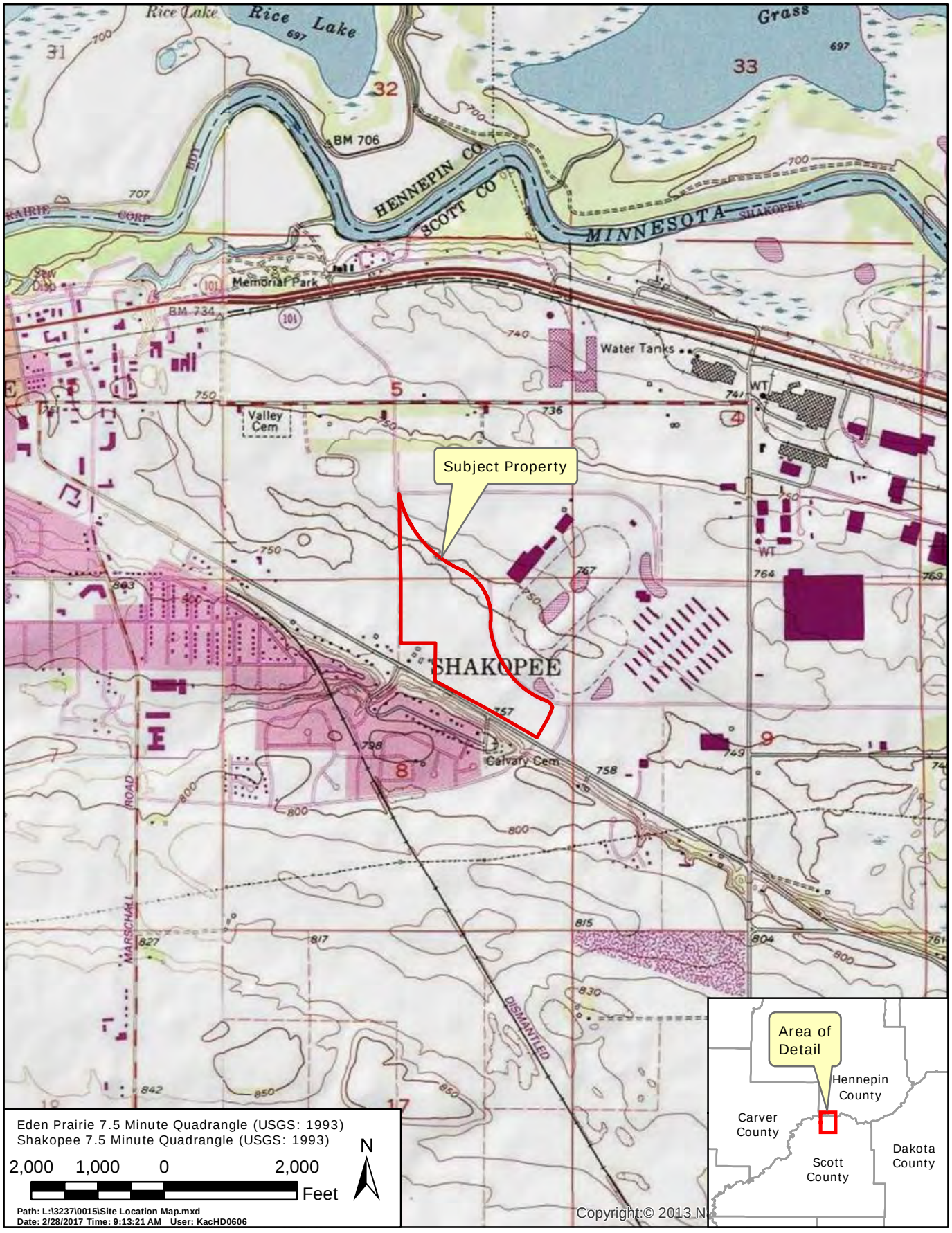
Ms. Kelly Jaworski

Ms. Jaworski has 4 years of experience on diverse projects including Phase I and Phase II ESA's. She has assisted and implemented remedial investigation activities, including work plan preparation, site safety planning, on-site contractor oversight, construction excavation observation and generation of final reports. She has also assisted on petroleum release site investigations, underground storage tank-removals, groundwater monitoring and reporting, and soil/groundwater remediation to the satisfaction of developers and their lenders. Ms. Jaworski holds a Bachelor of Science in Geology from the University of Wisconsin-River Falls.

Mr. Adam Zobel

Mr. Zobel is an Environmental Project Manager within the Real Estate Resources Group at Wenck Associates, Inc. He has 14 years of environmental consulting experience assisting clients with transaction-based environmental due diligence, brownfield redevelopment, petroleum and non-petroleum release investigations, and remediation. Mr. Zobel holds a Bachelor of Arts in Biology with a Concentration in Business Management Studies from St. Olaf College in Northfield, Minnesota.

Figures



DORAN

Site Location Map

WENCK ASSOCIATES

Responsive partner. Exceptional outcomes.

MAR 2017

Figure 1

DORAN

Site Location Map

WENCK ASSOCIATES
Responsive partner. Exceptional outcomes.

MAR 2017

Figure 1

Appendix A

User Questionnaire

ALL APPROPRIATE INQUIRY USER QUESTIONNAIRE

Property Description/Address: T115N, R22W, Section 8 and Section 5, Shakopee, MN

This questionnaire must be completed by the person or entity for whose benefit the investigation is being conducted (the "User" of the report) and given to the environmental consultant. No investigation is required to complete this questionnaire: it should be completed with whatever information the User has at this time.

1. **Environmental cleanup liens.** Are you aware of any environmental cleanup liens on the property that are filed or recorded under federal, tribal, state or local laws?

☐ Yes Explain: _____

☒ No

2. **Activity and land use limitations (AULs).** Are you aware of any AULs, such as engineering controls (e.g., vapor controls, asphalt caps, etc.), land use restrictions or institutional controls (e.g., recorded notices of contamination) that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

☐ Yes Explain: _____

☒ No

3. **Specialized knowledge or experience.** Do you have any specialized knowledge or experience related to the property or nearby properties that might indicate the presence or actual or potential contamination at the property? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge or the chemicals and processes used by this type of business?

☐ Yes Explain: _____

☒ No

4. **Relationship of the purchase price to fair market value.** (a) Does the purchase price being paid for this property reasonably reflect the fair market value of the property? *Note: An appraisal is not required. Also, while the User must make this determination, the User is not required to disclose it.*

☒ Yes

☐ No Explain: _____
☐ Purchase price has not been determined.
☐ We have made or will make this determination, but do not wish to disclose it.

(b) If you conclude that there is a difference between the purchase price and fair market value, could the lower purchase price be attributable to contamination that is known or believed to be present at the property? *Note: Whether or not disclosed to the consultant, if the purchase price is*

less than fair market value, the User should document the explanation for the difference, in writing, and retain the explanation.

☐ Yes Explain: _____

☒ No

☐ We have made or will make this determination, but do not wish to disclose it.

5. Commonly known or reasonably ascertainable information. Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional identify conditions indicative of releases or threatened releases? Examples: Do you know of past uses of the property that could have resulted in contamination? Do you know of any spills or other chemical releases that have taken place at the property? Do you know of any environmental cleanups that have taken place at the property?

☐ Yes Explain: _____

☒ No

6. Obvious presence or likely presence of contamination. Based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence or likely presence of contamination at the property?

☐ Yes Explain: _____

☒ No

Questionnaire completed by:

Signature: _____

Name: Anthony J. Kuechle

Title: Senior Vice President Development

Date: 2/21/17

Appendix B

GeoSearch Radius Report

GeoSearch
On time. On target. In touch.™

Radius Report

Satellite view

Target Property:

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, Scott County, Minnesota 55379

Prepared For:

Historical Information Gatherers

Order #: 81595
Job #: 176741
Project #: 2001849
Date: 02/20/2017

Table of Contents

Disclaimer

This report was designed by GeoSearch to meet or exceed the records search requirements of the All Appropriate Inquiries Rule (40 CFR §312.26) and the current version of the ASTM International E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process or, if applicable, the custom requirements requested by the entity that ordered this report. The records and databases of records used to compile this report were collected from various federal,state and local governmental entities. It is the goal of GeoSearch to meet or exceed the 40 CFR §312.26 and E1527 requirements for updating records by using the best available technology. GeoSearch contacts the appropriate governmental entities on a recurring basis. Depending on the frequency with which a record source or database of records is updated by the governmental entity, the data used to prepare this report may be updated monthly, quarterly, semi-annually, or annually.

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Target Property Summary

Target Property Information

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, Minnesota 55379

Coordinates
Area centroid (-93.486708, 44.7878238)
752 feet above sea level

USGS Quadrangle
Eden Prairie, MN

Geographic Coverage Information

County/Parish: Scott (MN) , Hennepin (MN)
ZipCode(s):
Eden Prairie MN: 55347
Shakopee MN: 55379

Radon
* Target property is located in Radon Zone 1.
Zone 1 areas have a predicted average indoor radon screening level greater than 4 pCi/L (picocuries per liter).

Database Summary

FEDERAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
EMERGENCY RESPONSE NOTIFICATION SYSTEM	ERNSMN	0	0	TP/AP
FEDERAL ENGINEERING INSTITUTIONAL CONTROL SITES	EC	0	0	TP/AP
LAND USE CONTROL INFORMATION SYSTEM	LUCIS	0	0	TP/AP
RCRA SITES WITH CONTROLS	RCRASC	0	0	TP/AP
NO LONGER REGULATED RCRA GENERATOR FACILITIES	NLRRCRAG	0	0	0.1250
RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR	RCRAGR05	1	0	0.1250
BROWNFIELDS MANAGEMENT SYSTEM	BF	0	0	0.5000
NO LONGER REGULATED RCRA NON-CORRACTS TSD FACILITIES	NLRRCRAT	0	0	0.5000
RESOURCE CONSERVATION & RECOVERY ACT - NON-CORRACTS TREATMENT, STORAGE & DISPOSAL FACILITIES	RCRAT	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM	SEMS	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM ARCHIVED SITE INVENTORY	SEMSARCH	0	0	0.5000
DELISTED NATIONAL PRIORITIES LIST	DNPL	0	0	1.0000
NATIONAL PRIORITIES LIST	NPL	0	0	1.0000
NO LONGER REGULATED RCRA CORRECTIVE ACTION FACILITIES	NLRRCRAC	0	0	1.0000
PROPOSED NATIONAL PRIORITIES LIST	PNPL	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION FACILITIES	RCRAC	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - SUBJECT TO CORRECTIVE ACTION FACILITIES	RCRASUBC	0	0	1.0000

SUB-TOTAL		1	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
AEROMETRIC INFORMATION RETRIEVAL SYSTEM / AIR FACILITY SUBSYSTEM	AIRSAFS	0	0	TP/AP
BIENNIAL REPORTING SYSTEM	BRS	0	0	TP/AP
CERCLIS LIENS	SFLIENS	0	0	TP/AP
CLANDESTINE DRUG LABORATORY LOCATIONS	CDL	0	0	TP/AP
EPA DOCKET DATA	DOCKETS	0	0	TP/AP
FACILITY REGISTRY SYSTEM	FRSMN	0	0	TP/AP
HAZARDOUS MATERIALS INCIDENT REPORTING SYSTEM	HMIRSR05	0	0	TP/AP

Database Summary

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
INTEGRATED COMPLIANCE INFORMATION SYSTEM (FORMERLY DOCKETS)	ICIS	0	0	TP/AP
INTEGRATED COMPLIANCE INFORMATION SYSTEM NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	ICISNPDES	0	0	TP/AP
MATERIAL LICENSING TRACKING SYSTEM	MLTS	0	0	TP/AP
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	NPDESR05	0	0	TP/AP
PCB ACTIVITY DATABASE SYSTEM	PADS	0	0	TP/AP
PERMIT COMPLIANCE SYSTEM	PCSR05	0	0	TP/AP
SECTION SEVEN TRACKING SYSTEM	SSTS	0	0	TP/AP
TOXIC SUBSTANCE CONTROL ACT INVENTORY	TSCA	0	0	TP/AP
TOXICS RELEASE INVENTORY	TRI	0	0	TP/AP
HISTORICAL GAS STATIONS	HISTPST	0	0	0.2500
MINE SAFETY AND HEALTH ADMINISTRATION MASTER INDEX FILE	MSHA	0	0	0.2500
MINERAL RESOURCE DATA SYSTEM	MRDS	0	0	0.2500
OPEN DUMP INVENTORY	ODI	0	0	0.5000
DEPARTMENT OF DEFENSE SITES	DOD	0	0	1.0000
FORMER MILITARY NIKE MISSILE SITES	NMS	0	0	1.0000
FORMERLY USED DEFENSE SITES	FUDS	0	0	1.0000
RECORD OF DECISION SYSTEM	RODS	0	0	1.0000

SUB-TOTAL		0	0	

Database Summary

STATE (MN) LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
WATER DISCHARGE PERMITS	WDP	0	0	TP/AP
PERMITTED BY RULE LANDFILLS	PBRLF	0	0	0.2500
REGISTERED STORAGE TANKS	UAST	5	2	0.2500
SITES WITH INSTITUTIONAL CONTROLS	IC	0	0	0.2500
CLOSED LANDFILLS	CLF	0	0	0.5000
OPEN SOLID WASTE FACILITIES	SWF	0	0	0.5000
PETROLEUM BROWNFIELDS PROGRAM SITES	PBF	1	0	0.5000
POTENTIAL VOLUNTARY INVESTIGATION AND CLEANUP PROGRAM SITES	PVICP	0	0	0.5000
REGISTERED LEAKING STORAGE TANKS	LUAST	2	0	0.5000
SITE RESPONSE SECTION DATABASE	SRS	0	0	0.5000
STATE ASSESSMENT SITES	SAS	1	0	0.5000
UNPERMITTED DUMP SITES	UNPERMDUMPS	0	0	0.5000
VOLUNTARY INVESTIGATION AND CLEANUP PROGRAM SITES	VICP	0	0	0.5000
MPCA REMEDIATION SITES	REMSITES	20	0	1.0000
SUPERFUND SITE INFORMATION LISTING	SF	2	0	1.0000

SUB-TOTAL		31	2	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
CLANDESTINE DRUG LABORATORY LOCATIONS	CDL	0	0	TP/AP
FEEDLOTS	FEEDLOT	0	0	TP/AP
PERMITTED AIR FACILITIES	AIRS	0	0	TP/AP
SOLID WASTE UTILIZATION PROJECTS	SWUP	0	0	TP/AP
SPILLS LISTING	PCASPILLS	0	0	TP/AP
TIER TWO FACILITY LISTING	TIERII	0	0	TP/AP
BULK STORAGE PERMITS	BULKSTORAGE	0	0	0.2500
REGISTERED DRYCLEANING FACILITIES	CLEANERS	0	0	0.2500
AGRICULTURAL SPILLS LISTING	AGSPILLS	0	0	0.5000
CONCENTRATED ANIMAL FEEDING OPERATIONS	CAFO	1	0	0.5000

SUB-TOTAL		1	0	

Database Summary

TRIBAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	USTR05	0	0	0.2500
LEAKING UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	LUSTR05	0	0	0.5000
OPEN DUMP INVENTORY ON TRIBAL LANDS	ODINDIAN	0	0	0.5000
SUB-TOTAL		0	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
INDIAN RESERVATIONS	INDIANRES	0	0	1.0000
SUB-TOTAL		0	0	

TOTAL		33	2	

Database Radius Summary

FEDERAL LISTING

Standard environmental records are displayed in bold.

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
AIRSAFS	0.0200	0	NS	NS	NS	NS	NS	0
BRS	0.0200	0	NS	NS	NS	NS	NS	0
CDL	0.0200	0	NS	NS	NS	NS	NS	0
DOCKETS	0.0200	0	NS	NS	NS	NS	NS	0
EC	0.0200	0	NS	NS	NS	NS	NS	0
ERNSMN	0.0200	0	NS	NS	NS	NS	NS	0
FRSMN	0.0200	0	NS	NS	NS	NS	NS	0
HMIRSR05	0.0200	0	NS	NS	NS	NS	NS	0
ICIS	0.0200	0	NS	NS	NS	NS	NS	0
ICISNPDES	0.0200	0	NS	NS	NS	NS	NS	0
LUCIS	0.0200	0	NS	NS	NS	NS	NS	0
MLTS	0.0200	0	NS	NS	NS	NS	NS	0
NPDESR05	0.0200	0	NS	NS	NS	NS	NS	0
PADS	0.0200	0	NS	NS	NS	NS	NS	0
PCSR05	0.0200	0	NS	NS	NS	NS	NS	0
RCRASC	0.0200	0	NS	NS	NS	NS	NS	0
SFLIENS	0.0200	0	NS	NS	NS	NS	NS	0
SSTS	0.0200	0	NS	NS	NS	NS	NS	0
TRI	0.0200	0	NS	NS	NS	NS	NS	0
TSCA	0.0200	0	NS	NS	NS	NS	NS	0
NLRRCRAG	0.1250	0	0	NS	NS	NS	NS	0
RCRAGR05	0.1250	0	1	NS	NS	NS	NS	1
HISTPST	0.2500	0	0	0	NS	NS	NS	0
MRDS	0.2500	0	0	0	NS	NS	NS	0
MSHA	0.2500	0	0	0	NS	NS	NS	0
BF	0.5000	0	0	0	0	NS	NS	0
NLRRCRAT	0.5000	0	0	0	0	NS	NS	0
ODI	0.5000	0	0	0	0	NS	NS	0
RCRAT	0.5000	0	0	0	0	NS	NS	0
SEMS	0.5000	0	0	0	0	NS	NS	0
SEMSARCH	0.5000	0	0	0	0	NS	NS	0
DNPL	1.0000	0	0	0	0	0	NS	0
DOD	1.0000	0	0	0	0	0	NS	0
FUDS	1.0000	0	0	0	0	0	NS	0
NLRRCRAC	1.0000	0	0	0	0	0	NS	0

Database Radius Summary

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
NMS	1.0000	0	0	0	0	0	NS	0
NPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
PNPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRAC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRASUBC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RODS	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		0	1	0	0	0	0	1

Database Radius Summary

STATE (MN) LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
AIRS	0.0200	0	NS	NS	NS	NS	NS	0
CDL	0.0200	0	NS	NS	NS	NS	NS	0
FEEDLOT	0.0200	0	NS	NS	NS	NS	NS	0
PCASPILLS	0.0200	0	NS	NS	NS	NS	NS	0
SWUP	0.0200	0	NS	NS	NS	NS	NS	0
TIERII	0.0200	0	NS	NS	NS	NS	NS	0
WDP	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
BULKSTORAGE	0.2500	0	0	0	NS	NS	NS	0
CLEANERS	0.2500	0	0	0	NS	NS	NS	0
IC	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
PBRLF	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
UAST	**0.2500**	**0**	**0**	**5**	**NS**	**NS**	**NS**	**5**
AGSPILLS	0.5000	0	0	0	0	NS	NS	0
CAFO	0.5000	0	0	1	0	NS	NS	1
CLF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
LUAST	**0.5000**	**0**	**0**	**0**	**2**	**NS**	**NS**	**2**
PBF	**0.5000**	**0**	**1**	**0**	**0**	**NS**	**NS**	**1**
PVICP	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SAS	**0.5000**	**0**	**0**	**0**	**1**	**NS**	**NS**	**1**
SRS	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SWF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
UNPERMDUMPS	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
VICP	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
REMSITES	**1.0000**	**0**	**1**	**0**	**2**	**17**	**NS**	**20**
SF	**1.0000**	**0**	**0**	**0**	**0**	**2**	**NS**	**2**

SUB-TOTAL		0	2	6	5	19	0	32

Database Radius Summary

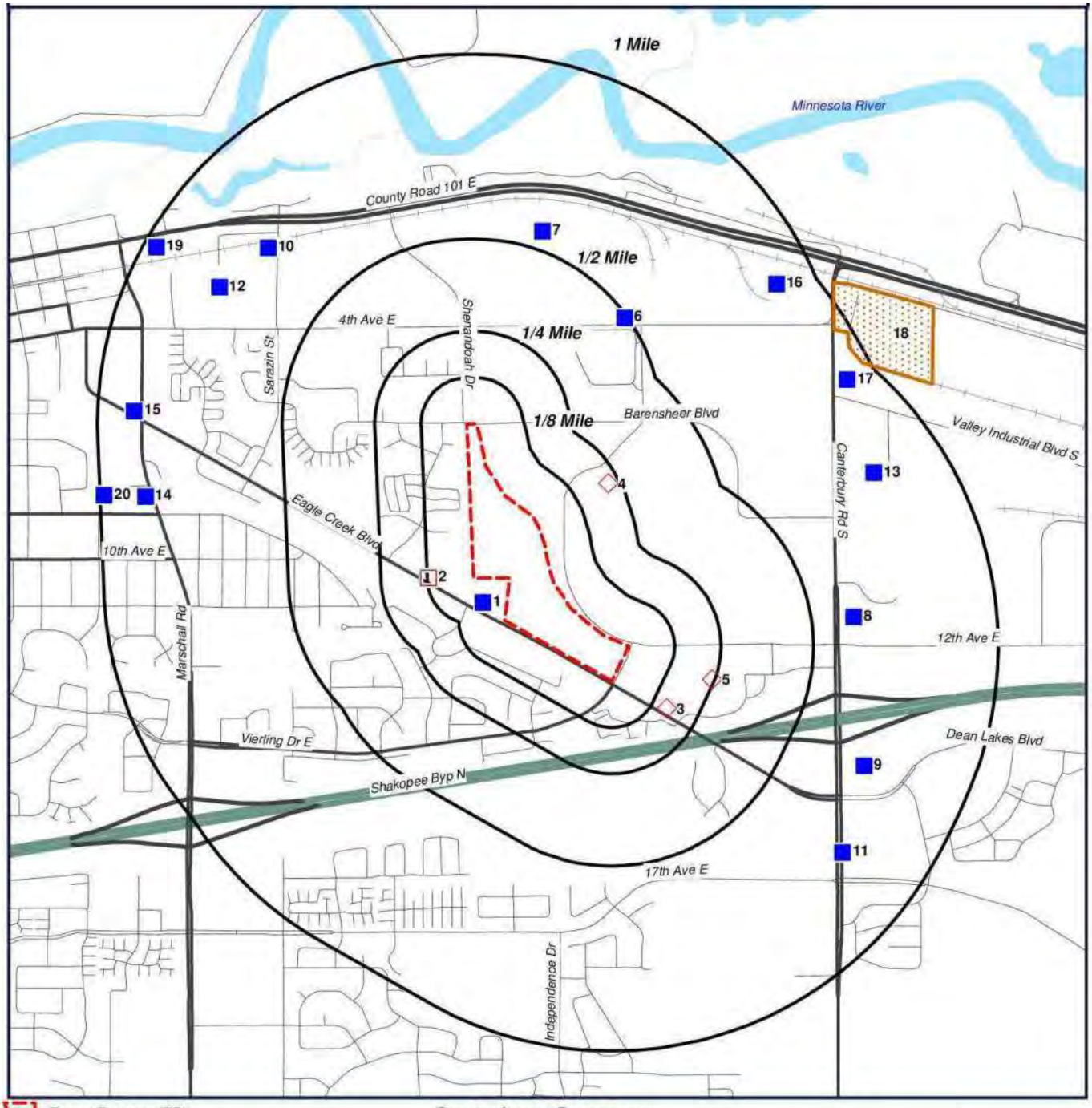
TRIBAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
USTR05	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
LUSTR05	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
ODINDIAN	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
INDIANRES	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		0	0	0	0	0	0	0
TOTAL		0	3	6	5	19	0	33

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

Radius Map 1



Target Property (TP)
REMSITES
RCRAGR05
UAST
REMSITES
SF

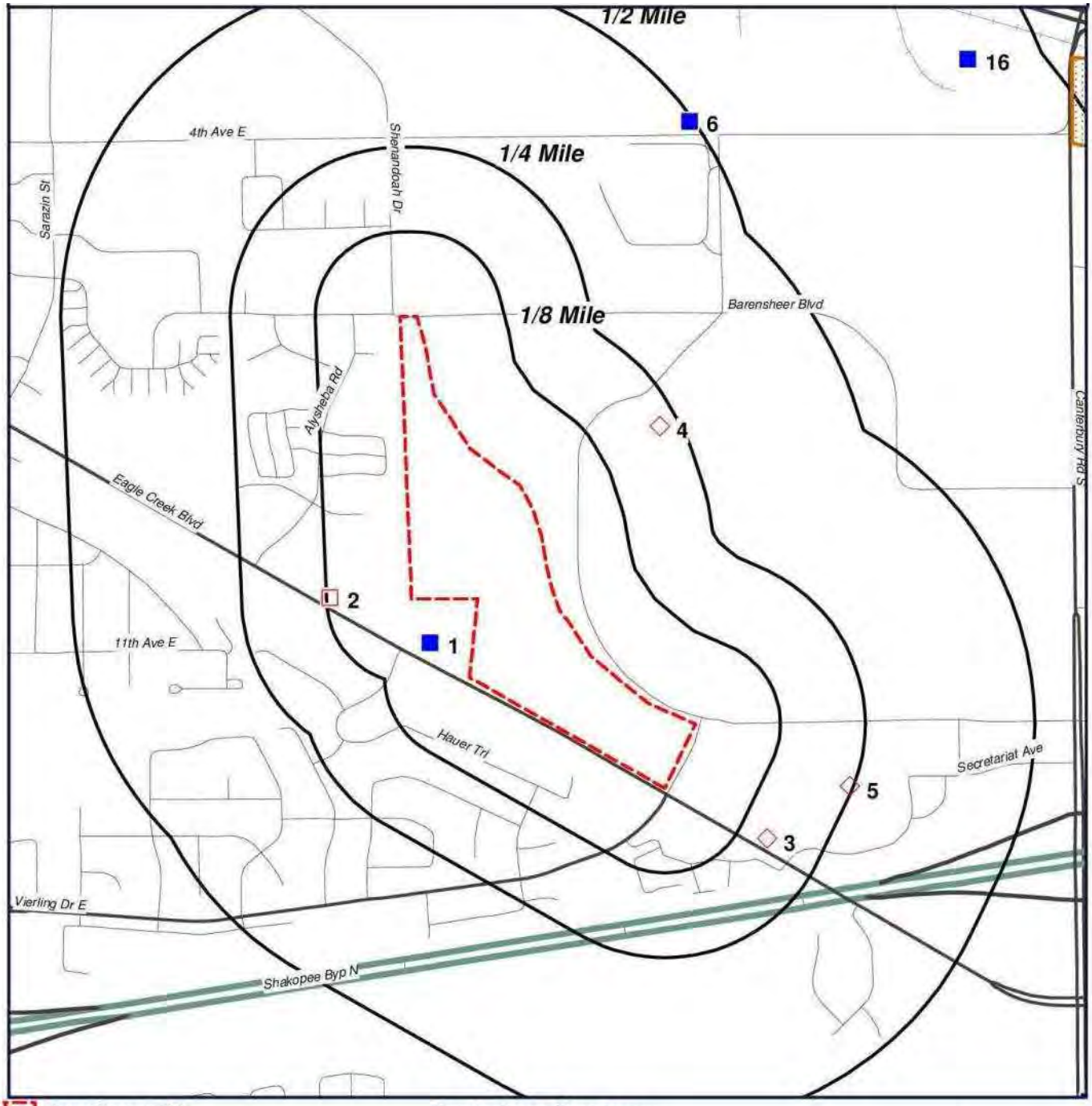
Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, Minnesota
55379

N
W E
S

0' 1100' 2200' 3300'
SCALE: 1" = 2200'

[Click here to access Satellite view]

Radius Map 2



Target Property (TP)
REMSITES
RCRAGR05
UAST
REMSITES
SF

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, Minnesota
55379

N
W E
S

0' 600' 1200' 1800'
SCALE: 1" = 1200'

[Click here to access Satellite view]

Ortho Map

Target Property (TP)
REMSITES
RCRAGR05
UAST
REMSITES
SF

Quadrangle(s): Eden Prairie
Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, Minnesota
55379

N
W E
S

0' 600' 1200' 1800'
SCALE: 1" = 1200'

Click here to access Satellite view

Topographic Map

Target Property (TP)

Quadrangle(s): Eden Prairie
Source: USGS, 08/20/2013
Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, Minnesota
55379

N
W E
S

0' 1100' 2200' 3300'
SCALE: 1" = 2200'

[Click here to access Satellite view]

Located Sites Summary

NOTE: Standard environmental records are displayed in bold.

Map ID#	Database Name	Site ID#	Relative Elevation	Distance From Site	Site Name	Address	PAGE #
1	REMSITES	195653	Higher (758 ft.)	0.07 mi. NW (370 ft.)	HAUER FARMS	SEE LOCATION DESCRIPTION, SHAKOPEE, MN 55379	18
1	PBF	76636083PBF	Higher (758 ft.)	0.07 mi. NW (370 ft.)	HAUER FARMS	SEE LOCATION DESCRIPTION, SHAKOPEE, MN 55379	19
2	RCRAGR05	MND985723360	Higher (766 ft.)	0.12 mi. NW (634 ft.)	CSR FINISHING INC	2287 EAGLE CREEK BLVD, SHAKOPEE, MN 55379	20
3	UAST	105672UAST	Higher (755 ft.)	0.18 mi. SE (950 ft.)	FORMERLY DISTRIBUTION CONSTRUCTION CO	3401 EAGLE CREEK BLVD, SHAKOPEE, MN 55379	22
3	UAST	4433	Higher (755 ft.)	0.18 mi. SE (950 ft.)	FORMERLY DISTRIBUTION CONSTRUCTION CO	3401 EAGLE CREEK BLVD, SHAKOPEE, MN 55379	23
4	UAST	63734UAST	Higher (763 ft.)	0.23 mi. N (1214 ft.)	CANTERBURY PARK	1100 CANTERBURY RD, SHAKOPEE, MN 55379	25
4	UAST	4447	Higher (763 ft.)	0.23 mi. N (1214 ft.)	CANTERBURY PARK	1100 COUNTY ROAD 83, SHAKOPEE, MN 55379	27
4	CAFO	139-61921	Higher (763 ft.)	0.23 mi. N (1214 ft.)	CANTERBURY PARK	1100 CANTERBURY RD, SHAKOPEE, MN 55379	30
5	UAST	55911	Higher (755 ft.)	0.25 mi. E (1320 ft.)	SEAGATE TECHNOLOGY	1280 DISC DR, SHAKOPEE, MN 55379	32
6	LUAST	19518LUAST	Lower (738 ft.)	0.5 mi. N (2640 ft.)	CERTAINTEED CORPORATION	3303 E 4TH AVE, SHAKOPEE, MN 55379	39
6	REMSITES	188294	Lower (738 ft.)	0.5 mi. N (2640 ft.)	CERTAINTEED CORPORATION	3303 E 4TH AVE, SHAKOPEE, MN 55379	40
6	REMSITES	188	Lower (738 ft.)	0.5 mi. N (2640 ft.)	CERTAINTEED CORP	3303 E 4TH AVE, SHAKOPEE, MN 55379	41
6	SAS	2088SAS	Lower (738 ft.)	0.5 mi. N (2640 ft.)	CERTAINTEED CORP	3303 E 4TH AVE, SHAKOPEE, MN 55379	42
6	LUAST	12248LUAST	Lower (738 ft.)	0.5 mi. N (2640 ft.)	CERTAINTEED CORP	3303 4TH AVE E, SHAKOPEE, MN 55379	43
7	REMSITES	196759	Lower (737 ft.)	0.56 mi. N (2957 ft.)	OWENS ILLINOIS SPILL	SEE LOCATION DESCRIPTION, SHAKOPEE, MN 55379	44
8	REMSITES	105665	Higher (764 ft.)	0.63 mi. E (3326 ft.)	OASIS MARKET #525	1147 COUNTY ROAD 83, SHAKOPEE, MN 55379	45
9	REMSITES	187620	Higher (757 ft.)	0.73 mi. E (3854 ft.)	DEAN LAKES COMMERCIAL PROPERTY	4135 DEAN LAKES BLVD, SHAKOPEE, MN 55379	46
10	REMSITES	117728	Lower (736 ft.)	0.73 mi. NW (3854 ft.)	DRESSEN OIL CO	200 SARAZIN ST, SHAKOPEE, MN 55379	47
11	REMSITES	192779	Higher (788 ft.)	0.78 mi. SE (4118 ft.)	SPFR - VALLEY GREEN #3	SEE LOCATION DESCRIPTION, SHAKOPEE, MN 55379	48
11	REMSITES	190794	Higher (788 ft.)	0.78 mi. SE (4118 ft.)	SHAKOPEE POLICE FIRING RANGE	SEE LOCATION DESCRIPTION, SHAKOPEE, MN 55379	49
12	REMSITES	53104	Lower (741 ft.)	0.78 mi. NW (4118 ft.)	UNIVERSAL FOREST PRODUCTS	205 CAVANAUGH DR, SHAKOPEE, MN 55379	50
13	REMSITES	104387	Higher (766 ft.)	0.82 mi. NE (4330 ft.)	PSI HOLDINGS	800 VALLEY INDUSTRIAL CIRCLE, SHAKOPEE, MN 55379	51
14	REMSITES	192814	Higher (786 ft.)	0.88 mi. W (4646 ft.)	HUNTINGTON PARK APARTMENTS	852 MARSCHALL RD, SHAKOPEE, MN 55379	52
15	SF	SR250	Higher (757 ft.)	0.91 mi. NW (4805 ft.)	HENNEN CLEANERS (SF)	590 S MARSCHALL RD, SHAKOPEE, MN 55379	53

Located Sites Summary

15	REMSITES	105670	Higher (757 ft.)	0.91 mi. NW (4805 ft.)	FORMER S & S MARATHON	590 S MARSCHALL RD, SHAKOPEE, MN 55379	54
16	REMSITES	1360	Lower (735 ft.)	0.91 mi. NE (4805 ft.)	INTERNATIONAL PAPER	3900 STATE HIGHWAY 101, SHAKOPEE, MN 55379	55
17	REMSITES	21681	Lower (744 ft.)	0.94 mi. NE (4963 ft.)	AIR PRODUCTS & CHEMICALS INC - SHAKOPEE	373 CANTERBURY RD, SHAKOPEE, MN 55379	56
18	REMSITES	186409	Lower (740 ft.)	0.97 mi. NE (5122 ft.)	MINNEGASCO METER SITE-ANCHOR GLASS	4108 VALLEY INDUSTRIAL BOULEVARD, SHAKOPEE, MN 55379	57
18	SF	SR105	Lower (740 ft.)	0.97 mi. NE (5122 ft.)	ANCHOR GLASS CONTAINER (SF)	4108 VALLEY INDUSTRIAL BOULEVARD, SHAKOPEE, MN 55379	58
18	REMSITES	1274	Lower (740 ft.)	0.97 mi. NE (5122 ft.)	ANCHOR GLASS CONTAINER CORP	4108 VALLEY INDUSTRIAL BLVD N, SHAKOPEE, MN 55379	59
19	REMSITES	116096	Lower (735 ft.)	0.98 mi. NW (5174 ft.)	APPLE FORD AUTO SALES	1400 E 1ST AVE, SHAKOPEE, MN 55379	61
20	REMSITES	187861	Higher (787 ft.)	0.99 mi. W (5227 ft.)	HUNTINGTON APARTMENTS	1245 SHAKOPEE, SHAKOPEE, MN 55379	62
20	REMSITES	20559	Higher (787 ft.)	0.99 mi. W (5227 ft.)	HUNTINGTON PARK APTS	1245 SHAKOPEE AVE, SHAKOPEE, MN 55379	63

Elevation Summary

Elevations are collected from the USGS 3D Elevation Program 1/3 arc-second (approximately 10 meters) layer hosted at the NGTOC. .

Target Property Elevation: 752 ft.

NOTE: Standard environmental records are displayed in bold.

EQUAL/HIGHER ELEVATION

Map ID#	Database Name	Elevation	Site Name	Address	Page #
1	REMSITES	758 ft.	HAUER FARMS	SEE LOCATION DESCRIPTION, SHAKOPEE, MN 55379	18
1	PBF	758 ft.	HAUER FARMS	SEE LOCATION DESCRIPTION, SHAKOPEE, MN 55379	19
2	RCRAGR05	766 ft.	CSR FINISHING INC	2287 EAGLE CREEK BLVD, SHAKOPEE, MN 55379	20
3	UAST	755 ft.	FORMERLY DISTRIBUTION CONSTRUCTION CO	3401 EAGLE CREEK BLVD, SHAKOPEE, MN 55379	22
3	UAST	755 ft.	FORMERLY DISTRIBUTION CONSTRUCTION CO	3401 EAGLE CREEK BLVD, SHAKOPEE, MN 55379	23
4	UAST	763 ft.	CANTERBURY PARK	1100 CANTERBURY RD, SHAKOPEE, MN 55379	25
4	UAST	763 ft.	CANTERBURY PARK	1100 COUNTY ROAD 83, SHAKOPEE, MN 55379	27
4	CAFO	763 ft.	CANTERBURY PARK	1100 CANTERBURY RD, SHAKOPEE, MN 55379	30
5	UAST	755 ft.	SEAGATE TECHNOLOGY	1280 DISC DR, SHAKOPEE, MN 55379	32
8	REMSITES	764 ft.	OASIS MARKET #525	1147 COUNTY ROAD 83, SHAKOPEE, MN 55379	45
9	REMSITES	757 ft.	DEAN LAKES COMMERCIAL PROPERTY	4135 DEAN LAKES BLVD, SHAKOPEE, MN 55379	46
11	REMSITES	788 ft.	SPFR - VALLEY GREEN #3	SEE LOCATION DESCRIPTION, SHAKOPEE, MN 55379	48
11	REMSITES	788 ft.	SHAKOPEE POLICE FIRING RANGE	SEE LOCATION DESCRIPTION, SHAKOPEE, MN 55379	49
13	REMSITES	766 ft.	PSI HOLDINGS	800 VALLEY INDUSTRIAL CIRCLE, SHAKOPEE, MN 55379	51
14	REMSITES	786 ft.	HUNTINGTON PARK APARTMENTS	852 MARSCHALL RD, SHAKOPEE, MN 55379	52
15	SF	757 ft.	HENNEN CLEANERS (SF)	590 S MARSCHALL RD, SHAKOPEE, MN 55379	53
15	REMSITES	757 ft.	FORMER S & S MARATHON	590 S MARSCHALL RD, SHAKOPEE, MN 55379	54
20	REMSITES	787 ft.	HUNTINGTON APARTMENTS	1245 SHAKOPEE, SHAKOPEE, MN 55379	62
20	REMSITES	787 ft.	HUNTINGTON PARK APTS	1245 SHAKOPEE AVE, SHAKOPEE, MN 55379	63

LOWER ELEVATION

Map ID#	Database Name	Elevation	Site Name	Address	Page #
6	LUAST	738 ft.	CERTAINTEED CORPORATION	3303 E 4TH AVE, SHAKOPEE, MN 55379	39
6	REMSITES	738 ft.	CERTAINTEED CORPORATION	3303 E 4TH AVE, SHAKOPEE, MN 55379	40

Elevation Summary

6	REMSITES	738 ft.	CERTAINTEED CORP	3303 E 4TH AVE, SHAKOPEE, MN 55379	41
6	SAS	738 ft.	CERTAINTEED CORP	3303 E 4TH AVE, SHAKOPEE, MN 55379	42
6	LUAST	738 ft.	CERTAINTEED CORP	3303 4TH AVE E, SHAKOPEE, MN 55379	43
7	REMSITES	737 ft.	OWENS ILLINOIS SPILL	SEE LOCATION DESCRIPTION, SHAKOPEE, MN 55379	44
10	REMSITES	736 ft.	DRESSEN OIL CO	200 SARAZIN ST, SHAKOPEE, MN 55379	47
12	REMSITES	741 ft.	UNIVERSAL FOREST PRODUCTS	205 CAVANAUGH DR, SHAKOPEE, MN 55379	50
16	REMSITES	735 ft.	INTERNATIONAL PAPER	3900 STATE HIGHWAY 101, SHAKOPEE, MN 55379	55
17	REMSITES	744 ft.	AIR PRODUCTS & CHEMICALS INC - SHAKOPEE	373 CANTERBURY RD, SHAKOPEE, MN 55379	56
18	REMSITES	740 ft.	MINNEGASCO METER SITE-ANCHOR GLASS	4108 VALLEY INDUSTRIAL BOULEVARD, SHAKOPEE, MN 55379	57
18	SF	740 ft.	ANCHOR GLASS CONTAINER (SF)	4108 VALLEY INDUSTRIAL BOULEVARD, SHAKOPEE, MN 55379	58
18	REMSITES	740 ft.	ANCHOR GLASS CONTAINER CORP	4108 VALLEY INDUSTRIAL BLVD N, SHAKOPEE, MN 55379	59
19	REMSITES	735 ft.	APPLE FORD AUTO SALES	1400 E 1ST AVE, SHAKOPEE, MN 55379	61

MPCA Remediation Sites (REMSITES)

MAP ID# 1

Distance from Property: 0.07 mi. (370 ft.) NW
Elevation: 758 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: 195653
AGENCY INTEREST(AI) ID: 195653
ITEM ID: 195653-AREA0000000001
AGENCY INTEREST(AI) NAME: HAUER FARMS
ADDRESS: SEE LOCATION DESCRIPTION
SHAKOPEE, MN 55379
OWNER: CANTERBURY PARK HOLDING CORP
OWNER ADDRESS: 1100 CANTERBURY RD
SHAKOPEE, MN 55379

FACILITY DETAILS

TYPE OF REMEDIATION SITE: BROWNFIELD SITE
SITE ID: PB4951
SITE NAME: HAUER FARMS
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: MIKE CONNOLLY
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: BRITTNEY SCHULLER
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 1/21/2016

Back to Report Summary

Petroleum Brownfields Program Sites (PBF)

MAP ID# 1

Distance from Property: 0.07 mi. (370 ft.) NW
Elevation: 758 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: 76636083PBF
NAME: HAUER FARMS
ADDRESS: SEE LOCATION DESCRIPTION
SHAKOPEE, MN 55379
COUNTY: SCOTT
OWNER: CANTERBURY PARK HOLDING CORP
WATERSHED: NOT REPORTED
LATITUDE: NOT REPORTED
LONGITUDE: NOT REPORTED
COORDINATE COLLECTION METHOD: NO COORDINATES. WILL NOT SHOW UP ON MAP.

FACILITY DETAILS

ID: 4951
ACTIVITY NAME: HAUER FARMS
ACTIVE?: NO
SITE SIZE: NOT REPORTED
LEAK SOURCE: NOT REPORTED

Back to Report Summary

Resource Conservation & Recovery Act - Generator (RCRAGR05)

MAP ID# 2

Distance from Property: 0.12 mi. (634 ft.) NW
Elevation: 766 ft. (Higher than TP)

FACILITY INFORMATION

EPA ID#: MND985723360
NAME: CSR FINISHING INC
ADDRESS: 2287 EAGLE CREEK BLVD
SHAKOPEE, MN 55379
CONTACT NAME: CHARLES RITCHART
CONTACT ADDRESS: PO BOX 342
SHAKOPEE MN 55379-0342
CONTACT PHONE: 9524962305
NON-NOTIFIER: NOT A NON-NOTIFIER
DATE RECEIVED BY AGENCY: 06/12/1997

OWNER TYPE: NOT REPORTED
OWNER NAME: NOT REPORTED
OPERATOR TYPE: PRIVATE
OPERATOR NAME: CSR FINISHING INC

CERTIFICATION

CERTIFICATION NAME:	CERTIFICATION TITLE:	CERTIFICATION SIGNED DATE:
CHARLES RITCHART	OWNER	01/01/1985

INDUSTRY CLASSIFICATION (NAICS)
81142 - REUPHOLSTERY AND FURNITURE REPAIR

SITE HISTORY (INCLUDES GENERATORS AND NON-GENERATORS)
DATE RECEIVED BY AGENCY: 06/12/1997
NAME: CSR FINISHING INC

CURRENT ACTIVITY INFORMATION

GENERATOR STATUS: CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR LAST UPDATED DATE: 10/19/2009
SUBJECT TO CORRECTIVE ACTION UNIVERSE: NO
TDSFs POTENTIALLY SUBJECT TO CORRECTIVE ACTION UNDER 3004 (u)/(v) UNIVERSE: NO
TDSFs ONLY SUBJECT TO CORRECTIVE ACTION UNDER DISCRETIONARY AUTHORITIES UNIVERSE: NO
NON TSDFs WHERE RCRA CORRECTIVE ACTION HAS BEEN IMPOSED UNIVERSE: NO
CORRECTIVE ACTION WORKLOAD UNIVERSE: NO

IMPORTER: NO	UNDERGROUND INJECTION: NO
MIXED WASTE GENERATOR: NO	UNIVERSAL WASTE DESTINATION FACILITY: NO
RECYCLER: NO	TRANSFER FACILITY: NO
TRANSPORTER: NO	USED OIL FUEL BURNER: NO
ONSITE BURNER EXEMPTION: NO	USED OIL PROCESSOR: NO
FURNACE EXEMPTION: NO	USED OIL FUEL MARKETER TO BURNER: NO
USED OIL REFINER: NO	SPECIFICATION USED OIL MARKETER: NO
USED OIL TRANSFER FACILITY: NO	USED OIL TRANSPORTER: NO

COMPLIANCE, MONITORING AND ENFORCEMENT INFORMATION

EVALUATIONS - NO EVALUATIONS REPORTED -
VIOLATIONS - NO VIOLATIONS REPORTED -
ENFORCEMENTS - NO ENFORCEMENTS REPORTED -

HAZARDOUS WASTE

D000
D001 IGNITABLE WASTE

D009	**MERCURY**
F002	**THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE,TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE,CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001,F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.**
F003	**THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.**
F005	**THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE,CARBON DISULFIDE, ISOBUTANOL, PYRIDINE,BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001,F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.**

UNIVERSAL WASTE **- NO UNIVERSAL WASTE REPORTED -**

CORRECTIVE ACTION AREA **- NO CORRECTIVE ACTION AREA INFORMATION REPORTED -**

CORRECTIVE ACTION EVENT **- NO CORRECTIVE ACTION EVENT REPORTED -**

Back to Report Summary

Registered Storage Tanks (UAST)

MAP ID# 3

Distance from Property: 0.18 mi. (950 ft.) SE
Elevation: 755 ft. (Higher than TP)

FACILITY INFORMATION

Note: Data is current as of December 30th, 2016
GEOSEARCH ID: 105672UAST
AGENCY INTEREST(AI) ID: 105672
AGENCY INTEREST(AI) NAME: FORMERLY DISTRIBUTION CONSTRUCTION CO
ADDRESS: 3401 EAGLE CREEK BLVD
SHAKOPEE, MN 55379
OWNER: DISTRIBUTION CONSTRUCTION CO
OWNER ADDRESS: NOT REPORTED
NOT REPORTED, NOT REPORTED NOT REPORTED

FACILITY DETAILS

ITEM ID(ID for an individual tank. One individual tank can have zero to many compartments.): 105672-EQUI0000000001
ITEM COMPARTMENT(Represents a specific compartment of a specific tank.): 105672-EQUI0000000001-1
TANK SITE ID: TS4433
COMPARTMENT NUMBER WITHIN THE TANK: 1
CAPACITY OF THIS COMPARTMENT IN GALLONS: 1000
SUBSTANCE IN THE TANK: GASOLINE
TANK WALL TYPE: SINGLE
TANK MATERIAL: BARE/PAINT/ASPH COAT STEEL
TANK INSTALL DATE: 4/1/1979
STATUS CHANGE DATE: 3/1/1999
TANK STATUS: REMOVED
TANKS CONTRACTOR: NOT REPORTED

Back to Report Summary

MAP ID# 3

Distance from Property: 0.18 mi. (950 ft.) SE
Elevation: 755 ft. (Higher than TP)

FACILITY INFORMATION

Note: Data is current as of October 1st, 2015
GEOSEARCH ID: 4433
NAME: FORMERLY DISTRIBUTION CONSTRUCTION CO
ADDRESS: 3401 EAGLE CREEK BLVD
SHAKOPEE, MN 55379
SCOTT COUNTY

TANK INFORMATION

TANK NUMBER: 001
REGISTRATION DATE: 02/27/1986 00:00:00
TANK CAPACITY: 1000
TANK STATUS: THE TANK HAS BEEN REMOVED.
STORED PRODUCT: GASOLINE
ABOVE OR UNDERGROUND: UNDERGROUND

TANK & PIPE CONSTRUCTION

TANK MATERIAL TYPE: THE TANK IS MADE OF BARE/PAINT/ASPH COAT STEEL.
TANK CORROSION PROTECTION: THE PIPING HAS ANODE CATHODIC PROTECTION.
PIPE CORROSION PROTECTION: THE PIPING HAS NO CATHODIC PROTECTION.
PIPE MATERIAL TYPE: PIPING MATERIAL IS GALVANIZED STEEL
SECONDARY CONTAINMENT TANK TYPE: NOT REPORTED
SECONDARY CONTAINMENT PIPE TYPE: NOT REPORTED
TANK DISPENSER TYPE: THE TANK HAS A SUCTION TYPE DISPENSER.
PIPE SPILL CONTAINMENT: NOT REPORTED

TANK RELEASE DETECTION MEASURES

DAILY STICKING: YES
TIGHTNESS TEST: YES
MANUAL TANK GAUGING: NO
AUTOMATIC TANK GAUGING: NO
SOIL VAPOR MONITORING: NO
GROUNDWATER MONITORING: NO
INTERSTITIAL MONITORING: NO
RECONCILIATION (SIR) TANK LEAK DETECTION: NONE
STATISTICAL INVENTORY RECONCILIATION (SIR) REPORT DATE: NONE
RELEASE DETECTION OTHER: NO

OVERFILL PROTECTION

NONE INDICATED: NONE
BALL FLOAT: NONE
AUTOMATIC SHUTOFF DEVICE: NONE
TYPE UNKNOWN: NONE
ALARM: NONE

PIPING RELEASE DETECTION MEASURES

AUTOMATIC LINE LEAK DETECTORS: NO
ANNUAL TIGHTNESS TEST: NO
VAPOR MONITORING: NO
GROUND WATER MONITORING: NO
INTERSTITIAL MONITORING: NO
THREE-YEAR TIGHTNESS TEST: NO
EUROPEAN SUCTION: YES

OTHER RELEASE DETECTION: **NO**

STATISTICAL INVENTORY RECONCILIATION (SIR): **NONE**

INTEREST TYPE:

TANK SITE

LAST UPDATE:

11/10/2014 08:17:05

WEBSITE LINK:

http://cf.pca.state.mn.us/programs/lust_pTanks2.cfm?site=4433&pg=TS

Back to Report Summary

MAP ID# 4

Distance from Property: 0.23 mi. (1,214 ft.) N
Elevation: 763 ft. (Higher than TP)

FACILITY INFORMATION

Note: Data is current as of December 30th, 2016
GEOSEARCH ID: 63734UAST
AGENCY INTEREST(AI) ID: 63734
AGENCY INTEREST(AI) NAME: CANTERBURY PARK
ADDRESS: 1100 CANTERBURY RD
SHAKOPEE, MN 55379
OWNER: CANTERBURY PARK HOLDING CORP
OWNER ADDRESS: 1100 CANTERBURY RD
SHAKOPEE, MN 55379

FACILITY DETAILS

ITEM ID(ID for an individual tank. One individual tank can have zero to many compartments.): 63734-EQUI0000000001
ITEM COMPARTMENT(Represents a specific compartment of a specific tank.): 63734-EQUI0000000001-1
TANK SITE ID: TS4447
COMPARTMENT NUMBER WITHIN THE TANK: 1
CAPACITY OF THIS COMPARTMENT IN GALLONS: 4000
SUBSTANCE IN THE TANK: GASOLINE
TANK WALL TYPE: SINGLE
TANK MATERIAL: OTHER
TANK INSTALL DATE: 4/6/1985
STATUS CHANGE DATE: 11/5/1998
TANK STATUS: REMOVED
TANKS CONTRACTOR: PUMP & METER SERVICE INC

ITEM ID(ID for an individual tank. One individual tank can have zero to many compartments.): 63734-EQUI0000000002
ITEM COMPARTMENT(Represents a specific compartment of a specific tank.): 63734-EQUI0000000002-1
TANK SITE ID: TS4447
COMPARTMENT NUMBER WITHIN THE TANK: 1
CAPACITY OF THIS COMPARTMENT IN GALLONS: 550
SUBSTANCE IN THE TANK: DIESEL
TANK WALL TYPE: SINGLE
TANK MATERIAL: OTHER
TANK INSTALL DATE: 4/6/1985
STATUS CHANGE DATE: 9/24/2015
TANK STATUS: REMOVED
TANKS CONTRACTOR: PUMP & METER SERVICE INC

ITEM ID(ID for an individual tank. One individual tank can have zero to many compartments.): 63734-EQUI0000000003
ITEM COMPARTMENT(Represents a specific compartment of a specific tank.): 63734-EQUI0000000003-1
TANK SITE ID: TS4447
COMPARTMENT NUMBER WITHIN THE TANK: 1
CAPACITY OF THIS COMPARTMENT IN GALLONS: 6000

SUBSTANCE IN THE TANK: **DIESEL**
TANK WALL TYPE: **SINGLE**
TANK MATERIAL: **OTHER**
TANK INSTALL DATE: **4/6/1985**
STATUS CHANGE DATE: **11/5/1998**
TANK STATUS: **REMOVED**
TANKS CONTRACTOR: **PUMP & METER SERVICE INC**

Back to Report Summary

MAP ID# 4

Distance from Property: 0.23 mi. (1,214 ft.) N
Elevation: 763 ft. (Higher than TP)

FACILITY INFORMATION

Note: Data is current as of October 1st, 2015
GEOSEARCH ID: 4447
NAME: CANTERBURY PARK
ADDRESS: 1100 COUNTY ROAD 83
SHAKOPEE, MN 55379
SCOTT COUNTY

TANK INFORMATION

TANK NUMBER: 685
REGISTRATION DATE: 12/13/1985 00:00:00
TANK CAPACITY: 6000
TANK STATUS: THE TANK HAS BEEN REMOVED.
STORED PRODUCT: DIESEL
ABOVE OR UNDERGROUND: UNDERGROUND

TANK & PIPE CONSTRUCTION

TANK MATERIAL TYPE: THE TANK IS MADE OF A NONLISTED MATERIAL.
TANK CORROSION PROTECTION: THE PIPING HAS ANODE CATHODIC PROTECTION.
PIPE CORROSION PROTECTION: THE PIPING HAS NO CATHODIC PROTECTION.
PIPE MATERIAL TYPE: PIPING MATERIAL IS GALVANIZED STEEL
SECONDARY CONTAINMENT TANK TYPE: NOT REPORTED
SECONDARY CONTAINMENT PIPE TYPE: NOT REPORTED
TANK DISPENSER TYPE: THE TANK HAS A SUBMERSIBLE TYPE DISPENSER.
PIPE SPILL CONTAINMENT: NOT REPORTED

TANK RELEASE DETECTION MEASURES

DAILY STICKING: YES
TIGHTNESS TEST: YES
MANUAL TANK GAUGING: NO
AUTOMATIC TANK GAUGING: NO
SOIL VAPOR MONITORING: NO
GROUNDWATER MONITORING: NO
INTERSTITIAL MONITORING: NO
RECONCILIATION (SIR) TANK LEAK DETECTION: NONE
STATISTICAL INVENTORY RECONCILIATION (SIR) REPORT DATE: NONE
RELEASE DETECTION OTHER: NO

OVERFILL PROTECTION

NONE INDICATED: NONE
BALL FLOAT: NONE
AUTOMATIC SHUTOFF DEVICE: NONE
TYPE UNKNOWN: NONE
ALARM: NONE

PIPING RELEASE DETECTION MEASURES

AUTOMATIC LINE LEAK DETECTORS: NO
ANNUAL TIGHTNESS TEST: NO
VAPOR MONITORING: NO
GROUND WATER MONITORING: NO
INTERSTITIAL MONITORING: NO
THREE-YEAR TIGHTNESS TEST: NO
EUROPEAN SUCTION: NO

OTHER RELEASE DETECTION: **NO**
STATISTICAL INVENTORY RECONCILIATION (SIR): **NONE**

TANK INFORMATION

TANK NUMBER: **686**
REGISTRATION DATE: **12/13/1985 00:00:00**
TANK CAPACITY: **4000**
TANK STATUS: **THE TANK HAS BEEN REMOVED.**
STORED PRODUCT: **GASOLINE**
ABOVE OR UNDERGROUND: **UNDERGROUND**

TANK & PIPE CONSTRUCTION

TANK MATERIAL TYPE: **THE TANK IS MADE OF A NONLISTED MATERIAL.**
TANK CORROSION PROTECTION: **THE PIPING HAS ANODE CATHODIC PROTECTION.**
PIPE CORROSION PROTECTION: **THE PIPING HAS NO CATHODIC PROTECTION.**
PIPE MATERIAL TYPE: **PIPING MATERIAL IS GALVANIZED STEEL**
SECONDARY CONTAINMENT TANK TYPE: **NOT REPORTED**
SECONDARY CONTAINMENT PIPE TYPE: **NOT REPORTED**
TANK DISPENSER TYPE: **THE TANK HAS A SUBMERSIBLE TYPE DISPENSER.**
PIPE SPILL CONTAINMENT: **NOT REPORTED**

TANK RELEASE DETECTION MEASURES

DAILY STICKING: **YES**
TIGHTNESS TEST: **YES**
MANUAL TANK GAUGING: **NO**
AUTOMATIC TANK GAUGING: **NO**
SOIL VAPOR MONITORING: **NO**
GROUNDWATER MONITORING: **NO**
INTERSTITIAL MONITORING: **NO**

OVERFILL PROTECTION

NONE INDICATED: **NONE**
BALL FLOAT: **NONE**
AUTOMATIC SHUTOFF DEVICE: **NONE**
TYPE UNKNOWN: **NONE**
ALARM: **NONE**

RECONCILIATION (SIR) TANK LEAK DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR) REPORT DATE: **NONE**
RELEASE DETECTION OTHER: **NO**

PIPING RELEASE DETECTION MEASURES

AUTOMATIC LINE LEAK DETECTORS: **NO**
ANNUAL TIGHTNESS TEST: **NO**
VAPOR MONITORING: **NO**
GROUND WATER MONITORING: **NO**
INTERSTITIAL MONITORING: **NO**
THREE-YEAR TIGHTNESS TEST: **NO**
EUROPEAN SUCTION: **NO**
OTHER RELEASE DETECTION: **NO**
STATISTICAL INVENTORY RECONCILIATION (SIR): **NONE**

TANK INFORMATION

TANK NUMBER: **687**
REGISTRATION DATE: **12/13/1985 00:00:00**
TANK CAPACITY: **550**

TANK STATUS: **THE TANK IS OUT OF SERVICE, NOT FORMALLY TEMPORARILY CLOSED.**
STORED PRODUCT: **DIESEL**
ABOVE OR UNDERGROUND: **UNDERGROUND**

TANK & PIPE CONSTRUCTION

TANK MATERIAL TYPE: **THE TANK IS MADE OF A NONLISTED MATERIAL.**
TANK CORROSION PROTECTION: **THE PIPING HAS ANODE CATHODIC PROTECTION.**
PIPE CORROSION PROTECTION: **THE PIPING HAS NO CATHODIC PROTECTION.**
PIPE MATERIAL TYPE: **PIPING MATERIAL IS GALVANIZED STEEL**
SECONDARY CONTAINMENT TANK TYPE: **NOT REPORTED**
SECONDARY CONTAINMENT PIPE TYPE: **NOT REPORTED**
TANK DISPENSER TYPE: **THE TANK HAS A SUBMERSIBLE TYPE DISPENSER.**
PIPE SPILL CONTAINMENT: **NOT REPORTED**

TANK RELEASE DETECTION MEASURES

DAILY STICKING: **YES**
TIGHTNESS TEST: **YES**
MANUAL TANK GAUGING: **NO**
AUTOMATIC TANK GAUGING: **NO**
SOIL VAPOR MONITORING: **NO**
GROUNDWATER MONITORING: **NO**
INTERSTITIAL MONITORING: **NO**
RECONCILIATION (SIR) TANK LEAK DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR) REPORT DATE: **NONE**
RELEASE DETECTION OTHER: **NO**

OVERFILL PROTECTION

NONE INDICATED: **NONE**
BALL FLOAT: **NONE**
AUTOMATIC SHUTOFF DEVICE: **NONE**
TYPE UNKNOWN: **NONE**
ALARM: **NONE**

PIPING RELEASE DETECTION MEASURES

AUTOMATIC LINE LEAK DETECTORS: **NO**
ANNUAL TIGHTNESS TEST: **NO**
VAPOR MONITORING: **NO**
GROUND WATER MONITORING: **NO**
INTERSTITIAL MONITORING: **NO**
THREE-YEAR TIGHTNESS TEST: **NO**
EUROPEAN SUCTION: **NO**
OTHER RELEASE DETECTION: **NO**
STATISTICAL INVENTORY RECONCILIATION (SIR): **NONE**

INTEREST TYPE:
TANK SITE

LAST UPDATE:
11/10/2014 08:17:05

WEBSITE LINK:
http://cf.pca.state.mn.us/programs/lust_pTanks2.cfm?site=4447&pg=TS

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Concentrated Animal Feeding Operations (CAFO)

MAP ID# 4

Distance from Property: 0.23 mi. (1,214 ft.) N
Elevation: 763 ft. (Higher than TP)

FACILITY INFORMATION

PREFERRED ID: 139-61921
FEEDLOT NAME: CANTERBURY PARK
ADDRESS: 1100 CANTERBURY RD
SHAKOPEE, MN 55379
COUNTY: SCOTT
REGISTRATION DATE: 9/15/2015
OWNER CONTACT: NOT REPORTED NOT REPORTED
OWNER ORGANIZATION: CANTERBURY PARK HOLDING CORP
OWNER TITLE: NOT REPORTED
OWNER MAILING ADDRESS: 1100 CANTERBURY RD
SHAKOPEE, MN 55379
OWNER PHONE: NOT REPORTED

FACILITY DETAILS

EXISTING PERMIT: YES
PERMIT NUMBER: MNG440325
PERMIT EXPIRATION: NO
MAILING ADDRESS: 1100 CANTERBURY RD
SHAKOPEE, MN 55379
CONTACT PERSON: MARK ERICKSON
CONTACT ADDRESS: 1100 CANTERBURY RD
SHAKOPEE, MN 55379
CONTACT PHONE: 9524457223
IS THIS AN OPEN LOT?: NO
ARE THERE CONFINEMENT BUILDINGS?: YES
IS THERE A PASTURE?: NO
IS THERE A MANURE STORAGE BASIN?: YES
IS THERE A MANURE STOCKPILE?: NO
IS THERE SURFACE WATER WITHIN 1000FT?: YES
IF SO, IS IT A LAKE?: NO
IF SO, IS IT A RIVER OR STREAM?: NO
IF SO, IS IT A WETLAND?: NO
IF SO, IS IT A DRAINAGE DITCH?: YES
IF SO, IS IT A TILE INTAKE?: NO
IF SO, IS IT OTHER SURFACE WATER?: YES
IS IT WITHIN SHORELAND?: NO
IS SHORELAND WITHIN 1000FT?: NO
HOLDING AREA DISTANCE?: 200
STORAGE AREA DISTANCE?: 1200
TOTAL ANIMAL UNITS: 1800
IS THIS A CONCENTRATED ANIMAL FEEDING OPERATION?: YES
FEEDLOT PERMIT NUMBER: MNG440325

Concentrated Animal Feeding Operations (CAFO)

ORGANIZATION ID: **57252964**
SITE ID: **84833**
PROGRAM INTEREST ID: **149434**
REGISTRATION ID: **3**
REGISTRATION STATUS: **COMPLETE**
NUMBER OF OWNERS: **0**
BASIN NAME: **MINNESOTA RIVER**
MAJOR WATERSHED NAME: **LOWER MINNESOTA RIVER**
MINOR WATERSHED NAME: **MINNESOTA R**

Back to Report Summary

MAP ID# 5

Distance from Property: 0.25 mi. (1,320 ft.) E
Elevation: 755 ft. (Higher than TP)

FACILITY INFORMATION

Note: Data is current as of October 1st, 2015
GEOSEARCH ID: 55911
NAME: SEAGATE TECHNOLOGY
ADDRESS: 1280 DISC DR
SHAKOPEE, MN 55379
SCOTT COUNTY

TANK INFORMATION

TANK NUMBER: 1001
REGISTRATION DATE: 07/28/1999 00:00:00
TANK CAPACITY: 500
TANK STATUS: THE TANK IS ACTIVE AND BEING USED.
STORED PRODUCT: DIESEL
ABOVE OR UNDERGROUND: ABOVEGROUND

TANK & PIPE CONSTRUCTION

TANK MATERIAL TYPE: THE TANK IS MADE OF METAL.
TANK CORROSION PROTECTION: NOT REPORTED
PIPE CORROSION PROTECTION: NOT REPORTED
PIPE MATERIAL TYPE: PIPING MATERIAL IS STEEL OR IRON.
SECONDARY CONTAINMENT TANK TYPE: NOT REPORTED
SECONDARY CONTAINMENT PIPE TYPE: NOT REPORTED
TANK DISPENSER TYPE: NOT REPORTED
PIPE SPILL CONTAINMENT: NOT REPORTED

TANK RELEASE DETECTION MEASURES

DAILY STICKING: NONE
TIGHTNESS TEST: NONE
MANUAL TANK GAUGING: NONE
AUTOMATIC TANK GAUGING: NONE
SOIL VAPOR MONITORING: NONE
GROUNDWATER MONITORING: NONE
INTERSTITIAL MONITORING: NONE
RECONCILIATION (SIR) TANK LEAK DETECTION: NONE
STATISTICAL INVENTORY RECONCILIATION (SIR) REPORT DATE: NONE
RELEASE DETECTION OTHER: NONE

OVERFILL PROTECTION

NONE INDICATED: NONE
BALL FLOAT: NONE
AUTOMATIC SHUTOFF DEVICE: NONE
TYPE UNKNOWN: NONE
ALARM: NONE

PIPING RELEASE DETECTION MEASURES

AUTOMATIC LINE LEAK DETECTORS: NONE
ANNUAL TIGHTNESS TEST: NONE
VAPOR MONITORING: NONE
GROUND WATER MONITORING: NONE
INTERSTITIAL MONITORING: NONE
THREE-YEAR TIGHTNESS TEST: NONE
EUROPEAN SUCTION: NONE

OTHER RELEASE DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR): **NONE**

TANK INFORMATION

TANK NUMBER: **1002**
REGISTRATION DATE: **07/28/1999 00:00:00**
TANK CAPACITY: **500**
TANK STATUS: **THE TANK IS ACTIVE AND BEING USED.**
STORED PRODUCT: **CHEMICAL ACIDIC**
ABOVE OR UNDERGROUND: **ABOVEGROUND**

TANK & PIPE CONSTRUCTION

TANK MATERIAL TYPE: **THE TANK IS MADE OF PVC/FIBERGLASS/SYNTHETIC/RUBBER.**
TANK CORROSION PROTECTION: **NOT REPORTED**
PIPE CORROSION PROTECTION: **NOT REPORTED**
PIPE MATERIAL TYPE: **PIPING MATERIAL IS STEEL OR IRON.**
SECONDARY CONTAINMENT TANK TYPE: **NOT REPORTED**
SECONDARY CONTAINMENT PIPE TYPE: **NOT REPORTED**
TANK DISPENSER TYPE: **NOT REPORTED**
PIPE SPILL CONTAINMENT: **NOT REPORTED**

TANK RELEASE DETECTION MEASURES

DAILY STICKING: **NONE**
TIGHTNESS TEST: **NONE**
MANUAL TANK GAUGING: **NONE**
AUTOMATIC TANK GAUGING: **NONE**
SOIL VAPOR MONITORING: **NONE**
GROUNDWATER MONITORING: **NONE**
INTERSTITIAL MONITORING: **NONE**

OVERFILL PROTECTION

NONE INDICATED: **NONE**
BALL FLOAT: **NONE**
AUTOMATIC SHUTOFF DEVICE: **NONE**
TYPE UNKNOWN: **NONE**
ALARM: **NONE**

RECONCILIATION (SIR) TANK LEAK DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR) REPORT DATE: **NONE**
RELEASE DETECTION OTHER: **NONE**

PIPING RELEASE DETECTION MEASURES

AUTOMATIC LINE LEAK DETECTORS: **NONE**
ANNUAL TIGHTNESS TEST: **NONE**
VAPOR MONITORING: **NONE**
GROUND WATER MONITORING: **NONE**
INTERSTITIAL MONITORING: **NONE**
THREE-YEAR TIGHTNESS TEST: **NONE**
EUROPEAN SUCTION: **NONE**
OTHER RELEASE DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR): **NONE**

TANK INFORMATION

TANK NUMBER: **1003**
REGISTRATION DATE: **07/28/1999 00:00:00**
TANK CAPACITY: **300**

TANK STATUS: **THE TANK IS ACTIVE AND BEING USED.**
STORED PRODUCT: **OTHER SUBSTANCE**
ABOVE OR UNDERGROUND: **ABOVEGROUND**

TANK & PIPE CONSTRUCTION

TANK MATERIAL TYPE: **THE TANK IS MADE OF PVC/FIBERGLASS/SYNTHETIC/RUBBER.**
TANK CORROSION PROTECTION: **NOT REPORTED**
PIPE CORROSION PROTECTION: **NOT REPORTED**
PIPE MATERIAL TYPE: **PIPING MATERIAL IS STEEL OR IRON.**
SECONDARY CONTAINMENT TANK TYPE: **NOT REPORTED**
SECONDARY CONTAINMENT PIPE TYPE: **NOT REPORTED**
TANK DISPENSER TYPE: **NOT REPORTED**
PIPE SPILL CONTAINMENT: **NOT REPORTED**

TANK RELEASE DETECTION MEASURES

DAILY STICKING: **NONE**
TIGHTNESS TEST: **NONE**
MANUAL TANK GAUGING: **NONE**
AUTOMATIC TANK GAUGING: **NONE**
SOIL VAPOR MONITORING: **NONE**
GROUNDWATER MONITORING: **NONE**
INTERSTITIAL MONITORING: **NONE**

OVERFILL PROTECTION

NONE INDICATED: **NONE**
BALL FLOAT: **NONE**
AUTOMATIC SHUTOFF DEVICE: **NONE**
TYPE UNKNOWN: **NONE**
ALARM: **NONE**

RECONCILIATION (SIR) TANK LEAK DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR) REPORT DATE: **NONE**
RELEASE DETECTION OTHER: **NONE**

PIPING RELEASE DETECTION MEASURES

AUTOMATIC LINE LEAK DETECTORS: **NONE**
ANNUAL TIGHTNESS TEST: **NONE**
VAPOR MONITORING: **NONE**
GROUND WATER MONITORING: **NONE**
INTERSTITIAL MONITORING: **NONE**
THREE-YEAR TIGHTNESS TEST: **NONE**
EUROPEAN SUCTION: **NONE**
OTHER RELEASE DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR): **NONE**

TANK INFORMATION

TANK NUMBER: **1004**
REGISTRATION DATE: **07/28/1999 00:00:00**
TANK CAPACITY: **3000**
TANK STATUS: **THE TANK IS ACTIVE AND BEING USED.**
STORED PRODUCT: **OTHER SUBSTANCE**
ABOVE OR UNDERGROUND: **ABOVEGROUND**

TANK & PIPE CONSTRUCTION

TANK MATERIAL TYPE: **THE TANK IS MADE OF PVC/FIBERGLASS/SYNTHETIC/RUBBER.**
TANK CORROSION PROTECTION: **NOT REPORTED**
PIPE CORROSION PROTECTION: **NOT REPORTED**

PIPE MATERIAL TYPE: **PIPING MATERIAL IS STEEL OR IRON.**
SECONDARY CONTAINMENT TANK TYPE: **NOT REPORTED**
SECONDARY CONTAINMENT PIPE TYPE: **NOT REPORTED**
TANK DISPENSER TYPE: **NOT REPORTED**
PIPE SPILL CONTAINMENT: **NOT REPORTED**

TANK RELEASE DETECTION MEASURES

DAILY STICKING: **NONE**
TIGHTNESS TEST: **NONE**
MANUAL TANK GAUGING: **NONE**
AUTOMATIC TANK GAUGING: **NONE**
SOIL VAPOR MONITORING: **NONE**
GROUNDWATER MONITORING: **NONE**
INTERSTITIAL MONITORING: **NONE**
RECONCILIATION (SIR) TANK LEAK DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR) REPORT DATE: **NONE**
RELEASE DETECTION OTHER: **NONE**

OVERFILL PROTECTION

NONE INDICATED: **NONE**
BALL FLOAT: **NONE**
AUTOMATIC SHUTOFF DEVICE: **NONE**
TYPE UNKNOWN: **NONE**
ALARM: **NONE**

PIPING RELEASE DETECTION MEASURES

AUTOMATIC LINE LEAK DETECTORS: **NONE**
ANNUAL TIGHTNESS TEST: **NONE**
VAPOR MONITORING: **NONE**
GROUND WATER MONITORING: **NONE**
INTERSTITIAL MONITORING: **NONE**
THREE-YEAR TIGHTNESS TEST: **NONE**
EUROPEAN SUCTION: **NONE**
OTHER RELEASE DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR): **NONE**

TANK INFORMATION

TANK NUMBER: **1005**
REGISTRATION DATE: **07/28/1999 00:00:00**
TANK CAPACITY: **2000**
TANK STATUS: **THE TANK IS ACTIVE AND BEING USED.**
STORED PRODUCT: **OTHER SUBSTANCE**
ABOVE OR UNDERGROUND: **ABOVEGROUND**

TANK & PIPE CONSTRUCTION

TANK MATERIAL TYPE: **THE TANK IS MADE OF PVC/FIBERGLASS/SYNTHETIC/RUBBER.**
TANK CORROSION PROTECTION: **NOT REPORTED**
PIPE CORROSION PROTECTION: **NOT REPORTED**
PIPE MATERIAL TYPE: **PIPING MATERIAL IS STEEL OR IRON.**
SECONDARY CONTAINMENT TANK TYPE: **NOT REPORTED**
SECONDARY CONTAINMENT PIPE TYPE: **NOT REPORTED**
TANK DISPENSER TYPE: **NOT REPORTED**
PIPE SPILL CONTAINMENT: **NOT REPORTED**

TANK RELEASE DETECTION MEASURES

DAILY STICKING: **NONE**

OVERFILL PROTECTION

NONE INDICATED: **NONE**

TIGHTNESS TEST: **NONE**
MANUAL TANK GAUGING: **NONE**
AUTOMATIC TANK GAUGING: **NONE**
SOIL VAPOR MONITORING: **NONE**
GROUNDWATER MONITORING: **NONE**
INTERSTITIAL MONITORING: **NONE**
BALL FLOAT: **NONE**
AUTOMATIC SHUTOFF DEVICE: **NONE**
TYPE UNKNOWN: **NONE**
ALARM: **NONE**

RECONCILIATION (SIR) TANK LEAK DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR) REPORT DATE: **NONE**
RELEASE DETECTION OTHER: **NONE**

PIPING RELEASE DETECTION MEASURES

AUTOMATIC LINE LEAK DETECTORS: **NONE**
ANNUAL TIGHTNESS TEST: **NONE**
VAPOR MONITORING: **NONE**
GROUND WATER MONITORING: **NONE**
INTERSTITIAL MONITORING: **NONE**
THREE-YEAR TIGHTNESS TEST: **NONE**
EUROPEAN SUCTION: **NONE**
OTHER RELEASE DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR): **NONE**

TANK INFORMATION

TANK NUMBER: **1006**
REGISTRATION DATE: **07/28/1999 00:00:00**
TANK CAPACITY: **210**
TANK STATUS: **THE TANK IS ACTIVE AND BEING USED.**
STORED PRODUCT: **OTHER SUBSTANCE**
ABOVE OR UNDERGROUND: **ABOVEGROUND**

TANK & PIPE CONSTRUCTION

TANK MATERIAL TYPE: **THE TANK IS MADE OF METAL.**
TANK CORROSION PROTECTION: **NOT REPORTED**
PIPE CORROSION PROTECTION: **NOT REPORTED**
PIPE MATERIAL TYPE: **PIPING MATERIAL IS STEEL OR IRON.**
SECONDARY CONTAINMENT TANK TYPE: **NOT REPORTED**
SECONDARY CONTAINMENT PIPE TYPE: **NOT REPORTED**
TANK DISPENSER TYPE: **NOT REPORTED**
PIPE SPILL CONTAINMENT: **NOT REPORTED**

TANK RELEASE DETECTION MEASURES

DAILY STICKING: **NONE**
TIGHTNESS TEST: **NONE**
MANUAL TANK GAUGING: **NONE**
AUTOMATIC TANK GAUGING: **NONE**
SOIL VAPOR MONITORING: **NONE**
GROUNDWATER MONITORING: **NONE**
INTERSTITIAL MONITORING: **NONE**

OVERFILL PROTECTION

NONE INDICATED: **NONE**
BALL FLOAT: **NONE**
AUTOMATIC SHUTOFF DEVICE: **NONE**
TYPE UNKNOWN: **NONE**
ALARM: **NONE**

RECONCILIATION (SIR) TANK LEAK DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR) REPORT DATE: **NONE**
RELEASE DETECTION OTHER: **NONE**

PIPING RELEASE DETECTION MEASURES

AUTOMATIC LINE LEAK DETECTORS: **NONE**
ANNUAL TIGHTNESS TEST: **NONE**
VAPOR MONITORING: **NONE**
GROUND WATER MONITORING: **NONE**
INTERSTITIAL MONITORING: **NONE**
THREE-YEAR TIGHTNESS TEST: **NONE**
EUROPEAN SUCTION: **NONE**
OTHER RELEASE DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR): **NONE**

TANK INFORMATION

TANK NUMBER: **1007**
REGISTRATION DATE: **07/28/1999 00:00:00**
TANK CAPACITY: **210**
TANK STATUS: **THE TANK IS ACTIVE AND BEING USED.**
STORED PRODUCT: **OTHER SUBSTANCE**
ABOVE OR UNDERGROUND: **ABOVEGROUND**

TANK & PIPE CONSTRUCTION

TANK MATERIAL TYPE: **THE TANK IS MADE OF METAL.**
TANK CORROSION PROTECTION: **NOT REPORTED**
PIPE CORROSION PROTECTION: **NOT REPORTED**
PIPE MATERIAL TYPE: **PIPING MATERIAL IS STEEL OR IRON.**
SECONDARY CONTAINMENT TANK TYPE: **NOT REPORTED**
SECONDARY CONTAINMENT PIPE TYPE: **NOT REPORTED**
TANK DISPENSER TYPE: **NOT REPORTED**
PIPE SPILL CONTAINMENT: **NOT REPORTED**

TANK RELEASE DETECTION MEASURES

DAILY STICKING: **NONE**
TIGHTNESS TEST: **NONE**
MANUAL TANK GAUGING: **NONE**
AUTOMATIC TANK GAUGING: **NONE**
SOIL VAPOR MONITORING: **NONE**
GROUNDWATER MONITORING: **NONE**
INTERSTITIAL MONITORING: **NONE**

OVERFILL PROTECTION

NONE INDICATED: **NONE**
BALL FLOAT: **NONE**
AUTOMATIC SHUTOFF DEVICE: **NONE**
TYPE UNKNOWN: **NONE**
ALARM: **NONE**

RECONCILIATION (SIR) TANK LEAK DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR) REPORT DATE: **NONE**
RELEASE DETECTION OTHER: **NONE**

PIPING RELEASE DETECTION MEASURES

AUTOMATIC LINE LEAK DETECTORS: **NONE**
ANNUAL TIGHTNESS TEST: **NONE**
VAPOR MONITORING: **NONE**

Registered Storage Tanks (UAST)

GROUND WATER MONITORING: **NONE**
INTERSTITIAL MONITORING: **NONE**
THREE-YEAR TIGHTNESS TEST: **NONE**
EUROPEAN SUCTION: **NONE**
OTHER RELEASE DETECTION: **NONE**
STATISTICAL INVENTORY RECONCILIATION (SIR): **NONE**

INTEREST TYPE:
DELETED TANK SITE

LAST UPDATE:
03/24/2006 12:22:11

WEBSITE LINK:
http://cf.pca.state.mn.us/programs/lust_pTanks2.cfm?site=55911&pg=TS

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Registered Leaking Storage Tanks (LUAST)

MAP ID# 6

Distance from Property: 0.5 mi. (2,640 ft.) N
Elevation: 738 ft. (Lower than TP)

SITE INFORMATION

GEOSEARCH ID: 19518LUAST
LEAK ID: 19518
NAME: CERTAINTEED CORPORATION
ADDRESS: 3303 E 4TH AVE
SHAKOPEE, MN 55379
RELEASE DISCOVERED: 11/01/2011 00:00:00
RELEASE REPORT: 11/01/2011 00:00:00
CONDITIONAL CLOSURE DATE: NOT REPORTED
COMPLETE SITE CLOSURE DATE: 05/23/2012 00:00:00
COMTAMINATED SOILS REMAINING: UNKNOWN
OFFSITE COMTAMINATION: UNKNOWN
PRODUCT RELEASED: DIESEL
WEBSITE LINK:
http://cf.pca.state.mn.us/programs/lust_pResults2.cfm?leak=19518&pg=LS

GROUND WATER

DRINKING WATER CONTAMINATION: NOT REPORTED
FREE PRODUCT OBSERVED: NOT REPORTED
FREE PRODUCT THICKNESS: NOT REPORTED
GROUNDWATER CONTAMINATION: NO

CLEANUP ACTIONS

- NO CLEANUP ACTIONS REPORTED

INTEREST TYPE: LEAK SITE

LAST UPDATE: 11/10/2014 08:17:06

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MPCA Remediation Sites (REMSITES)

MAP ID# 6

Distance from Property: 0.5 mi. (2,640 ft.) N
Elevation: 738 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: 188294
AGENCY INTEREST(AI) ID: 188294
ITEM ID: 188294-AREA0000000001
AGENCY INTEREST(AI) NAME: CERTAINTEED CORPORATION
ADDRESS: 3303 E 4TH AVE
SHAKOPEE, MN 55379
OWNER: CERTAINTEED CORP
OWNER ADDRESS: 3303 E 4TH AVE
SHAKOPEE, MN 55379

FACILITY DETAILS

TYPE OF REMEDIATION SITE: LEAK SITE
SITE ID: LS0019518
SITE NAME: CERTAINTEED CORPORATION
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: JIM MCCANN
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: 11/1/2011
RELEASE REPORTED: 11/1/2011
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 5/23/2012

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MPCA Remediation Sites (REMSITES)

MAP ID# 6

Distance from Property: 0.5 mi. (2,640 ft.) N
Elevation: 738 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: 188
AGENCY INTEREST(AI) ID: 188
ITEM ID: 188-AREA0000000003
AGENCY INTEREST(AI) NAME: CERTAINTEED CORP
ADDRESS: 3303 E 4TH AVE
SHAKOPEE, MN 55379
OWNER: CERTAINTEED CORP
OWNER ADDRESS: 3303 E 4TH AVE
SHAKOPEE, MN 55379

FACILITY DETAILS

TYPE OF REMEDIATION SITE: SITE ASSESSMENT SITE
SITE ID: SA0001269
SITE NAME: CERTAIN TEED
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: NOT REPORTED

TYPE OF REMEDIATION SITE: INTEGRATED REMEDIATION
SITE ID: LS0012248
SITE NAME: CERTAINTEED CORP
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: MARK TOSO
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: NOT REPORTED

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State Assessment Sites (SAS)

MAP ID# 6

Distance from Property: 0.5 mi. (2,640 ft.) N
Elevation: 738 ft. (Lower than TP)

FACILITY INFORMATION

SITE ID: 2088
SITE NAME: CERTAINTEED CORP
ADDRESS: 3303 E 4TH AVE
SHAKOPEE, MN 55379 SCOTT

FACILITY DETAILS

ID: SA1269
WATERSHED: LOWER MINNESOTA RIVER
OWNER NAME: CERTAINTEED CORP
TYPE: STATE ASSESSMENT SITE
ACTIVE?: NO
SITE URL: http://cf.pca.state.mn.us/wimn/siteInfo_print.cfm?siteid=2088
INDUSTRY CLASSIFICATION: PAPER (EXCEPT NEWSPRINT) MILLS; ASPHALT SHINGLE AND COATING MATERIALS MANUFACTURING

Back to Report Summary

Registered Leaking Storage Tanks (LUAST)

MAP ID# 6

Distance from Property: 0.5 mi. (2,640 ft.) N
Elevation: 738 ft. (Lower than TP)

SITE INFORMATION

GEOSEARCH ID: 12248LUAST
LEAK ID: 12248
NAME: CERTAINTEED CORP
ADDRESS: 3303 4TH AVE E
SHAKOPEE, MN 55379
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORT: NOT REPORTED
CONDITIONAL CLOSURE DATE: NOT REPORTED
COMPLETE SITE CLOSURE DATE: 10/02/2003 00:00:00
COMTAMINATED SOILS REMAINING: NO
OFFSITE COMTAMINATION: NO
PRODUCT RELEASED: FUEL OIL 4 & 6
WEBSITE LINK:
http://cf.pca.state.mn.us/programs/lust_pResults2.cfm?leak=12248&pg=LS

GROUND WATER

DRINKING WATER CONTAMINATION: NOT REPORTED
FREE PRODUCT OBSERVED: NOT REPORTED
FREE PRODUCT THICKNESS: NOT REPORTED
GROUNDWATER CONTAMINATION: NO

CLEANUP ACTIONS

- NO CLEANUP ACTIONS REPORTED

INTEREST TYPE:	LAST UPDATE:
LEAK SITE	03/19/2013 13:26:55
DELETED LEAK SITE	12/01/2006 07:00:40

Back to Report Summary

MPCA Remediation Sites (REMSITES)

MAP ID# 7

Distance from Property: 0.56 mi. (2,957 ft.) N
Elevation: 737 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: 196759
AGENCY INTEREST(AI) ID: 196759
ITEM ID: 196759-AREA0000000001
AGENCY INTEREST(AI) NAME: OWENS ILLINOIS SPILL
ADDRESS: SEE LOCATION DESCRIPTION
SHAKOPEE, MN 55379
OWNER: UNKNOWN
OWNER ADDRESS: 520 LAFAYETTE RD N
SAINT PAUL, MN 55155

FACILITY DETAILS

TYPE OF REMEDIATION SITE: SITE ASSESSMENT SITE
SITE ID: SA0008725
SITE NAME: OWENS ILLINOIS SPILL
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: NOT REPORTED

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MPCA Remediation Sites (REMSITES)

MAP ID# 8

Distance from Property: 0.63 mi. (3,326 ft.) E
Elevation: 764 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: 105665
AGENCY INTEREST(AI) ID: 105665
ITEM ID: 105665-AREA0000000001
AGENCY INTEREST(AI) NAME: OASIS MARKET #525
ADDRESS: 1147 COUNTY ROAD 83
SHAKOPEE, MN 55379
OWNER: ISMAIL BILAL
OWNER ADDRESS: STREET NOT REPORTED
NOT REPORTED, NOT REPORTED

FACILITY DETAILS

TYPE OF REMEDIATION SITE: LEAK SITE
SITE ID: LS0014186
SITE NAME: OASIS MARKET
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: SARAH LARSEN
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: 4/25/2001
RELEASE REPORTED: 4/26/2001
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 4/8/2004

TYPE OF REMEDIATION SITE: LEAK SITE
SITE ID: LS0009047
SITE NAME: BROOKS SUPERETTE #42
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: A-JELIL ABDELLA
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: 12/19/1995
RELEASE REPORTED: 12/19/1995
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 8/27/1996

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MPCA Remediation Sites (REMSITES)

MAP ID# 9

Distance from Property: 0.73 mi. (3,854 ft.) E
Elevation: 757 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: 187620
AGENCY INTEREST(AI) ID: 187620
ITEM ID: 187620-AREA0000000001
AGENCY INTEREST(AI) NAME: DEAN LAKES COMMERCIAL PROPERTY
ADDRESS: 4135 DEAN LAKES BLVD
SHAKOPEE, MN 55379
OWNER: RYAN COMPANIES US INC
OWNER ADDRESS: 50 10TH ST S STE 300
MINNEAPOLIS, MN 55403

FACILITY DETAILS

TYPE OF REMEDIATION SITE: BROWNFIELD SITE
SITE ID: PB3563
SITE NAME: DEAN LAKES COMMERCIAL PROPERTY
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 1/1/2007

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MPCA Remediation Sites (REMSITES)

MAP ID# 10

Distance from Property: 0.73 mi. (3,854 ft.) NW
Elevation: 736 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: 117728
AGENCY INTEREST(AI) ID: 117728
ITEM ID: 117728-AREA0000000003
AGENCY INTEREST(AI) NAME: DRESSEN OIL CO
ADDRESS: 200 SARAZIN ST
SHAKOPEE, MN 55379
OWNER: KELLEY FUELS INC
OWNER ADDRESS: 250 SARAZIN ST
SHAKOPEE, MN 55379

FACILITY DETAILS

TYPE OF REMEDIATION SITE: BROWNFIELD SITE
SITE ID: PB3442
SITE NAME: SHAKOPEE PUBLIC UTILITIES SERVICE CENTER
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 1/1/2007

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MPCA Remediation Sites (REMSITES)

MAP ID# 11

Distance from Property: 0.78 mi. (4,118 ft.) SE
Elevation: 788 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: 192779
AGENCY INTEREST(AI) ID: 192779
ITEM ID: 192779-AREA0000000001
AGENCY INTEREST(AI) NAME: SPFR - VALLEY GREEN #3
ADDRESS: SEE LOCATION DESCRIPTION
SHAKOPEE, MN 55379
OWNER: UNKNOWN
OWNER ADDRESS: 520 LAFAYETTE RD N
SAINT PAUL, MN 55155

FACILITY DETAILS

TYPE OF REMEDIATION SITE: BROWNFIELD SITE
SITE ID: VP9242
SITE NAME: SPFR - VALLEY GREEN #3
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: 7/30/2001
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 2/10/2004

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MAP ID# 11

Distance from Property: 0.78 mi. (4,118 ft.) SE
Elevation: 788 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: 190794
AGENCY INTEREST(AI) ID: 190794
ITEM ID: 190794-AREA0000000001
AGENCY INTEREST(AI) NAME: SHAKOPEE POLICE FIRING RANGE
ADDRESS: SEE LOCATION DESCRIPTION
SHAKOPEE, MN 55379
OWNER: UNKNOWN
OWNER ADDRESS: 520 LAFAYETTE RD N
SAINT PAUL, MN 55155

FACILITY DETAILS

TYPE OF REMEDIATION SITE: BROWNFIELD SITE
SITE ID: VP9240
SITE NAME: SHAKOPEE POLICE FIRING RANGE
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: DAVID FAWCETT
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: 10/9/1997
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 5/4/2000

TYPE OF REMEDIATION SITE: BROWNFIELD SITE
SITE ID: VP9241
SITE NAME: SPFR - VALLEY GREEN #2
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: DAVID FAWCETT
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: 10/21/1997
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 5/16/2000

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MPCA Remediation Sites (REMSITES)

MAP ID# 12

Distance from Property: 0.78 mi. (4,118 ft.) NW
Elevation: 741 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: 53104
AGENCY INTEREST(AI) ID: 53104
ITEM ID: 53104-AREA0000000001
AGENCY INTEREST(AI) NAME: UNIVERSAL FOREST PRODUCTS
ADDRESS: 205 CAVANAUGH DR
SHAKOPEE, MN 55379
OWNER: UNIVERSAL FOREST PRODUCTS, INC
OWNER ADDRESS: 2801 E BELTLINE NE
GRAND RAPIDS, MI 49525

FACILITY DETAILS

TYPE OF REMEDIATION SITE: LEAK SITE
SITE ID: LS0012495
SITE NAME: UNIVERSAL FOREST PRODUCTS DISPENSER
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: HANS NEVE
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: STACEY VANPATTEN
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: 3/16/1999
RELEASE REPORTED: 3/16/1999
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 8/30/2001

TYPE OF REMEDIATION SITE: BROWNFIELD SITE
SITE ID: PB2948
SITE NAME: UNIVERSAL FOREST PRODUCTS, INC.
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 1/1/2007

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MAP ID# 13

Distance from Property: 0.82 mi. (4,330 ft.) NE
Elevation: 766 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: 104387
AGENCY INTEREST(AI) ID: 104387
ITEM ID: 104387-AREA0000000003
AGENCY INTEREST(AI) NAME: PSI HOLDINGS
ADDRESS: 800 VALLEY INDUSTRIAL CIRCLE
SHAKOPEE, MN 55379
OWNER: HERTZ CORP
OWNER ADDRESS: STREET NOT REPORTED
NOT REPORTED, NOT REPORTED

FACILITY DETAILS

TYPE OF REMEDIATION SITE: BROWNFIELD SITE
SITE ID: VP7960
SITE NAME: PSI HOLDINGS
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: 1/31/1997
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 12/15/1999

TYPE OF REMEDIATION SITE: BROWNFIELD SITE
SITE ID: VP7961
SITE NAME: PSI HOLDINGS 2
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: 5/27/1997
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 4/9/2000

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MPCA Remediation Sites (REMSITES)

MAP ID# 14

Distance from Property: 0.88 mi. (4,646 ft.) W
Elevation: 786 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: 192814
AGENCY INTEREST(AI) ID: 192814
ITEM ID: 192814-AREA0000000001
AGENCY INTEREST(AI) NAME: HUNTINGTON PARK APARTMENTS
ADDRESS: 852 MARSCHALL RD
SHAKOPEE, MN 55379
OWNER: HUNTINGTON PARK APARTMENTS
OWNER ADDRESS: 5290 VILLA WAY
EDINA, MN 55436

FACILITY DETAILS

TYPE OF REMEDIATION SITE: LEAK SITE
SITE ID: LS0017968
SITE NAME: HUNTINGTON PARK APARTMENTS
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: MIKE CONNOLLY
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: ALLEN DOTSON
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: 5/5/2010
RELEASE REPORTED: 5/5/2010
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 6/24/2011

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Superfund Site Information Listing (SF)

MAP ID# 15

Distance from Property: 0.91 mi. (4,805 ft.) NW
Elevation: 757 ft. (Higher than TP)

SITE INFORMATION

ID #: SR250
EPA ID #: NOT REPORTED
NAME: HENNEN CLEANERS (SF)
ADDRESS: 590 S MARSCHALL RD
SHAKOPEE, MN 55379
STATE PROGRAM: SF

PHYSICAL LOCATION:
NOT REPORTED

NOTES:
NOT REPORTED

SITE TYPE: DRY CLEANER
SITE IS ACTIVE: NO
HAZARDOUS RANKING SCORE (HRS): NOT REPORTED
SITE SIZE: 2 ACRES
MAJOR WATERSHED: MINNESOTA RIVER (SHAKOPEE)
LAST UPDATE: 9/17/2014

Back to Report Summary

MPCA Remediation Sites (REMSITES)

MAP ID# 15

Distance from Property: 0.91 mi. (4,805 ft.) NW
Elevation: 757 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: 105670
AGENCY INTEREST(AI) ID: 105670
ITEM ID: 105670-AREA0000000002
AGENCY INTEREST(AI) NAME: FORMER S & S MARATHON
ADDRESS: 590 S MARSCHALL RD
SHAKOPEE, MN 55379
OWNER: HSU FAMILY TRUST
OWNER ADDRESS: 2455 23RD AVE
SAN FRANCISCO, CA 94116

FACILITY DETAILS

TYPE OF REMEDIATION SITE: SUPERFUND SITE
SITE ID: SR0000250
SITE NAME: HENNEN CLEANERS (SF)
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: 11/15/2012
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: NOT REPORTED

TYPE OF REMEDIATION SITE: LEAK SITE
SITE ID: LS0018323
SITE NAME: FORMER S & S MARATHON
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: STEPHEN FRYE
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: 2/18/2011
RELEASE REPORTED: 2/21/2011
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 5/24/2012

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MPCA Remediation Sites (REMSITES)

MAP ID# 16

Distance from Property: 0.91 mi. (4,805 ft.) NE
Elevation: 735 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: 1360
AGENCY INTEREST(AI) ID: 1360
ITEM ID: 1360-AREA0000000003
AGENCY INTEREST(AI) NAME: INTERNATIONAL PAPER
ADDRESS: 3900 STATE HIGHWAY 101
SHAKOPEE, MN 55379
OWNER: INTERNATIONAL PAPER
OWNER ADDRESS: 6400 POPLAR DR
MEMPHIS, TN 38197

FACILITY DETAILS

TYPE OF REMEDIATION SITE: LEAK SITE
SITE ID: LS0003952
SITE NAME: INLAND CONTAINER CORP
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: 3/26/1991
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 5/1/1991

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MPCA Remediation Sites (REMSITES)

MAP ID# 17

Distance from Property: 0.94 mi. (4,963 ft.) NE
Elevation: 744 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: 21681
AGENCY INTEREST(AI) ID: 21681
ITEM ID: 21681-AREA0000000001
AGENCY INTEREST(AI) NAME: AIR PRODUCTS & CHEMICALS INC - SHAKOPEE
ADDRESS: 373 CANTERBURY RD
SHAKOPEE, MN 55379
OWNER: NOT REPORTED
OWNER ADDRESS: STREET NOT REPORTED
NOT REPORTED, NOT REPORTED

FACILITY DETAILS

TYPE OF REMEDIATION SITE: LEAK SITE
SITE ID: LS0015592
SITE NAME: AIR PRODUCTS AND CHEM INC OPS FACILITY
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: KATHRYN SERIER
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: 12/8/2003
RELEASE REPORTED: 12/9/2003
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 11/1/2004

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MPCA Remediation Sites (REMSITES)

MAP ID# 18

Distance from Property: 0.97 mi. (5,122 ft.) NE
Elevation: 740 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: 186409
AGENCY INTEREST(AI) ID: 186409
ITEM ID: 186409-AREA0000000001
AGENCY INTEREST(AI) NAME: MINNEGASCO METER SITE-ANCHOR GLASS
ADDRESS: 4108 VALLEY INDUSTRIAL BOULEVARD
SHAKOPEE, MN 55379
OWNER: UNKNOWN
OWNER ADDRESS: 520 LAFAYETTE RD N
SAINT PAUL, MN 55155

FACILITY DETAILS

TYPE OF REMEDIATION SITE: BROWNFIELD SITE
SITE ID: VP6901
SITE NAME: MINNEGASCO METER SITES #2
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: 10/15/1999
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 2/11/2001

TYPE OF REMEDIATION SITE: BROWNFIELD SITE
SITE ID: VP6901E
SITE NAME: MINNEGASCO METER SITES #2-ANCHOR GLASS
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: 10/15/2000
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 1/1/2001

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Superfund Site Information Listing (SF)

MAP ID# 18

Distance from Property: 0.97 mi. (5,122 ft.) NE
Elevation: 740 ft. (Lower than TP)

SITE INFORMATION

ID #: SR105
EPA ID #: MND000819391
NAME: ANCHOR GLASS CONTAINER (SF)
ADDRESS: 4108 VALLEY INDUSTRIAL BOULEVARD
SHAKOPEE, MN 55379
STATE PROGRAM: SF

SITE TYPE: OTHER MFG.
SITE IS ACTIVE: NO
HAZARDOUS RANKING SCORE (HRS): 16
SITE SIZE: 30 ACRES
MAJOR WATERSHED: MINNESOTA RIVER (SHAKOPEE)
LAST UPDATE: 12/12/2012

PHYSICAL LOCATION:
SOUTHEAST CORNER OF HWY 101 AND COUNTY ROAD 83 APPROX 1 MILE WEST OF VALLEYFAIR AND 2 MILES EAST OF SHAKOPEE.

NOTES:
NOT REPORTED

Back to Report Summary

MAP ID# 18

Distance from Property: 0.97 mi. (5,122 ft.) NE
Elevation: 740 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: 1274
AGENCY INTEREST(AI) ID: 1274
ITEM ID: 1274-AREA0000000001
AGENCY INTEREST(AI) NAME: ANCHOR GLASS CONTAINER CORP
ADDRESS: 4108 VALLEY INDUSTRIAL BLVD N
SHAKOPEE, MN 55379
OWNER: KPS CAPITAL PARTNERS LP
OWNER ADDRESS: 485 LEXINGTON AVE 31ST FLOOR
NEW YORK, NY 10017

FACILITY DETAILS

TYPE OF REMEDIATION SITE: SITE ASSESSMENT SITE
SITE ID: SA0004003
SITE NAME: ANCHOR GLASS
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: NOT REPORTED

TYPE OF REMEDIATION SITE: SUPERFUND SITE
SITE ID: SR0000105
SITE NAME: ANCHOR GLASS CONTAINER (SF)
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: NOT REPORTED
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: 10/30/1984
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): 12/30/1988
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): 9/9/2005
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 9/22/2006

TYPE OF REMEDIATION SITE: BROWNFIELD SITE
SITE ID: VP11730
SITE NAME: ANCHOR GLASS CONTAINER (VIC)

MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: **NOT REPORTED**
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: **NOT REPORTED**
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: **YES**
RELEASE DISCOVERED: **NOT REPORTED**
RELEASE REPORTED: **NOT REPORTED**
DATE THE APPLICATION / NOTIFICATION RECEIVED: **7/5/1999**
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): **NOT REPORTED**
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): **NOT REPORTED**
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): **NOT REPORTED**
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): **NOT REPORTED**
SITE CLOSURE DATE: **11/1/2000**

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MPCA Remediation Sites (REMSITES)

MAP ID# 19

Distance from Property: 0.98 mi. (5,174 ft.) NW
Elevation: 735 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: 116096
AGENCY INTEREST(AI) ID: 116096
ITEM ID: 116096-AREA0000000002
AGENCY INTEREST(AI) NAME: APPLE FORD AUTO SALES
ADDRESS: 1400 E 1ST AVE
SHAKOPEE, MN 55379
OWNER: SHAKOPEE VALLEY FORD/MNK GULBR-OLINDER
OWNER ADDRESS: STREET NOT REPORTED
NOT REPORTED, NOT REPORTED

FACILITY DETAILS

TYPE OF REMEDIATION SITE: BROWNFIELD SITE
SITE ID: LS0008304
SITE NAME: SHAKOPEE FORD
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: LAURALIN KANIA
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: NOT REPORTED
RELEASE REPORTED: NOT REPORTED
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: NOT REPORTED

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MPCA Remediation Sites (REMSITES)

MAP ID# 20

Distance from Property: 0.99 mi. (5,227 ft.) W
Elevation: 787 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: 187861
AGENCY INTEREST(AI) ID: 187861
ITEM ID: 187861-AREA0000000001
AGENCY INTEREST(AI) NAME: HUNTINGTON APARTMENTS
ADDRESS: 1245 SHAKOPEE
SHAKOPEE, MN 55379
OWNER: HUNTINGTON APARTMENTS
OWNER ADDRESS: 1245 SHAKOPEE
SHAKOPEE, MN 55379

FACILITY DETAILS

TYPE OF REMEDIATION SITE: LEAK SITE
SITE ID: LS0008730
SITE NAME: HUNTINGTON APARTMENTS
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: CHRIS ZADAK
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: 8/25/1995
RELEASE REPORTED: 8/25/1995
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 3/8/1996

Back to Report Summary

MPCA Remediation Sites (REMSITES)

MAP ID# 20

Distance from Property: 0.99 mi. (5,227 ft.) W
Elevation: 787 ft. (Higher than TP)

FACILITY INFORMATION

GEOSEARCH ID: 20559
AGENCY INTEREST(AI) ID: 20559
ITEM ID: 20559-AREA0000000001
AGENCY INTEREST(AI) NAME: HUNTINGTON PARK APTS
ADDRESS: 1245 SHAKOPEE AVE
SHAKOPEE, MN 55379
OWNER: HUNTINGTON PARK APTS
OWNER ADDRESS: 1245 SHAKOPEE AVE
SHAKOPEE, MN 55379

FACILITY DETAILS

TYPE OF REMEDIATION SITE: LEAK SITE
SITE ID: LS0009541
SITE NAME: HUNTINGTON APARTMENTS WEST TANK
MPCA HYDROGEOLOGIST OR HYDROLOGIST ASSIGNED TO THE SITE: NOT REPORTED
MPCA PROJECT MANAGER ASSIGNED TO THE SITE: JIM MCCANN
WAS THIS SITE MIGRATED FROM AN EARLIER DATABASE?: YES
RELEASE DISCOVERED: 8/25/1995
RELEASE REPORTED: 8/25/1995
DATE THE APPLICATION / NOTIFICATION RECEIVED: NOT REPORTED
DATE THIS SITE WAS LISTED ON THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELISTED FROM THE PERMANENT LIST OF PRIORITIES (THE STATE SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS LISTED ON THE NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
DATE THIS SITE WAS DELETED FROM NATIONAL PRIORITIES LIST (THE FEDERAL SUPERFUND LIST): NOT REPORTED
SITE CLOSURE DATE: 3/17/1999

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Unlocated Sites Summary

This list contains sites that could not be mapped due to limited or incomplete address information.

Database Name	Site ID#	Site Name	Address	City/State/Zip/County
UAST	105671UAST	WHEELER LUMBER	HIGHWAY 169 PO BOX 99	SHAKOPEE 55379 Scott
UAST	4430	WHEELER LUMBER	HIGHWAY 169 PO BOX 99	SHAKOPEE 55379 Scott

AIRSAFS Aerometric Information Retrieval System / Air Facility Subsystem

VERSION DATE: 10/20/14

The United States Environmental Protection Agency (EPA) modified the Aerometric Information Retrieval System (AIRS) to a database that exclusively tracks the compliance of stationary sources of air pollution with EPA regulations: the Air Facility Subsystem (AFS). Since this change in 2001, the management of the AIRS/AFS database was assigned to EPA's Office of Enforcement and Compliance Assurance.

BRS Biennial Reporting System

VERSION DATE: 12/31/11

The United States Environmental Protection Agency (EPA), in cooperation with the States, biennially collects information regarding the generation, management, and final disposition of hazardous wastes regulated under the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. The Biennial Report captures detailed data on the generation of hazardous waste from large quantity generators and data on waste management practices from treatment, storage and disposal facilities. Currently, the EPA states that data collected between 1991 and 1997 was originally a part of the defunct Biennial Reporting System and is now incorporated into the RCRAInfo data system.

CDL Clandestine Drug Laboratory Locations

VERSION DATE: 07/01/16

The U.S. Department of Justice ("the Department") provides this information as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments. The Department does not establish, implement, enforce, or certify compliance with clean-up or remediation standards for contaminated sites; the public should contact a state or local health department or environmental protection agency for that information.

DOCKETS EPA Docket Data

VERSION DATE: 12/22/05

The United States Environmental Protection Agency Docket data lists Civil Case Defendants, filing dates as far back as 1971, laws broken including section, violations that occurred, pollutants involved, penalties assessed and superfund awards by facility and location. Please refer to ICIS database as source of current data.

EC Federal Engineering Institutional Control Sites

VERSION DATE: 08/03/15

This database includes site locations where Engineering and/or Institutional Controls have been identified as part

of a selected remedy for the site as defined by United States Environmental Protection Agency official remedy decision documents. A site listing does not indicate that the institutional and engineering controls are currently in place nor will be in place once the remedy is complete; it only indicates that the decision to include either of them in the remedy is documented as of the completed date of the document. Institutional controls are actions, such as legal controls, that help minimize the potential for human exposure to contamination by ensuring appropriate land or resource use. Engineering controls include caps, barriers, or other device engineering to prevent access, exposure, or continued migration of contamination.

ERNSMN Emergency Response Notification System

VERSION DATE: 10/04/16

This National Response Center database contains data on reported releases of oil, chemical, radiological, biological, and/or etiological discharges into the environment anywhere in the United States and its territories. The data comes from spill reports made to the U.S. Environmental Protection Agency, U.S. Coast Guard, the National Response Center and/or the U.S. Department of Transportation.

FRSMN Facility Registry System

VERSION DATE: 09/14/16

The United States Environmental Protection Agency's Office of Environmental Information (OEI) developed the Facility Registry System (FRS) as the centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. The Facility Registry System replaced the Facility Index System or FINDS database.

HMIRSR05 Hazardous Materials Incident Reporting System

VERSION DATE: 11/29/16

The HMIRS database contains unintentional hazardous materials release information reported to the U.S. Department of Transportation located in EPA Region 5. Region 5 includes the following states: Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin.

ICIS Integrated Compliance Information System (formerly DOCKETS)

VERSION DATE: 08/13/16

ICIS is a case activity tracking and management system for civil, judicial, and administrative federal Environmental Protection Agency enforcement cases. ICIS contains information on federal administrative and federal judicial cases under the following environmental statutes: the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Emergency Planning and Community Right-to-Know Act - Section 313, the Toxic Substances Control Act, the Federal Insecticide, Fungicide, and Rodenticide Act, the Comprehensive Environmental Response, Compensation, and Liability Act, the Safe Drinking Water Act, and the Marine Protection, Research, and Sanctuaries Act.

ICISNPDES Integrated Compliance Information System National Pollutant Discharge Elimination System

VERSION DATE: 01/21/17

In 2006, the Integrated Compliance Information System (ICIS) - National Pollutant Discharge Elimination System (NPDES) became the NPDES national system of record for select states, tribes and territories. ICIS-NPDES is an information management system maintained by the United States Environmental Protection Agency's Office of Compliance to track permit compliance and enforcement status of facilities regulated by the NPDES under the Clean Water Act. ICIS-NPDES is designed to support the NPDES program at the state, regional, and national levels.

LUCIS Land Use Control Information System

VERSION DATE: 09/01/06

The LUCIS database is maintained by the U.S. Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

MLTS Material Licensing Tracking System

VERSION DATE: 02/12/16

MLTS is a list of approximately 8,100 sites which have or use radioactive materials subject to the United States Nuclear Regulatory Commission (NRC) licensing requirements.

NPDESR05 National Pollutant Discharge Elimination System

VERSION DATE: 04/01/07

Information in this database is extracted from the Water Permit Compliance System (PCS) database which is used by United States Environmental Protection Agency to track surface water permits issued under the Clean Water Act. This database includes permitted facilities located in EPA Region 5. This region includes the following states: Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin. The NPDES database was collected from December 2002 until April 2007. Refer to the PCS and/or ICIS-NPDES database as source of current data.

PADS PCB Activity Database System

VERSION DATE: 07/01/14

The PCB Activity Database System (PADS) is used by the United States Environmental Protection Agency to monitor the activities of polychlorinated biphenyls (PCB) handlers.

PCSR05 Permit Compliance System

VERSION DATE: 08/01/12

The Permit Compliance System is used in tracking enforcement status and permit compliance of facilities controlled by the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act and is maintained by the United States Environmental Protection Agency's Office of Compliance. PCS is designed to support the NPDES program at the state, regional, and national levels. This database includes permitted facilities located in EPA Region 5. This region includes the following states: Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin. PCS has been modernized, and no longer exists. National Pollutant Discharge Elimination System (ICIS-NPDES) data can now be found in Integrated Compliance Information System (ICIS).

RCRASC RCRA Sites with Controls

VERSION DATE: 02/23/16

This list of Resource Conservation and Recovery Act sites with institutional controls in place is provided by the U.S. Environmental Protection Agency.

SFLIENS CERCLIS Liens

VERSION DATE: 06/08/12

A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which United States Environmental Protection Agency has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties. This database contains those CERCLIS sites where the Lien on Property action is complete.

SSTS Section Seven Tracking System

VERSION DATE: 12/08/14

The United States Environmental Protection Agency tracks information on pesticide establishments through the Section Seven Tracking System (SSTS). SSTS records the registration of new establishments and records pesticide production at each establishment. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requires that production of pesticides or devices be conducted in a registered pesticide-producing or device-producing establishment. ("Production" includes formulation, packaging, repackaging, and relabeling.)

TRI Toxics Release Inventory

VERSION DATE: 12/31/14

The Toxics Release Inventory, provided by the United States Environmental Protection Agency, includes data on toxic chemical releases and waste management activities from certain industries as well as federal and tribal facilities. This inventory contains information about the types and amounts of toxic chemicals that are released each year to the air, water, and land as well as information on the quantities of toxic chemicals sent to other facilities for further waste management.

TSCA Toxic Substance Control Act Inventory

VERSION DATE: 12/31/06

The Toxic Substances Control Act (TSCA) was enacted in 1976 to ensure that chemicals manufactured, imported, processed, or distributed in commerce, or used or disposed of in the United States do not pose any unreasonable risks to human health or the environment. TSCA section 8(b) provides the United States Environmental Protection Agency authority to "compile, keep current, and publish a list of each chemical substance that is manufactured or processed in the United States." This TSCA Chemical Substance Inventory contains non-confidential information on the production amount of toxic chemicals from each manufacturer and importer site.

NLRRCRAG No Longer Regulated RCRA Generator Facilities

VERSION DATE: 12/12/16

This database includes RCRA Generator facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements. This listing includes facilities that formerly generated hazardous waste.
Large Quantity Generators: Generate 1,000 kg or more of hazardous waste during any calendar month; or Generate more than 1 kg of acutely hazardous waste during any calendar month; or Generate more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month; or Generate 1 kg or less of acutely hazardous waste during any calendar month, and accumulate more than 1kg of acutely hazardous waste at any time; or Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulated more than 100 kg of that material at any time.
Small Quantity Generators: Generate more than 100 and less than 1000 kilograms of hazardous waste during any calendar month and accumulate less than 6000 kg of hazardous waste at any time; or Generate 100 kg or less of hazardous waste during any calendar month, and accumulate more than 1000 kg of hazardous waste at any time.
Conditionally Exempt Small Quantity Generators: Generate 100 kilograms or less of hazardous waste per calendar month, and accumulate 1000 kg or less of hazardous waste at any time; or Generate one kilogram or less of acutely hazardous waste per calendar month, and accumulate at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste; or Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month, and accumulate at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste.

RCRAGR05 Resource Conservation & Recovery Act - Generator

VERSION DATE: 12/12/16

This database includes sites listed as generators of hazardous waste (large, small, and exempt) in the RCRAInfo

system. The United States Environmental Protection Agency defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). This database includes sites located in EPA Region 5. This region includes the following states: Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin.
Large Quantity Generators: Generate 1,000 kg or more of hazardous waste during any calendar month; or Generate more than 1 kg of acutely hazardous waste during any calendar month; or Generate more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month; or Generate 1 kg or less of acutely hazardous waste during any calendar month, and accumulate more than 1kg of acutely hazardous waste at any time; or Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulated more than 100 kg of that material at any time.
Small Quantity Generators: Generate more than 100 and less than 1000 kilograms of hazardous waste during any calendar month and accumulate less than 6000 kg of hazardous waste at any time; or Generate 100 kg or less of hazardous waste during any calendar month, and accumulate more than 1000 kg of hazardous waste at any time.
Conditionally Exempt Small Quantity Generators: Generate 100 kilograms or less of hazardous waste per calendar month, and accumulate 1000 kg or less of hazardous waste at any time; or Generate one kilogram or less of acutely hazardous waste per calendar month, and accumulate at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste; or Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month, and accumulate at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste.

HISTPST Historical Gas Stations

VERSION DATE: NR

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

MRDS Mineral Resource Data System

VERSION DATE: 03/15/16

MRDS (Mineral Resource Data System) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS.

MSHA Mine Safety and Health Administration Master Index File

VERSION DATE: 02/03/17

The Mine dataset lists all Coal and Metal/Non-Metal mines under MSHA's jurisdiction since 1/1/1970. It includes such information as the current status of each mine (Active, Abandoned, NonProducing, etc.), the current owner and operating company, commodity codes and physical attributes of the mine. Mine ID is the unique key for this data. This information is provided by the United States Department of Labor - Mine Safety and Health Administration (MSHA).

BF Brownfields Management System

VERSION DATE: 02/02/17

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. The United States Environmental Protection Agency maintains this database to track activities in the various brown field grant programs including grantee assessment, site cleanup and site redevelopment. This database included tribal brownfield sites.

NLRRCRAT No Longer Regulated RCRA Non-CORRACTS TSD Facilities

VERSION DATE: 12/12/16

This database includes RCRA Non-Corrective Action TSD facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements. This listing includes facilities that formerly treated, stored or disposed of hazardous waste.

ODI Open Dump Inventory

VERSION DATE: 06/01/85

The open dump inventory was published by the United States Environmental Protection Agency. An “open dump” is defined as a facility or site where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944) and which is not a facility for disposal of hazardous waste. This inventory has not been updated since June 1985.

RCRAT Resource Conservation & Recovery Act - Non-CORRACTS Treatment, Storage & Disposal Facilities

VERSION DATE: 12/12/16

This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste in the RCRAInfo system. The United States Environmental Protection Agency defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery

Information System (RCRIS) and the Biennial Reporting System (BRS).

SEMS Superfund Enterprise Management System

VERSION DATE: 12/05/16

The U.S. Environmental Protections Agency's (EPA) Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation (OSRTI), has implemented The Superfund Enterprise Management System (SEMS), formerly known as CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) to track and report on clean-up and enforcement activities taking place at Superfund sites. SEMS represents a joint development and ongoing collaboration between Superfund's Remedial, Removal, Federal Facilities, Enforcement and Emergency Response programs.

SEMSARCH Superfund Enterprise Management System Archived Site Inventory

VERSION DATE: 12/05/16

The Superfund Enterprise Management System Archive listing (SEMS-ARCHIVE) has replaced the CERCLIS NFRAP reporting system in 2015. This listing reflect sites that have been assessed and no further remediation is planned and is of no further interest under the Superfund program.

DNPL Delisted National Priorities List

VERSION DATE: 12/05/16

This database includes sites from the United States Environmental Protection Agency's Final National Priorities List (NPL) where remedies have proven to be satisfactory or sites where the original analyses were inaccurate, and the site is no longer appropriate for inclusion on the NPL, and final publication in the Federal Register has occurred.

DOD Department of Defense Sites

VERSION DATE: 06/21/10

This information originates from the National Atlas of the United States Federal Lands data, which includes lands owned or administered by the Federal government. Army DOD, Army Corps of Engineers DOD, Air Force DOD, Navy DOD and Marine DOD areas of 640 acres or more are included.

FUDS Formerly Used Defense Sites

VERSION DATE: 06/01/15

The Formerly Used Defense Sites (FUDS) inventory includes properties previously owned by or leased to the United States and under Secretary of Defense Jurisdiction, as well as Munitions Response Areas (MRAs). The remediation of these properties is the responsibility of the Department of Defense. This data is provided by the U.S. Army Corps of Engineers (USACE), the boundaries/polygon data are based on preliminary findings and not all properties currently have polygon data available. DISCLAIMER: This data represents the results of data

collection/processing for a specific USACE activity and is in no way to be considered comprehensive or to be used in any legal or official capacity as presented on this site. While the USACE has made a reasonable effort to insure the accuracy of the maps and associated data, it should be explicitly noted that USACE makes no warranty, representation or guaranty, either expressed or implied, as to the content, sequence, accuracy, timeliness or completeness of any of the data provided herein. For additional information on Formerly Used Defense Sites please contact the USACE Public Affairs Office at (202) 528-4285.

NLRRCRAC No Longer Regulated RCRA Corrective Action Facilities

VERSION DATE: 12/12/16

This database includes RCRA Corrective Action facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements.

NMS Former Military Nike Missile Sites

VERSION DATE: 12/01/84

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites.
During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

NPL National Priorities List

VERSION DATE: 12/05/16

This database includes United States Environmental Protection Agency (EPA) National Priorities List sites that fall under the EPA's Superfund program, established to fund the cleanup of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action.

PNPL Proposed National Priorities List

VERSION DATE: 12/05/16

This database contains sites proposed to be included on the National Priorities List (NPL) in the Federal Register. The United States Environmental Protection Agency investigates these sites to determine if they may present long-term threats to public health or the environment.

RCRAC Resource Conservation & Recovery Act - Corrective Action Facilities

VERSION DATE: 12/12/16

This database includes all hazardous waste sites with ongoing corrective action activity and where corrective action is statutorily required to be address but have not had corrective action imposed in the RCRAInfo system. The Corrective Action Program requires owners or operators of RCRA facilities (or treatment, storage, and disposal facilities) to investigate and cleanup contamination in order to protect human health and the environment. The United States Environmental Protection Agency defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS).

RCRASUBC Resource Conservation & Recovery Act - Subject to Corrective Action Facilities

VERSION DATE: 12/12/16

This database includes hazardous waste sites which are potentially subject to corrective action regardless of whether they have correction action underway, plus any sites showing a corrective action event of RFI or beyond in the RCRAInfo system. Sites conducting corrective action under analogous state authorities are also included. The United States Environmental Protection Agency defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS).

RODS Record of Decision System

VERSION DATE: 07/01/13

These decision documents maintained by the United States Environmental Protection Agency describe the chosen remedy for NPL (Superfund) site remediation. They also include site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, and scope and role of response action.

Environmental Records Definitions - STATE (MN)

AIRS Permitted Air Facilities

VERSION DATE: 03/31/16

This database contains facilities with air permits issued by the by the Minnesota Pollution Control Agency. These permits identify the units at each facility that generate air pollutants and, where applicable, the limits on those emissions. In some cases a permit may also authorize construction or modification of a facility.

CDL Clandestine Drug Laboratory Locations

VERSION DATE: 12/19/16

This listing of clandestine methamphetamine laboratories is provided by the Minnesota Department of Health. Each meth lab, spill or dump is a potential hazardous waste site, requiring assessment and remediation by experienced and qualified personnel. Former meth lab sites are being cleaned (or remediated) in many Minnesota communities. In these communities, the cleanups are being guided by city and county ordinances, local housing laws, and Minnesota Statute 145A, the Public Health Nuisance Statute.

FEEDLOT Feedlots

VERSION DATE: 10/03/16

Feedlots may be small farms or large-scale commercial livestock operations. They are places where animals are confined for feeding, breeding or holding. The Minnesota Pollution Control Agency (MPCA) and its county partners place requirements on how manure is managed at feedlots, so that it does not contaminate nearby surface water and groundwater.

PCASPILLS Spills Listing

VERSION DATE: 09/01/16

The Minnesota Pollution Control Agency's Emergency Response Team maintains this listing of reported petroleum product, hazardous substance, and/or other spills.

SWUP Solid Waste Utilization Projects

VERSION DATE: 06/30/16

According to the Minnesota Pollution Control Agency, a solid waste utilization project uses certain wastes in a new way to recycle the material instead of putting it into a landfill. An example is using tires to create furniture. The beneficial use of waste products saves landfill capacity for materials that do not have alternative uses. By using solid waste, individuals and organizations can reduce disposal costs, or even generate profit through the sale of materials that have a beneficial use.

TIERII Tier Two Facility Listing

VERSION DATE: 09/21/16

The Minnesota Department of Public Safety's Emergency Planning and Community Right-to-Know Act Program (EPCRA) maintains this listing of Tier Two facilities which store hazardous chemicals on-site. These facilities subject to EPCRA reporting submit Tier II forms which provide information such as the Material Safety Data Sheet (MSDS) chemical or common name, emergency contact information, approximate amount of chemical stored, along with the location of the chemical at the facility.

WDP Water Discharge Permits

VERSION DATE: 07/01/16

This Minnesota Pollution Control Agency (MPCA) database includes the following types of water permits: Construction Stormwater Permits, Construction Stormwater Site Subdivisions, Industrial Stormwater Permits, MS4 Projects, and Wastewater Dischargers. A construction stormwater permit is designed to limit pollution during and after construction by controlling the erosion associated with construction activities. A construction stormwater site subdivision is a site where a construction project with an existing stormwater permit has been sub-divided into smaller parcels. Industrial stormwater permits are designed to limit the amount of harmful contaminants that reach surface water and groundwater, by requiring good practices for storing and handling materials. A Municipal Separate Storm Sewer System (MS4) is a system of conveyances - such as gutters, ditches, city streets and storm drains - which is used as a path for stormwater. Regulated MS4s cover large areas, and are owned or operated by a public entity such as a city, county, township, watershed district or university. A wastewater discharger is a facility that generates or treats wastewater for discharge onto land or into water.

BULKSTORAGE Bulk Storage Permits

VERSION DATE: 12/14/16

The Minnesota Department of Agriculture's Licensing Information System (LIS) lists individuals or companies who hold licenses, certificates and/or permits required by state law and regulated by the Department. This database only contains those LIS licenses related to anhydrous ammonia storage facilities and bulk pesticide/ fertilizer storage facilities. Please note the data is real time and therefore constantly changing.

CLEANERS Registered Drycleaning Facilities

VERSION DATE: 10/05/10

The Minnesota Pollution Control Agency maintains this listing of registered dry cleaning facilities.

IC Sites with Institutional Controls

VERSION DATE: 04/22/16

Institutional controls are defined by Minnesota Statute, Section 115B.02, subdivision 9a, as legally enforceable restrictions, conditions, or controls on the use of real property, ground water, or surface water located at or adjacent to a facility where response actions are taken that are reasonably required to assure that the response actions are protective of public health or welfare or the environment. Institutional controls include restrictions,

conditions, or controls enforceable by contract, easement, restrictive covenant, statute, ordinance, or rule, including official controls such as zoning, building codes, and official maps. An affidavit required under section 115B.16, subdivision 2, or similar notice of a release recorded with real property records is also an institutional control.

PBRLF Permitted By Rule Landfills

VERSION DATE: 09/30/16

According to the Minnesota Pollution Control Agency, a landfill that is permitted by rule is not required to obtain an individual solid waste permit if it meets certain eligibility criteria. However, it must comply with waste management rules and regulations. Landfills may be permitted by rule if they have a small capacity and/or operate for a short period of time.

UAST Registered Storage Tanks

VERSION DATE: 12/30/16

The Registered Storage Tanks Database provides information on aboveground and underground storage tanks registered with the Minnesota Pollution Control Agency. Owners of USTs and ASTs with a capacity of 500 gallons or more which contain petroleum or hazardous substances must notify the MPCA of the existence of these tanks. Tanks not subject to notification include farm and residential motor fuel tanks less than 1,100 gallons; heating oil tanks less than 1,100 gallons; flow-through process tanks; septic tanks; and agricultural chemical tanks. Some of the data included reflects storage tanks reported in the old "TALES" database. New data reported here is from the MPCA's new "TEMPO" database.

AGSPILLS Agricultural Spills Listing

VERSION DATE: 01/05/17

This list of reported spill incidents is provided by the Minnesota Department of Agriculture (MDA). The MDA is the lead agency for response to, and cleanup of, agricultural chemical contamination (pesticides and fertilizers) in Minnesota. The MDA has grouped these spills into three categories: Old Emergencies, Small Spills and Investigations, and Investigations Boundaries. Old Emergencies represent emergencies which were closed prior to March 1, 2004. These files and the locations plotted have not been reviewed for accuracy and completeness. Smalls Spills and Investigations represent the location of small spills and investigations, which were closed after March 1, 2004. Investigation Boundaries represent the approximate extent of large spills and other types of facility investigations. Facility Investigations are further subdivided into the following program areas: Awaiting Prioritization Investigation files of known or potential agricultural chemical contamination that are waiting to be prioritized; Prioritized Investigation files of known or potential agricultural chemical contamination that have been prioritized and are awaiting activation; Comprehensive Facility Investigation / MERLA Investigation files of known or potential agricultural chemical contamination that have been activated in MDA's Comprehensive Facility Investigation Program or are active Superfund sites under MDA's oversite; AgVIC Investigation files of known or potential agricultural chemical contamination that have enrolled in the MDA's Agricultural Voluntary Investigation and Cleanup (AgVIC) Program; and Agricultural Chemical Emergency Response Investigation files that were reported as emergency spills of agricultural chemicals and are large enough in size to be represented by a

polygon.

CAFO Concentrated Animal Feeding Operations

VERSION DATE: 11/19/15

A Concentrated Animal Feeding Operation (CAFO) is any feeding operation with a capacity of 1,000 or more animal units according to federal animal unit calculations. The Minnesota Pollution Control Agency can also define a facility with less than 1,000 animal units as a CAFO on a case-by-case basis, depending on site conditions, and if manure or process wastewater is directly discharged to waters of the state. Facilities that are CAFOs must comply with both federal regulations and state rules. Two or more feedlots under common ownership are considered a single facility if they adjoin each other or use the same manure storage or disposal system.

CLF Closed Landfills

VERSION DATE: 12/22/16

This database includes closed solid waste facilities and sites that have been entered into the PCA's Closed Landfill Program (CLP). The CLP is a voluntary program established by the legislature in 1994 to properly close, monitor, and maintain Minnesota's closed municipal sanitary landfills. Any MPCA-permitted mixed-municipal solid waste landfill that stopped accepting mixed municipal solid waste (MMSW) by April 9, 1994, and demolition debris before May 1, 1995, can qualify for application to this program.

LUAST Registered Leaking Storage Tanks

VERSION DATE: 09/01/16

The Minnesota Pollution Control Agency maintains this listing of leaking aboveground and underground storage tanks. Tank owners are required to immediately report a leak or spill of more than five gallons of petroleum, or any amount of a hazardous substance, from any tank or piping. All leaks and spills from USTs and ASTs and associated piping must be cleaned up to protect the environment and public health.

PBF Petroleum Brownfields Program Sites

VERSION DATE: 04/01/16

This listing of Petroleum Brownfield sites, including those with Development Response Action Plans dated between 2008 and 2012, is provided by the Minnesota Pollution Control Agency (MPCA). The Petroleum Brownfields Program (formerly VPIC) provides the technical assistance and liability assurance needed to facilitate and expedite the development, transfer, investigation and/or cleanup of property that is contaminated with petroleum. Even after cleanup or MPCA file closure most properties will have contamination remaining. State law requires that persons properly manage contaminated soil and water they uncover or disturb - even if they are not the party responsible for the contamination. Property owners, purchasers or developers of property where contaminated soil or water might be encountered may include provisions - called "response actions" - in development plans describing how petroleum contaminated soil and water will be managed if encountered. For some properties, special construction might be needed to prevent the further spreading of the contamination

and/or to prevent petroleum vapors from entering buildings or utility access shafts.

PVICP Potential Voluntary Investigation and Cleanup Program Sites

VERSION DATE: 04/22/16

This listing of Potential Voluntary Investigation and Cleanup Program sites is provided by the Minnesota Pollution Control Agency. These potential sites have not yet entered into the VIC Program until an application has been received at the MPCA.

SAS State Assessment Sites

VERSION DATE: 10/07/16

State Assessment sites are places that Minnesota Pollution Control Agency (MPCA) Site Assessment staff have investigated because of suspected contamination. The sites investigated include abandoned industrial properties, small commercial businesses and publicly-owned land. (Note that petroleum-contaminated sites are investigated by MPCA Tanks and Leaks staff.) These sites may be referred to the Site Assessment program by the Voluntary Investigation and Cleanup (VIC) program, the Petroleum Remediation program, Minnesota Duty Officer reports or citizen complaints. Site Assessment staff do an initial assessment, and then determine if further action is needed. If a site poses a threat to human health or the environment, it is referred to CERCLIS, Superfund, RCRA Cleanup or VIC.

SRS Site Response Section Database

VERSION DATE: 04/22/16

The Minnesota Pollution Control Agency (MPCA) is involved in remediation activities through various programs. Remediation is the process of cleaning up pollution in the soil, water or air. The pollution can result from an accidental spill or from activities that occur over a long time. This MPCA database includes remediation sites from the Superfund, Voluntary Investigation and Cleanup, Brownfields, Resource Conservation and Recovery Act, Tanks, Landfills, and Emergency Response Programs.

SWF Open Solid Waste Facilities

VERSION DATE: 09/23/16

Open landfills are regulated by Minnesota Rules 7001 and 7035. They actively accept, under the terms and conditions of a Minnesota Pollution Control Agency permit, certain types of wastes for disposal. They are part of a larger and integrated collection of open solid waste management facilities that process, transfer and receive waste for disposal in Minnesota. Open landfills fall into several categories, which include: demolition, industrial, mixed municipal and municipal waste combustor ash.

UNPERMDUMPS Unpermitted Dump Sites

VERSION DATE: 09/30/16

Unpermitted dump sites are landfills that never held a valid permit from the Minnesota Pollution Control Agency (MPCA). Generally, these dumps existed prior to the permitting program established with the creation of the MPCA in 1967. These dumps are not restricted to any type of waste, but were often old farm or municipal disposal sites that accepted household waste. State assessment staff have investigated many of these dump sites.

VICP Voluntary Investigation and Cleanup Program Sites

VERSION DATE: 04/22/16

The Voluntary Investigation and Cleanup (VIC) Program site listing is provided by the Minnesota Pollution Control Agency. This program encourages timely property transactions by reducing potential health or environmental risks from contamination and promoting the redevelopment of these properties.

REMSITES MPCA Remediation Sites

VERSION DATE: 12/30/16

This is a temporary database of MPCA remediation sites. This is the only updated source of remediation data available while the MPCA migrates their information to an updated platform. The environmental site types that are included are Brownfield, Integrated Remediation, Leaking Storage Tank, RCRA Remediation, Superfund, and Site Assessment Sites.

SF Superfund Site Information Listing

VERSION DATE: 04/22/16

The Minnesota Pollution Control Agency's Superfund Program identifies, investigates and determines appropriate cleanup plans for abandoned or uncontrolled hazardous waste sites where a release or potential release of a hazardous substance poses a risk to human health or the environment. Superfund does not deal with Resource Conservation and Recovery Act (RCRA) sites or petroleum storage tank releases.

Environmental Records Definitions - TRIBAL

USTR05 Underground Storage Tanks On Tribal Lands

VERSION DATE: 11/14/16

This database, provided by the United States Environmental Protection Agency (EPA), contains underground storage tanks on Tribal lands located in EPA Region 5. Region 5 includes the following states: Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin.

LUSTR05 Leaking Underground Storage Tanks On Tribal Lands

VERSION DATE: 11/14/16

This database, provided by the United States Environmental Protection Agency (EPA), contains leaking underground storage tanks on Tribal lands located in EPA Region 5. Region 5 includes the following states: Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin.

ODINDIAN Open Dump Inventory on Tribal Lands

VERSION DATE: 11/08/06

This Indian Health Service database contains information about facilities and sites on tribal lands where solid waste is disposed of, which are not sanitary landfills or hazardous waste disposal facilities, and which meet the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944).

INDIANRES Indian Reservations

VERSION DATE: 01/01/00

The Department of Interior and Bureau of Indian Affairs maintains this database that includes American Indian Reservations, off-reservation trust lands, public domain allotments, Alaska Native Regional Corporations and Recognized State Reservations.

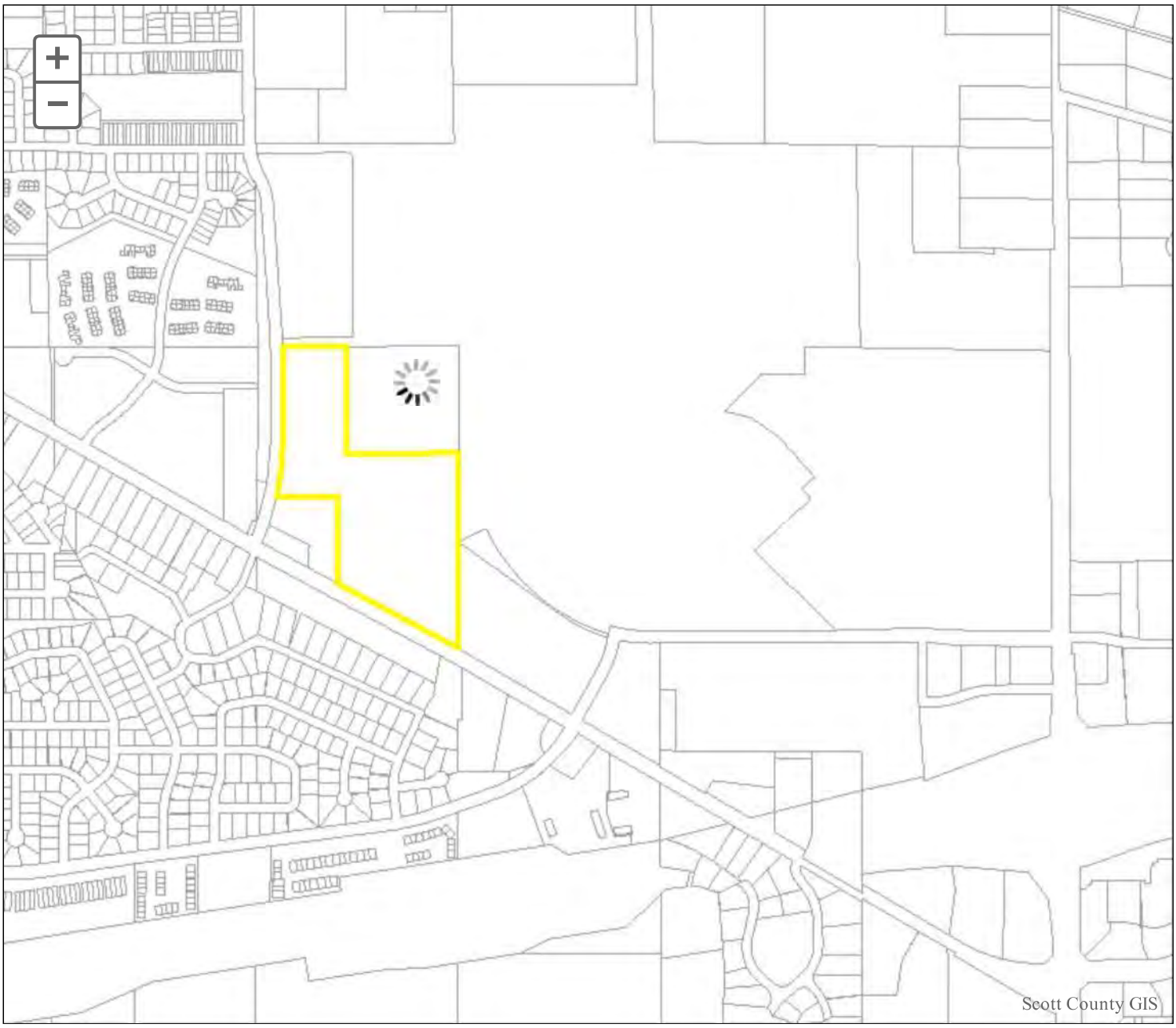
Appendix C

City/County Information

Scott County Property Information

Parcel Information - **PID: 274500090**		
Property Address:	**Taxpayer Information:** CANTERBURY PARK HOLDING CORP & 1100 CANTERBURY RD S SHAKOPEE MN 55379	**Legend** Street View Active
Parcel Properties		
Tax Acres: 0.07	**City/Township:** SHAKOPEE **School District:** ISD 0720 SHAKOPEE	
Parcel Location		
PLSS: T, R, S **Plat Name:** CANTERBURY PARK 6TH ADDN	**Lot:** O-L **Block:** 00G	
Payable Year 2016	***Last Sale Information***	
Est. Market Value Land: $651300 **Est. Market Value Building:** $0 **Est. Market Value Total:** $651300		

Map created on 2/16/2017


Scott County GIS

Scott County Property Information

Parcel Information - **PID: 274500100**		
Property Address:	**Taxpayer Information:** CANTERBURY PARK HOLDING CORP & 1100 CANTERBURY RD S SHAKOPEE MN 55379	**Legend** Street View Active
Parcel Properties		
Tax Acres: 14.19	**City/Township:** SHAKOPEE **School District:** ISD 0720 SHAKOPEE	
Parcel Location		
PLSS: T, R, S **Plat Name:** CANTERBURY PARK 6TH ADDN	**Lot:** O-L **Block:** 00H	
Payable Year 2016	***Last Sale Information***	
Est. Market Value Land: $1102100 **Est. Market Value Building:** $0 **Est. Market Value Total:** $1102100		

Map created on 2/16/2017

Scott County Property Information

Parcel Information - **PID: 274500040**		
Property Address:	**Taxpayer Information:** CANTERBURY PARK HOLDING CORP & 1100 CANTERBURY RD S SHAKOPEE MN 55379	**Legend** Street View Active
Parcel Properties		
Tax Acres: 24.01	**City/Township:** SHAKOPEE **School District:** ISD 0720 SHAKOPEE	
Parcel Location		
PLSS: T, R, S **Plat Name:** CANTERBURY PARK 6TH ADDN	**Lot:** O-L **Block:** 00B	
Payable Year 2016	***Last Sale Information***	
Est. Market Value Land: $2000 **Est. Market Value Building:** $0 **Est. Market Value Total:** $2000		

Map created on 2/16/2017

null

Parcel Information - **PID: 274500050**		
Property Address:	**Taxpayer Information:** CANTERBURY EXCHANGE LLC 1100 CANTERBURY RD SHAKOPEE MN 55379	**Legend** Aerial View Active
Parcel Properties		
Tax Acres: 1.33	**City/Township:** SHAKOPEE **School District:** ISD 0720 SHAKOPEE	
Parcel Location		
PLSS: T, R, S **Plat Name:** CANTERBURY PARK 6TH ADDN	**Lot:** O-L **Block:** 00C	
Payable Year 2016	***Last Sale Information***	
Est. Market Value Land: $2005600 **Est. Market Value Building:** $0 **Est. Market Value Total:** $2005600		

Map created on 2/16/2017 **Aerial Photo: April 2016**

Scott County Property Information

***Parcel Information* - PID: 274500090**		
Property Address:	**Taxpayer Information:** CANTERBURY PARK HOLDING CORP & 1100 CANTERBURY RD S SHAKOPEE MN 55379	**Legend** Aerial View Active
Parcel Properties		
Tax Acres: 0.07	**City/Township:** SHAKOPEE **School District:** ISD 0720 SHAKOPEE	
Parcel Location		
PLSS: T, R, S **Plat Name:** CANTERBURY PARK 6TH ADDN	**Lot:** O-L **Block:** 00G	
Payable Year 2016	***Last Sale Information***	
Est. Market Value Land: $651300 **Est. Market Value Building:** $0 **Est. Market Value Total:** $651300		

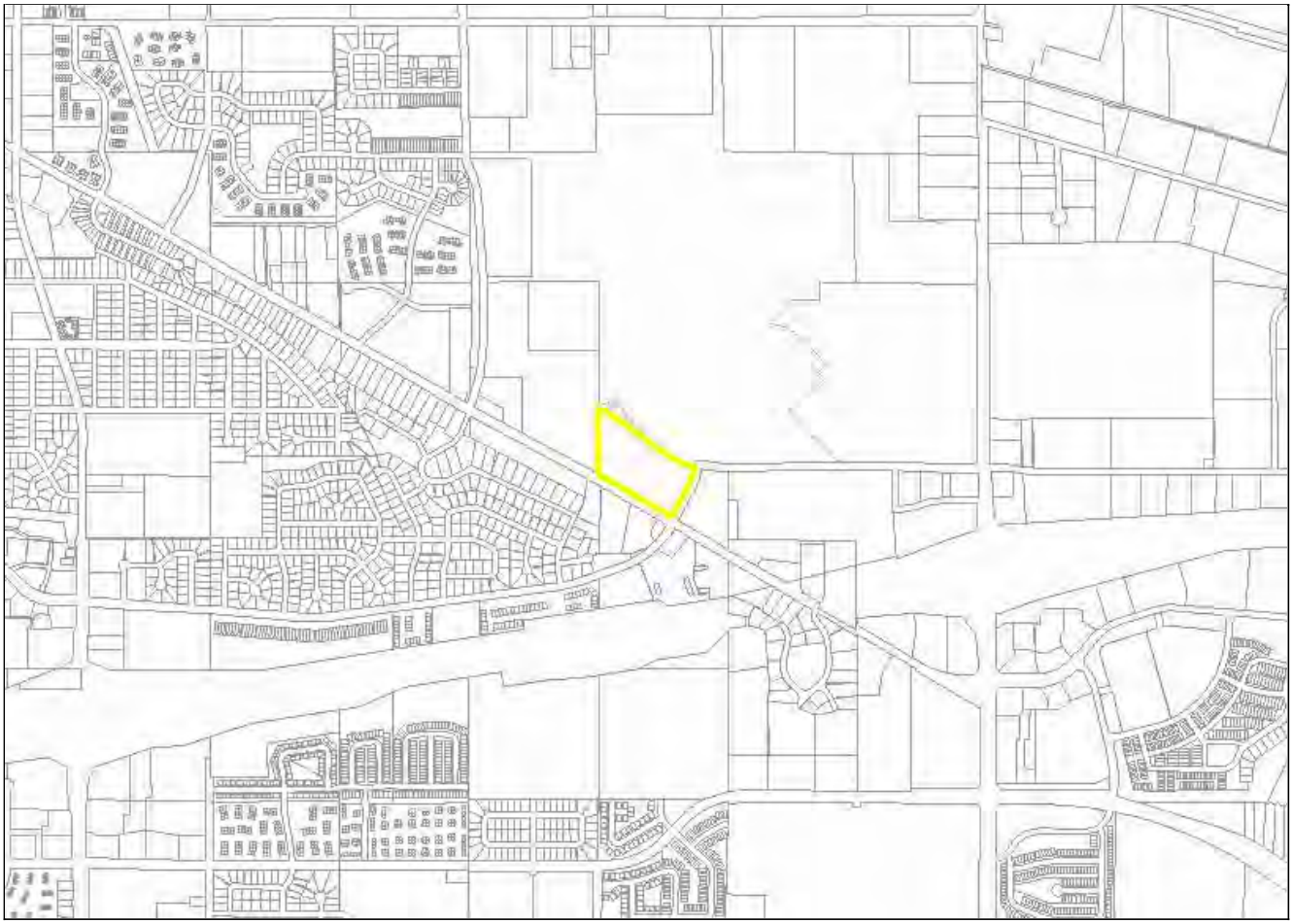
Map created on 2/16/2017 **Aerial Photo: April 2016**

Scott County Property Information

Parcel Information - **PID: 274500100**		
Property Address:	**Taxpayer Information:** CANTERBURY PARK HOLDING CORP & 1100 CANTERBURY RD S SHAKOPEE MN 55379	**Legend** Aerial View Active
Parcel Properties		
Tax Acres: 14.19	**City/Township:** SHAKOPEE **School District:** ISD 0720 SHAKOPEE	
Parcel Location		
PLSS: T, R, S **Plat Name:** CANTERBURY PARK 6TH ADDN	**Lot:** O-L **Block:** 00H	
Payable Year 2016	***Last Sale Information***	
Est. Market Value Land: $1102100 **Est. Market Value Building:** $0 **Est. Market Value Total:** $1102100		

Map created on 2/16/2017 **Aerial Photo: April 2016**

Scott County Property Information 1



Parcel Information - **PID: 272450010**		
Property Address:	**Taxpayer Information:** CANTERBURY PARK HOLDING CORP & 1100 CANTERBURY RD S SHAKOPEE MN 55379	**Legend** Street View Active
Parcel Properties		
Tax Acres: 12.8	**City/Township:** SHAKOPEE **School District:** ISD 0720 SHAKOPEE	
Parcel Location		
PLSS: T, R, S **Plat Name:** CANTERBURY PARK 5TH ADDN	**Lot:** 001 **Block:** 001	
Payable Year 2016	***Last Sale Information***	
Est. Market Value Land: $2500000 **Est. Market Value Building:** $0 **Est. Market Value Total:** $2500000		

Map created on 2/16/2017

Scott County Property Information

***Parcel Information* - PID: 274500010**		
Property Address:	**Taxpayer Information:** CANTERBURY PARK HOLDING CORP & 1100 CANTERBURY RD S SHAKOPEE MN 55379	**Legend** Aerial View Active
Parcel Properties		
Tax Acres: 200.01	**City/Township:** SHAKOPEE **School District:** ISD 0720 SHAKOPEE	
Parcel Location		
PLSS: T, R, S **Plat Name:** CANTERBURY PARK 6TH ADDN	**Lot:** 001 **Block:** 001	
Payable Year 2016	***Last Sale Information***	
Est. Market Value Land: $9180300 **Est. Market Value Building:** $4050000 **Est. Market Value Total:** $13230300		

Map created on 2/16/2017 **Aerial Photo: April 2016**

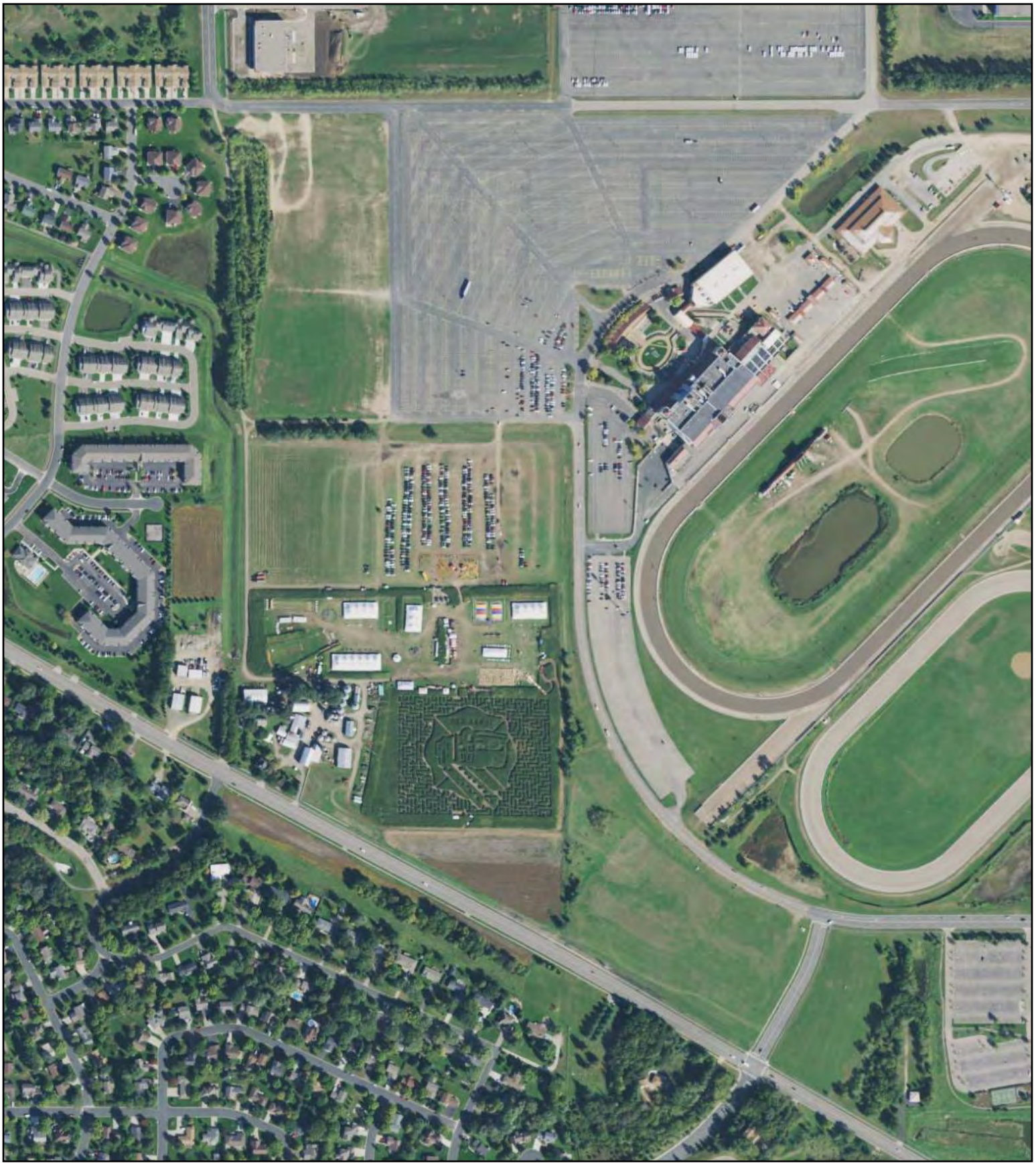
Scott County Property Information

***Parcel Information* - PID: 274500040**		
Property Address:	**Taxpayer Information:** CANTERBURY PARK HOLDING CORP & 1100 CANTERBURY RD S SHAKOPEE MN 55379	**Legend** Aerial View Active
Parcel Properties		
Tax Acres: 24.01	**City/Township:** SHAKOPEE **School District:** ISD 0720 SHAKOPEE	
Parcel Location		
PLSS: T, R, S **Plat Name:** CANTERBURY PARK 6TH ADDN	**Lot:** O-L **Block:** 00B	
Payable Year 2016	***Last Sale Information***	
Est. Market Value Land: $2000 **Est. Market Value Building:** $0 **Est. Market Value Total:** $2000		

Map created on 2/16/2017 **Aerial Photo: April 2016**

Appendix D

Aerial Photographs



Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

2015

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

2013

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

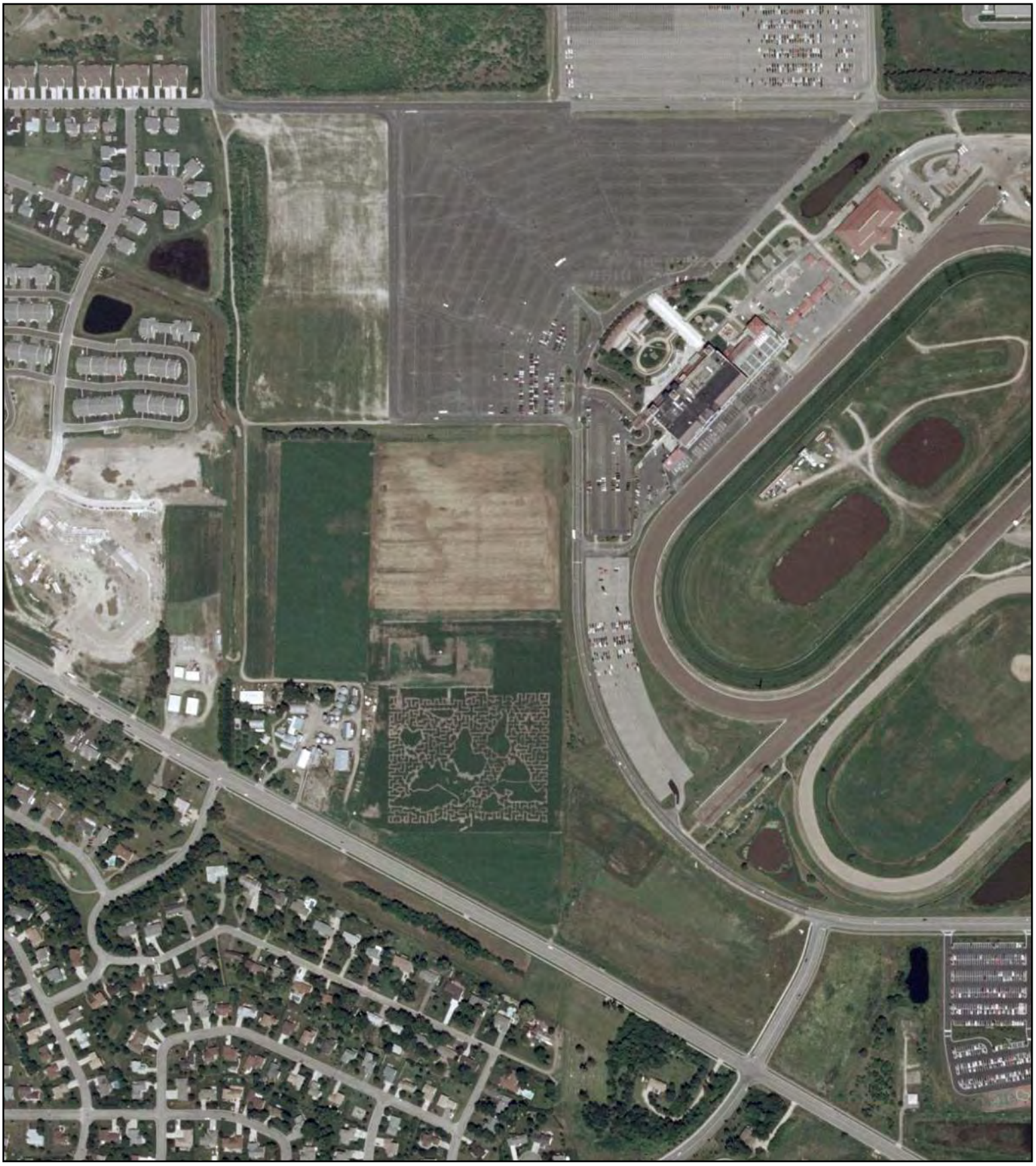
Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

2008

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG



Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

2003

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

2000

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

1997

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

1991

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Canterbury Commons 4071 Eagle Creek Blvd Shakopee, MN	N	**1984** HIG Project # 2001849 Client Project # 3237-0015 Approximate Scale 1: 6,000 (1"=500') www.historicalinfo.com	HIG

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

1980

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

1970

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

1966

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

1964

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

1957

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

1951

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

1947

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

N

1940

HIG Project # 2001849
Client Project # 3237-0015
Approximate Scale 1: 6,000 (1"=500')
www.historicalinfo.com

HIG

Appendix E

City Directories

EAGLE CREEK AVE NE

Prior Lake

CT 809.05 14091 - 15795 $A
CT 809.03 E 15116 - 15420 $A
14091 - 15862 55372

-140TH ST NE INTS
14091 Gary Gene Briese .... 82 NP
Susan Helen Scully .... 82 NP
15116 .... NP
15120 Jessica Otis .... 03 NP
15126 15130 .... NP
-LORDS ST NE INTS
-WINDSONG CIR NE INTS
15420 .... NP
-154TH ST NW INTS
-HIGHLAND AVE NW INTS
15737 Donald William Scott 84 952 447-4115
Janice Mary Scott 84 952 447-4115
-GRAINWOOD CIR NE INTS
-GRAINWOOD TRL INTS
15795 Evelyn Alice Baer 94 952 447-2224
John W Baer 94 952 447-2224
15862 ★Knotty Oar Marina 10 952.447.4300
★Prior Lake Tours 96 952.447.4499
-WAGON BRIDGE CIR NE INTS
11 RESIDENCE 2 BUSINESS

EAGLE CREEK AVE SE

Prior Lake

CT 809.04 E 16000 - 16094 $B
E 16000 - 16268 55372

-EAGLE CREEK AVE NE INTS
16000 Bette Ann Humphrey 91 952 447-4055
16016 Brianna Leah McClain (16/04) .... 04 NP
Casey Jon McLain (16/04) .... 04 NP
16020 Jon Joseph Frank (5/01) 01 952 226-3059
Lisa Susan Frank (5/01) 01 952 226-3059
16036 Kevin James Bergstrom 85 952 447-1466
16044 Carly Wirtz (5/07) 06 952 447-3472
Kyle Wirtz (5/07) 06 952 447-3472
16058 Lucas Charles Brazier (5/06) .... 06 NP
16072 Charles Brazier .... 76 NP
16084 Cheryl Annette Leaf (10/97) 90 952 440-3326
Dean Eric Leaf (10/97) 90 952 440-3326
16094 Donald James Sparre Jr 96 952 447-5225
Katherine Marie Sparre 96 952 447-5225
16210 Building
100 **★City Of Prior Lake 10 952.447.9783**
100 **★Prior Lake Public Library .. 96 952.447.3375**
-LAKESIDE AVE SE INTS
16268 ★RE Max Home RealtyRich Gross + 952.440.7653
-WEST AVE SE INTS
14 RESIDENCE 3 BUSINESS

EAGLE CREEK BLVD

Shakopee

CT 803.01 1324 - 8911 $C
CT 803.02 2362 - 8920 $B
1324 - 8920 55379

-GORMAN ST INTS
1324 Apartments
307 Alfredo Almazan Sr .... 09 NP
307 Ana Almazan .... 09 NP
314 Eric Y Assemine .... + NP
112 Millicent Bota 05 952 403-6894
112 Milly Bota 05 952 403-6894
315 Ahmed Bulle .... + NP
224 Reginaldo Dacosta .... 06 NP
215 Stacy Ann Dvorak .... 09 NP
201 Bob Leonard Erkel .... + NP
201 Kathy Jo Erkel .... + NP
108 Daniel Estrada .... 09 NP
108 Luis Estrada .... 09 NP
305 Randy G Flynn .... 05 NP
207 Felipe Garcia Herna .... – NP
111 Susana Arneca Hernandez 01 952 445-2589
111 Yesaira Hernandez 01 952 445-2589
110 Brenda Justice .... 09 NP
110 Matthew Justice .... 08 NP
124 Angie M Kechely .... 05 NP
216 Allison Kuehn .... 05 NP
317 Jennifer Marie Kornegor .... + NP
317 Rita Marie Kornegor .... + NP
107 Justin M Lebens .... + NP
306 Ridda Manasre 10 952 681-2242
316 Rebecca Marshall .... + NP
309 Kevin Gerald Merkling .... – NP
104 Reynaldo Morales .... 09 NP
104 Roberto N Morales Sr .... 09 NP
211 Johnny Nikolarmean .... 09 NP
301 Sheila Obeng .... 06 NP
310 Larry Okoye Ojisa .... 08 NP
314 Helena Opoku .... + NP
109 Olga Pereiva .... 10 NP
103 Silvia Puerto .... 05 NP
322 Dave Allen Riley .... 06 NP
312 Francisco Robles .... 03 NP
312 Rafael Robles .... 03 NP
318 Ben Joseph Ralph .... + NP
222 Amy Lynn Simonson .... 04 NP
♣Eduardo Solis .... 02 NP
♣Martha Solis .... 02 NP
218 Daniel Vazquez .... 05 NP
114 Nathan Daniel West .... 08 NP
114 Sarah West .... 08 NP
-ROUNDHOUSE ST INTS
1364
★Mesc Anastanciah .... – NP
306 Trina Angell .... 07 NP
♣Shauna Barrineau 05 952.657.5707
215 Altamirano Carlos .... + NP
★Cashill Spalding Llc 06 952.403.9287
101 Angie M Clement .... 10 NP
♣Haydee Corona .... + NP
♣Dunata Cruz 06 952.406.8013
♣Lea Cruz 06 952.406.8013
116 Francisco D Dinatone .... 10 NP
♣Alejandro Fernandez .... 09 NP
113 Angel Fisherman .... + NP
211 Randy Fraser .... 05 NP
202 Andrea Garcia 06 952.496.3674
202 Guillermo Gomez Garcia 06 952.496.3674
108 Keith W Gilmour .... 08 NP
309 Jeremy Allen Gosewisch .... 02 NP
101 Mike Hanaseth .... 10 NP
307 Mark Helenius .... 10 NP
226 Erica Ilge .... 10 NP
312 Jason John Mitchell .... 08 NP
104 Fernando Gallejo Perez .... 06 NP
216 Bruce Jeff Piltz .... 09 NP
♣Cynthia Ramirez .... + 952.322.7294
♣Jose Ramirez .... + 952 322-7294
♣Lee A Ramirez 05 952.657.5707
304 Olga Serpukov .... 08 NP
218 Kathleen Mary Sewcik .... + NP
218 Steven Thomas Sewcik .... + NP
318 Domingo Lino Toledo .... 10 NP
118 Alberto Torres 08 952.233.2060
118 Star Torres 08 952.233.2060
303 Godfrey Tumushabe .... + NP
111 Beth Wentworth .... + NP
1792 Kenneth Lee Charmak (5/06) 99 952.445.6020
Sandra Louise Charmak (5/06) 99 952.445.6020
1796 Howard Charles Schmidt 76 952.445.5136
Phannattie Schmidt 76 952.445.5136
1803 ★Koehnens Repair 06 952.445.2500
★Shakopee Mini Storage .. 94 952.445.0030
1812 Cathy Ann Manheim .... 06 NP
1895 ★Canterbury Storage 04 952.445.7149
1897 ★Carburetion & Turbo Systems 10 952.445.3910
★Propane Carburetion And Equipment In 97 952.445.6870
1910 Paul J Harvey (3/08) .... 07 NP
Rebecca Joy Pressnall (3/08) .... 07 NP
1920 Heather Lyn Uriell (5/04) .... 04 NP
Jason James Uriell (5/04) .... 04 NP
1930 Richard Hyunh (1/10) .... – NP
1940 .... NP
-ROUNDHOUSE CIR S INTS
1950 Trina Marie Angell .... + NP
1960 Kyle S Warren (7/09) .... 09 NP
1970 Mark Cletus Kalal (2/03) 01 952.403.5196
1980 .... NP
1990 Amy Catherine Patterson (1/97) .... 05 NP
Richard Ray Patterson (1/97) .... 05 NP
2000 Patrick Gerald Pupp (12/02) 03 952.403.9917
2078 Toni Leigh Brooks .... 10 NP
2114 Apartments
Judith Arlean Clay 02 952.445.3933
Robert Alan Clay 02 952.445.3933
C Judy Arlean Iverson .... 08 NP
2184 .... NP
2206 Lisa Marie Schmidt 73 952.445.2269
Timothy A Schmidt 73 952.445.2269
2218 Bradley Joseph Schmitt (4/01) .... 01 NP
Denise Cherice Schmitt (4/01) .... 01 NP
2232 2256 .... NP
2304 John Matthias Dellwo 84 952.496.2704
Sharon Lee Dellwo 84 952.496.2704
2326 Clifford Dennis Stafford .... 82 NP
♢Kathy Carol Stafford .... 82 NP
2350 Joan Carol Lohmann 82 952.445.3003
2362 Jane Hauer (9/98) .... 05 NP
2368 Sharon Louise Hansen (10/97) .... 95 NP
Wayne Peter Hansen (10/97) .... 95 NP
2445 .... NP
2447 Alexa Allred .... 95 NP
John Paul Clark .... 95 NP
2860 David Anatole Kinns .... 92 NP
Katie Joanne Kings .... 92 NP
3150 ★Minnesota Montessori ... 06 952.402.0303
-HAUER TRL INTS
3650 .... NP
3901 ★Shakopee Tire & Auto 06 952.496.2317
3901 ★Holiday Stationstores 09 952.445.4813
3960 .... NP
-VIERLING DR E INTS
4751 Keith John Clemens (12/89) 82 952.445.1517
Sandy Jane Clemens (12/89) 82 952.445.1517
4767 Troy E Jensson 76 952 445-4349
Virginia V Jensson 76 952 445-4349
4815 Edna Catherine Waalen 82 952.496.1080
4835 Andrew Stephen Qually 82 952.445.7345
Steve John Qually 82 952.445.7345
4855 Haley Jean Gerlach .... 87 NP
Kathy Lynn Gerlach .... 87 NP
4915 Gary Thomas Sorenson 79 952.445.8460
Teresa Marie Sorenson 79 952.445.8460
4955 ★Craigs Taxidermy 03 952.445.5814
5015 .... NP
5025 Brian Floyd Larson (11/01) 01 952.233.0166
Paula Marie Larson (11/01) 01 952.233.0166
5035 Dianne Lynn Stang .... 80 NP
50550 John Eric Elke 76 952 445-6843
♢Katie G Elke 76 952 445-6843
5085 John Eldon Barker (8/99) 90 952.445.1790
Kristina J Barker (8/99) 90 952.445.1790
5215 Dauna Dee Reeves (1/97) 96 952.445.4975
Jason Reeves (1/97) 96 952.445.4975
5250 Melanie Jo Smith 85 952.445.9322
Patrick George Smith 85 952.445.9322
5262 Bill David Czaja 78 952.445.8071
Jennifer Marie Czaja 78 952.445.8071
5284 Todd A Ranua (7/10) 10 952.233.3479
Victoria Ranua (7/10) 10 952.233.3479
-SHAKOPEE BYP INTS
5310 Heidi Joyce Graf (8/99) 94 952.445.0744
5331 Robert Allen Lambrecht (2/02) 99 952.445.6360
Jennifer Mae Summer (2/02) 99 952.445.6360
5352 Harlan Henry Haworth 82 952.445.4199
♣Karen Allene Haworth 82 952.445.4199
5370 Donna Jean Anderson (6/92) 90 952.445.2108
5371 Leslie Yanisch (8/04) 04 952.426.6738
5380 .... NP
5411 James E Pietrzak .... 75 NP
Joan Alice Pietrzak .... 75 NP
5420 Sally Ann Nowak 82 952.445.2456
-TYRONE DR S INTS
5765 ♣Jeremy McCrank .... 72 NP
♣Tasha McCrank .... 72 NP
-CANTERBURY RD INTS
6185 Robert Thomas Whitman 75 952.445.1880
6865 Idolla Schulnop .... 04 NP
7091 ♣Mark L Leesmer (6/99) .... 05 NP
7220 .... NP
7320 ♣Steven Muhlenhardt (6/98) .... 05 NP
7501 .... NP
7556 Kathleen Wilma Muhlenhardt .... 76 NP
Steven David Muhlenhardt .... 76 NP
7720 ♣Jean M Fetzer .... 06 NP
♣Timothy L Fetzer .... 06 NP
7755 Chris Rehwinkle .... 01 NP
-MONTECITO DR INTS
7635 ♣Chris Rehwinkle .... 04 NP
♣Jimmy Rehwinkle .... 04 NP
-MCKENNA RD NW INTS
8065 James R Zaschke .... 05 NP
8234 Marian Selma Ferry .... 76 NP
8256 Michael Allan Rylance (12/03) .... 03 NP
Stacie Jo Rylance (12/03) .... 03 NP
8304 Douglas James Waldvogel .... 84 NP
Shirley Ann Waldvogel .... 84 NP
8358 .... NP
8370 Scott Allen McKenzie (8/02) 02 952.445.8356
Terri Marie McKenzie (8/02) 02 952.445.8356
8380 Mark H Mineo (6/96) .... 01 NP
Michelle R Mineo (6/02) .... 01 NP
8450 Deborah Lynn Schmidt .... 86 NP
Steven Lee Schmidt .... 86 NP
8456 ♣Kenneth J Kraft (1/06) .... 05 NP
♣Sonya D Kraft (1/06) .... 05 NP
8464 Heidi Jane Nassy (11/96) 96 952.496.2583
Ronald Lowell Nassy (11/96) 96 952.496.2583
8535 Warren C Olson .... 94 NP
Dean Olson .... 94 NP
8537 8735 .... NP
-PIKE LAKE RD INTS
8888 Eric C Goetzinger (11/04) 04 952.233.3509
8911 Angela Kulzer (5/09) 09 952.426.0334
Chad M Kulzer (5/09) 09 952.426.0334
8920 Joseph Lawrence Kelly .... 93 NP
Ruth Anne Kelly .... 93 NP
-FOOTHILL TRL INTS
200 RESIDENCE 10 BUSINESS

EAGLE CREEK CIR

Savage

CT 801.00 E 8646 - 8646 $D
E 8646 - 8646 55378

8646
212 **★1st Priority Service .... + 952.746.1035**
202 **★Ameriprise Financial 09 952.746.1646**
106 **★B & C Consulting 09 952.224.0803**
109 **★County Of Wright 10 763.682.7387**
109 **★County Of Wright 10 763.682.7385**
109 **★County Of Wright 10 763.682.7570**
109 **★County Of Wright 10 763.682.8942**
109 **★County Of Wright 10 763.682.7590**
109 **★County Of Wright 10 763.682.7594**
109 **★County Of Wright 10 763.682.7368**
109 **★County Of Wright 10 763.682.7586**
109 **★County Of Wright 10 763.682.7653**
109 **★County Of Wright 10 763.684.4551**
109 **★County Of Wright 10 763.682.7386**
109 **★County Of Wright 10 763.682.7572**
109 **★County Of Wright 10 763.682.7574**
109 **★County Of Wright 10 763.682.7596**
109 **★County Of Wright 10 763.682.7700**
109 **★County Of Wright 10 763.682.7873**
109 **★County Of Wright 10 763.682.7349**
109 **★County Of Wright 10 763.682.7580**
109 **★County Of Wright 10 763.682.7313**
109 **★County Of Wright 10 763.682.7509**
109 **★County Of Wright 10 763.682.7585**
109 **★County Of Wright 10 763.682.8953**
109 **★County Of Wright 10 763.682.7538**
109 **★County Of Wright 10 763.682.7392**
109 **★County Of Wright 10 763.682.7394**
109 **★County Of Wright 10 763.682.7584**
109 **★County Of Wright 10 763.682.7359**
109 **★County Of Wright 10 763.682.7374**
109 **★County Of Wright 10 763.682.7464**
109 **★County Of Wright 10 763.682.7367**
109 **★County Of Wright 10 763.682.7382**
109 **★County Of Wright .... + 763.682.7597**
109 **★County Of Wright 10 763.682.7573**
109 **★County Of Wright 10 763.682.7330**
209 **★Farmers Insurance Group + 952.746.5971**
202 **★James Braaten Ameriprise Financial + 952.746.1648**
202 **★Jason Medin Ameriprise Financial S + 952.746.1647**
206 **★Jmkn Restaurants 09 952.224.8370**
♣Barbara Martin 09 952.224.9064
105 **★Martin Barbara T PHD LP .. 09 952.224.9064**
Jason A Medin .... 09 NP
Lisa M Medin .... 09 NP
♣Kathryn Moore 09 952.224.9065
105 **★Moore Kathryn E PHD LP .. 09 952.224.9065**
★Searns Like A Good Idea .. + 952.746.0037
★Total Print Solutions .... + 952.224.2820
109 **★Wright County District Court + ⊙763.682.7538**
109 **★Wright County Highway Department + ⊙763.682.7387**
109 **★Wright County Highway Department + ⊙763.682.7392**
109 **★Wright Management 08 952.445.4464**
4 RESIDENCE 49 BUSINESS

EAGLE CREEK CIR NW

Prior Lake

CT 809.03 0 3835 - 3943 $A
0 3835 - 3943 55372

3835 3839 .... NP
3847 Alan Martin Prescott .... 92 NP
3863 Robert Mark Prescott Sr .... 99 NP
3879 Cynthia Lorraine Prescott .. 94 NP
3895 .... NP
3911 Barbara Fezzo .... 98 NP
John L Fezzo .... 98 NP
3943 Vernon Anderson 95 952.447.4042
-EAGLE CREEK AVE NE INTS
9 RESIDENCE

EAGLE CREEK LN

Rogers

CT 269.09 11415 - 11500 $A
11415 - 11500 55374

11415 Brett L Bergeron (8/09) .... 10 NP
Mary K Bergeron (8/09) .... 10 NP
11420 Brett L Bergeron (8/09) .... 09 NP
Mary K Bergeron (8/09) .... 09 NP
11455 Alice Louise Hartkopf (8/06) 06 763.428.2373
Mark Weiland Hartkopf (8/06) 06 763.428.2373
11460 11495;11500 .... NP
9 RESIDENCE

EAGLE CREEK PKWY

Savage

8401 - 12965 55378

8401 Building
700 **★Chief Manufacturing 07 952.894.6280**
700 **★Csav Inc 09 952.895.7232**
8440 ★Cabinets By Dan 02 952.882.1911
★Sunray Custom Cabinets . + 952.403.9210
8600 ★River Valley Behavioral Health & Wel 09 952.746.7664
8604 ★American Family Insurance + 952.224.5959
8608 ★New Town Solutions Inc. . 09 952.440.4400
8612 ★Field Consulting 09 952.746.5880
8615 ★Oh Those Guys Llc 09 952.882.9800
8627 ★Skin & Life 10 952.345.1484
8628 ★C & P Technologies 09 952.653.2840
8631 ★Sddi Sign Systems 09 952.224.9906
8632 ★Shutterfly Business Solutions 10 952.224.3597
★Step Stone Group .... + 952.233.1474
8635 ★Midwest Sound & Vision . 09 952.223.1505
8636 ★13Below Consulting 10 952.746.8070
★Country Insurance & Financial Servic 09 952.746.5676
8639 ★We Enterprises 09 952.405.7470
8640 ★Mighty Dog Media 09 952.233.1195
8647 ★Soligie 08 952.818.8300
8674 ★Falcon Technology .... + 952.736.1300
★Page Inc .... + 952.567.2380
8675 ★Lapp Tannehill 94 952.881.6700
8678 ★Hilmerson Construction Safety Servic 09 952.224.9390
8688 ★Axia Strategies 09 952.945.3535
8690 ★Prime Factor Pharmacy .. 09 952.886.9200
8692 ★Anchor Capital Management 10 952.746.2003
8694 ★Galaxy Sales Inc. 09 952.983.2188
8696 ★BP Marketing Group 10 952.906.0737
12900 ★Nelson B F Folding Cartons Inc 02 952.746.6300
12925 ★Eagle Valley Properties Llc 07 952.746.5221
★River Valley ChurchSavage Campus + 952.224.0103
12937 ★Great Northern Door Company Llc 10 952.808.3159
★Select Millwork Inc 07 952.890.1411
12953 ★Belfor USA .... + 952.882.9495
12965 ★Bimbo Bakeries USA .... + 952.229.8990
36 BUSINESS

EAGLE CREST DR

Saint Paul

CT 607.35 4272 - 4322 $C
4272 - 4322 55122

-DEER HILLS TRL INTS
4272 Gail Marie Menk 85 651.452.6147
Gregg James Menk 85 651.452.6147
4275 Cathy Rene Mohs (7/91) 03 651.464.1754
Thomas Robert Mohs (7/91) 03 651.464.1754
4276 Judith Sue Avery (7/09) .... 04 NP
4279 Andrew James Hawkins (3/01) 01 651.675.0573
Annette Sue Hawkins (3/01) 01 651.675.0573
4280 Sandra Sue Sutter 94 651.681.1575
4283 Seleshi Megersa 04 651.454.5959
4284 Joan Helen Bergstrom .... 99 NP
John Edward Bergstrom Sr .... 85 NP
4287 ★Emergency All Day Locksmith 09 651.236.6264
Ginger Lemke (7/03) .... 03 NP
Matthew James Lemke (7/03) .... 03 NP
4288 Betsy Ann Killion (11/11) .... + NP
William Lowell Killion (11/11) .... + NP
4291 Ravisankar G Gurusamy (11/09) 90 651.405.9047
4292 Stephen Alan Feeley 82 651.452.5524
Wendy Jeanne Feeley 82 651.452.5524
4295 Diane Denise Anderson (4/89) 89 651.688.9461
Gale Mark Anderson (4/89) 89 651.688.9461
4296 Dawn L Majerus .... 91 NP
Marc Eugene Majerus .... 91 NP
4300 David Malcolm Hasselmann 78 651.452.7857
Kim Darby Hasselmann 78 651.452.7857
4301 Gregory Lee Thowson 85 651.456.9348
Laura Renee Thowson 85 651.456.9348
4304 Amy A Gullikson (5/08) 06 651.688.3398
Brian F Gullikson (5/08) 06 651.688.3398
4305 Kevin Sheridan .... 05 NP
Roxanne Frances Sheridan .... 05 NP
4308 James Otto Hamagel Jr (5/96) 90 651.452.7857
Lizabeth Lynn Reyer (5/96) 90 651.452.7857
4309 Joe Thomas Ryan Jr (7/92) .... 88 NP
Karen Lynn Ryan (7/92) .... 88 NP
4312 Sue Eileen Dutloth 85 651.456.9680
4313 Naomi Lee Plowman .... 86 NP
Philip William Plowman .... 86 NP
4316 Carol Sue Krueger (6/85) .... 05 NP
4317 .... NP
4318 Brad Gene Eills .... 91 NP
Deb Lynn Eills .... 91 NP
4320 Julio M Iglesias (10/91) 91 651.688.2742
Maria Iglesias (10/91) 91 651.688.2742

ADDRESS

♣David Curtis Pasheck . . . 91●952.894.2350
12979 Leyla Warsame . . . + 952.707.1268
12981◊ Charles Ray Wright . . . 98●952.707.8670
◊ Louann A Wright . . . 98●952.707.8670
62 RESIDENCE 4 BUSINESS

EAGLE BLUFF RD

Mound
CT 277.08 3215 - 3405 $A
RR8 3215 - 3405 55364
3215 Anne C Hunt . . . 94●952.472.7034
Robert A Hunt . . . 94●952.472.7034
★Window Decor And More . 03 952.472.1330
3255 . . . NP
3260 Carl D Sutherland . . . 94●952.472.6942
Nancy C Sutherland . . . 94●952.472.6942
3265★Midwest School Of Etiquet 89 952.472.2590
3275 Jennifer Anderson . . . 00●952.472.4840
Steve D Freeman . . . 00●952.472.4840
3280 . . . NP
3285 Lisa Kay Ogren . . . 96●952.495.1909
Mark J Ogren . . . 96●952.495.1909
3300 Bruce G Kehring . . . 01●952.472.1642
Kara L Kehring . . . 01●952.472.1642
3305★Lisimba Consulting Services Inc
04 952.472.6750
3320 George M Tiffany . . . 98●952.495.9305
Margaret K Tiffany . . . 98●952.495.9305
3325★Elliott Williams Design . . . 98 . .
Brenda E Williams . . . 04●952.472.6095
Harold Gordon Williams IX . . . 04●952.472.6095
★Williams Real Estate Llc . . + . .
3340 Danielle K Clements . . . 89● NP
Susan Marie Clements . . . 89● NP
3345◊ Loretta Carol Magnuson . . . 84●952.472.3772
◊ Timothy S Magnuson . . . 84●952.472.3772
3360◊ Robert C Eckert . . . 85●952.472.5679
3365◊ James M Cavanaugh . . . 89●952.472.3380
◊ Mary Susan Cavanaugh . . . 89●952.472.3380
3380 David Gordon Hanson . . . 82●952.472.5901
Janet Elizabeth Hanson . . . 82●952.472.5901
3385 Charlotte Ann Sweet . . . 86●952.472.5744
Douglas Frederick Sweet . . . 86●952.472.5744
3400 Dean Bernie Vallinsen . . . 89●952.472.2606
Karen S Vallinsen . . . 89●952.472.2606
3405 . . . NP
30 RESIDENCE 5 BUSINESS

EAGLE CREEK AVE

Prior Lake
CT 809.06 0 8121 - 8155 $8
RR16 0 8121 - 8155 55372
8121★Artistic Preservation . . . . + 952.447.6456
★Inspired Moments Imagery + . .
8155 Ronald E Schmidt . . . 04● NP
1 RESIDENCE 2 BUSINESS

EAGLE CREEK AVE NE

Prior Lake
CT 809.05 14091 - 15795 $A
CT 809.03 15116 - 15862 $A
RR14 14091 - 15862 55372
–140TH ST NE INTS
14091 Gary Briese . . . 92 952.445.1884
Susan Helen Scully . . . 92 952.445.1884
15116 15120;15126;15130 . . . NP
15220 Bette L Conard . . . 94●952.440.6479
Edward John Conard . . . 94●952.440.6479
–EAU CLAIRE TRL NE INTS
15420 Justin Hamilton . . . 96●952.440.3167
Shane James Hamilton . . . 06●952.440.3167
–HIGHLAND AVE NW INTS
15717 Donald William Scott . . . 94●952.447.4115
Janice Mary Scott . . . 94●952.447.4115
15795 Evelyn Alice Bael . . . 94●952.447.2224
15840♣Edwin A Martini Jr . . . 96●952.447.5904
15862★Prior Lake Tours Inc 95 952.447.4499
★Wagon Bridge Marina And Service
92 952.447.4300
14 RESIDENCE 2 BUSINESS

EAGLE CREEK AVE SE

Prior Lake
CT 809.04 E 16000 - 16268 $B
CT 809.06 E 16200 - 16210 $B
RR14 E 16000 - 16268 55372
16000 Bette Ann Humphrey . . . 93●952.447.4055
16010★Casey Mclain Fine Art Llc . 05 . .
Brianna McClain . . . 05 NP
Casey McClain . . . 05 NP
★McLain Real Estate Group Llc 05 . .
16020 Jon Joseph Frank . . . 01●952.226.3059
Lisa Susan Frank . . . 01●952.226.2017
16030 Kevin James Bergstrom . . . 85●952.447.1466
16044 Ronnie Howard Carter . . . 99●952.440.9948
Tanis Lynn Carter . . . 99●952.440.9948
16058 Lucas Charles Brazier . . . 05● NP
16072 Charles Ronald Brazier . . . 76●952.447.4736
Elizabeth Ann Brazier . . . 76●952.447.4736
★Zachary J Brazier . . . + . .
16084 Cheryl Annette Leaf . . . 90●952.440.3326
Dean Eric Leaf . . . 90●952.440.3326
16094 . . . NP
–LAKESIDE AVE SE INTS
16200★City Of Prior Lake . . . 79 952.447.4230
★Lakefront Community Warming House
04 952.447.5747
–WEST AVE SE INTS
16210 Building
★♣ City Perks Inc . . . 99 952.226.2489
★♣ Prior Lake Public Library 00 952.447.3375
1 ★Schulberg Enterprises Llc. 05 . .
16268★RE Max Home Realty . . . 03 952.440.7653
14 RESIDENCE 9 BUSINESS

EAGLE CREEK BLVD

Shakopee
CT 803.01 1324 - 8911 $C
CT 803.02 3088 - 8920 $B
RR10 1324 - 8735 55379
–SARAZIN ST INTS
1324
303 Julian Abascal . . . 05 NP
217 Maxwell Agyemen . . . 04 952.233.8120
Daniel Arana . . . 02 952.445.3523
214 Araceli Baehna . . . 03 952.496.2947
118 Ramiro Balmaceda . . . 03 952.403.7839
308 Tom Bates . . . 05 NP
3 C Bender . . . 01 NP
205 Boaz Bola . . . 05 952.403.6694
205 Millicent Bola . . . 05 952.403.6694
314 Amy Burnell . . . 05 NP
302 Adrian Carvajal . . . + 952.445.8146
116 Elizabeth H Castro . . . 04 952.233.4035
204 Sucho Chaned . . . 03 NP
Juan Cortez . . . 02 952.233.2250
♣Mario Cruz . . . 04 952.233.2517
♣Melissa Dankoo . . . 00 NP
♣Noi Dabkeo . . . 00 NP
224 Eginaldo Dascosta . . . + 952.445.8669
111 Alberto Dominguez . . . 03 952.496.0561
111 Fabiola Dominguez . . . 03 952.496.0561
113 Carolyn Maria Eischens . . . 05 952.445.6296
305 Randy Flynn . . . 05 952.445.5558
324 Guadalupe Garcia . . . + NP
322 Andrew John Gjerstad . . . + NP
109 Rolando Godoy . . . 05 952.445.0485
206 Alejandro Guevara . . . 05 952.496.1172
♣Jeff Heronimus . . . 01 NP
Miguel Hicks . . . 04 952.402.9685
124 Angie M Kechely . . . 05 NP
♣Allison Koehn . . . 05 NP
108 Juana Ledezma . . . 02 952.496.1150
108 Teodoro Ledezma . . . 02 952.233.1586
♣Sara A Legros . . . + 952.496.1442
102 Jesus Luna . . . 05 952.445.2631
216 Jessica Maxwell . . . 05 NP
315 Richard Notermann . . . 05 952.403.9306
210 Martha Pargas . . . 05 952.445.2049
103 Selvin Puerto . . . + 952.445.1552
109★RCM Construction Group . + 952.233.2299
307 Carlos Rivera . . . + 952.233.7216
122 Perla Saldana . . . 04 952.496.3074
222 Jason T Sewill . . . 03 NP
10 Earl Silverston . . . 05 NP
112 Eduardo Solis . . . 02 952.403.9135
112 Martha Solis . . . 02 952.233.3493
117 Betty Steinke . . . 03 952.229.4691
117 Ron S Steinke . . . 03 952.229.4691
218 Daniel Vazquez . . . 05 952.496.1455
♣Dina Vega . . . 05 952.496.9250
211 Heather Leine Voormees . . . + NP
110 George Norbit Wottin III . . . 05 NP
115 Andrew Yamoah . . . + NP
210 Heidi Zavaleta . . . 05 952.445.2049
1364
122 Isis Andrade . . . 03 952.403.9716
104 Salomon Garcia Avila . . . 97●952.403.0773
♣Dawn Bakken . . . 02 NP
203 Andrew Borseman . . . + NP
120 Daniel Marland Casey . . . 02 NP
♣Sevilla D Cruz . . . + 952.445.5427
♣Richard Desrosiers . . . + 952.233.5279
302 Clayton Findley . . . 04 952.496.2067
302 Juli Findley . . . 04 952.496.2067
308 Brian Fonderulia . . . 05 NP
211 Randy Fraser . . . 05 952.233.2695
104 Mark Friesen . . . 97●952.403.0773
205 David James Glaeser . . . + NP
309 Jeremy Gosewisch . . . 02 952.445.8329
♣Todd Groskreutz . . . 02 NP
202 Guy Halligan . . . + NP
222 Thomas Hartmann . . . + NP
109 James Hartzell . . . + NP
106 Lindsey Hatten . . . 03 NP
110 Kari Johnson . . . 99 952.233.1064
320 Omar Juarez . . . 04 952.496.2271
320 Yakeline Juarez . . . 04 952.496.2271
322◊ Treva R Lundquist . . . 04 NP
214 Eienilson R Machado . . . 05 NP
305 Hila Marie Mason . . . 04 NP
218 Mike Gerald Miklas . . . 04 NP
108 Zach Miller . . . + NP
113 Geronimo Orozco . . . 03 952.233.0281
113 Maria Orozco . . . 03 952.233.0281
♣Lee A Ramirez . . . 05 952.445.9481
322◊ Matt Ethan Realander . . . 04 NP
♣Uvel Renovero . . . + 952.496.1571
103 Alberto Rivera . . . + 952.402.9385
103 Gerardo Hernandez Rivera . . . + 952.496.1931
312 Javier Rodes . . . 03 952.403.6290
214 Sean Sabetti . . . + 952.496.9043
210 D Cruz Sevilla . . . + NP
209 Sumit Sreesth . . . + NP
108 Jake I Standafer . . . + NP
301 Shaylene Stordahl . . . 04 NP
112◊ Ronnie Maria Theis . . . 03 952.402.0312
112◊ Dori Ann Theis . . . 03 952.402.0312
316 Marisa Lynn Trail . . . 00 952.736.1762
♣Pi N Vongphouthone . . . 01 NP
306 Kelly Wagner . . . + NP
204 Steven Fredrick Whers . . . 05 952.417.5372
★♣ White Pines Apartments 01 952.233.0800
207 Michael A Woessner . . . 00 NP
3 Daniel Wold . . . 01 NP
1792 Kenneth Lee Chermak . . . 99●952.445.6020
Sandra L Chermak . . . 99●952.445.6020
1796 Howard C Schmitt . . . 76●952.445.5136
Phylmathie Schmitt . . . 76●952.445.5136
1802 Donald McCoiman . . . 02●952.496.9830
Marie Anne McCoiman . . . 02●952.496.9830
1803★Amoco Koehnens Certicare + 952.445.2500
★Budget Truck Rental . . . 03 . .
★Koehnens Repair . . . +⊘952.445.2500
★Prior Lake Towing . . . 05 952.447.1950
★Shakopee Mini Storage . . 96 952.445.0030
1812 Cathy A Monnens . . . + NP
1897★Carburation & Turbo Systems Inc
97 952.445.3910
–HAUER TRL INTS
1916 Aaron D Schmidt . . . 04●952.403.7941
★Schmidt Farm Partnership 02 . .
1920 Jason James Orell . . . 04● NP
Lloyd Orell . . . 04● NP
1930 Konstantin Ivan Litvinovich . . . 04●952.808.9451
Olga Nikolayevna Litvinovich . 04●952.808.9451
1940 . . . NP
1960 Bernadette Arendt . . . + 952.403.1916
1970 Mark Cletus Kalal . . . 01●952.403.5198
1980 Vladimir Y Shchepilov . . . 04●952.233.3247
Lyudmila Shchepilova . . . 04●952.233.3247
1990 . . . NP
2000 Patrick Gerald Poop . . . 03●952.403.9817
2078 Bill G Scheurer Jr . . . 90●952.445.2155
Kandi Lynn Scheurer . . . 90●952.445.2155
2114 Apartment
3C♣Shirley A Bader . . . 98 952.445.9115
A Judith A Clay . . . 02●952.445.3933
A Robert A Clay . . . 02●952.445.3933
3C♣David Hartman . . . 98 952.445.9115
C Loretta Jane Monroe . . . + NP
B Darwin Roy Sylskar . . . 03 NP
2154 Jeffrey S Jovaag . . . 82●952.445.1286
Melissa Jo Jovaag . . . 82●952.445.1286
2206 Gary Francis Schmitt . . . 73●952.445.2269
Mary Elizabeth Schmitt . . . 73●952.445.2269
2218 Bradley J Schmitt . . . 01● NP
Denise C Schmitt . . . 01● NP
2232 Dean Clarence Struck . . . 89●952.496.1866
Susi Kay Struck . . . 89●952.496.1866
2256 Shirley Sindelar . . . 82● NP
Van Dieschel Sindelar . . . 82● NP
2304 John Mathias Deliwo . . . 84●952.496.2704
Sharon Lee Deliwo . . . 84●952.496.1160
2328★Kathleen Stafford . . . 01 952.445.5274
Clifford Dennis Stafford . . . 82●952.445.5274
Kathy C Stafford . . . 82●952.445.5274
2360 Howard Sumner Luhmann . . . 82●952.445.3003
Joan Carol Luhmann . . . 82●952.445.3003
2362♣Jane Hauer . . . 05● NP
2368 Sharon Louise Hansen . . . 95●952.496.2376
Wayne Peter Hansen . . . 95●952.496.2376
2445 . . . NP
2449★Hauer Farms Inc . . . 95 952.445.5499
2808 David A Kincs . . . 92● NP
Katie J Kincs . . . 92● NP
3088♣James J Hauer . . . 84●952.445.1739
♣Mary A Hauer . . . 84●320.592.3509
3150★Minnesota Montessori . . . 03 952.402.0303
3650★Kevin M Lusignan . . . 02 952.445.3593
Doreen D Lusignan . . . 76●952.445.3593
Zelene F Lusignan . . . 76●952.445.3593
3801★Shakopee Goodyear . . . + 952.496.2317
3901★Holiday Stationstore 364 . 05 952.445.4813
3960 Jesse C Webster . . . 75●952.445.2059
Mark Charles Webster . . . 75●952.445.2059
4731 Edward B Fornier Jr . . . 94●952.445.7051
Wendy Marie Fornier . . . 94●952.445.7051
4751 Keith John Clemens . . . 82●952.445.1517
Sandy Jane Clemens . . . 82●952.445.1517
4767 Troy E Jensson . . . 76●952.445.4349
Virginia V Jensson . . . 76●952.445.4349
4815 Edna Catherine Wealen . . . 62●952.496.1890
4835 Ellen M Qualy . . . 82●952.445.7345
Steve John Qualy . . . 82●952.445.7345
4855◊ Kathy Lynn Gerlach . . . 87●952.445.7179
◊ Melissa Gerlach . . . 87●952.445.7179
★Glissade Ski Products . . . 04 952.496.1927
★High Level Ice . . . 98 . .
★James Gerlach Photography 04⊘952.496.1927
4915 Gary Thomas Sorenson . . . 79●952.445.8460
Teresa Marie Sorenson . . . 79●952.445.8460
4935◊ Catherine Marie Effertz . . . 76●952.445.3165
◊ Edward Rapheal Effertz . . . 76●952.445.3165
4955 Craig Allen Hotzler . . . 77●952.445.5386
Pamela Marie Hotzler . . . 77●952.445.5386
4965♣Brian Larson . . . 01 NP
♣Paula Larson . . . 01 NP
5015★Gordon Grannes . . . 01 952.496.1374
Gordon Everett Grannes . . . 95●952.496.1374
Lavon E Grannes . . . 95●952.496.1374
5025 Paula Marie Stark . . . 01● NP
5035 David James Stang . . . 80● NP
Dianne Lynn Stang . . . 80● NP
★Stang Concrete Co Inc . . . 97 952.445.7967
5065◊ Gerald Allen Popp . . . 76●952.445.6643
◊ Julie Adelaide Popp . . . 76●952.445.6643
5085 John Leroy Barker . . . 90●952.445.1790
Marlys Jean Barker . . . 90●952.445.1790
5215 Daun Ann Reeves . . . 96●952.445.4975
5250 Melanie Jo Smith . . . 85●952.445.9322
Patrick George Smith . . . 85●952.445.9322
5262 Bill David Czaja . . . 78●952.445.8071
Patricia Ann Czaja . . . 78●952.445.8071
5264 Chris P Link . . . 97●952.445.2482
James Allen Link Jr . . . 97●952.445.2482
5310 Heidi Joyce Graf . . . 94●952.445.0744
5331 Robert Allen Lambrecht . . . 99●952.445.6380
5362♣Harlan Henry Haworth . . . 82●952.445.4199
♣Karen Allene Haworth . . . 82●952.445.4199
5370 Donna J Peterson . . . 90●952.445.2108
5371★Helens Aunt Book Nook . . 05 . .
James E Yanisch . . . 04●952.496.2948
Leslie Yanisch . . . 04●952.496.2948
5380 . . . NP
5411 James E Pietrzak . . . 75●952.445.7708
Joan Alice Pietrzak . . . 75●952.445.7708
5420 Sally Ann Novak . . . 62●952.445.2456
5765 Jeremy McCrank . . . 72 952.445.1637
Tasha McCrank . . . 72 952.445.1637
6185 Lisa Marie Widman . . . 75●952.445.1880
Robert Thomas Widman . . . 75●952.445.1880
6865 Iceliu Schutrop . . . 04● NP
7051 Mark L Liesener . . . 05● NP
7220◊ Jean Marie Fetzer . . . 96●952.496.2258
◊ Tim Leroy Fetzer . . . 96●952.496.2258
7320♣Steven Muhlenhardt . . . 06● NP
7501 . . . NP
7556 Kathleen Vilma Muhlenhardt . 76●952.496.1307
Steven David Muhlenhardt . 76●952.496.1307
★Steve Muhlenhardt . . . 03 952.496.1307
–MONTECITO DR INTS
7765 Misty Berry . . . 06 NP
Kristie Caverly . . . 04 NP
Chris Renwankle . . . 03 NP
8065 Charlie Suel . . . 03 952.233.3733
8121♣Chad Mitchel Clabaugh . . . 03 952.447.6456
♣Cheri A Clabaugh . . . 03 952.447.6456
8234 Marian S Ferry . . . 78●952.445.4565
8256 . . . NP
8304 Douglas James Waldvogel . 84●952.445.8134
Shirley Ann Waldvogel . . . 84●952.445.8134
8356 8362 . . . NP
8364 Carole Ramona Kusienski . . . 79●952.496.1495
Kristen Maria Kusienski . . . 79●952.496.1495
8370◊ Scott Alan McKenzie . . . 02●952.445.8356
◊ Terri Marie McKenzie . . . 02●952.445.8356
8380 Mark R Minea . . . 01●952.445.3076
Michelle R Minea . . . 01●952.445.3076
8450 Deborah L Schmidt . . . 86●952.496.1158
Steven Lee Schmidt . . . 86●952.496.1158
★Schmidt Contracting Inc . 91 952.496.1158
8455 Kenneth J Kraft . . . 05● NP
Sonya D Kraft . . . 05● NP
8464★General Signal Corp . . . 02 952.496.1141
Heidi Jane Nasby . . . 96●952.496.2583
Ronald L Nasby . . . 96●952.496.2583
8535◊ Christopher Olson . . . 94 NP
◊ Dawn Olsonn . . . 94 NP
8537 8735 . . . NP
RR13 8088 - 8920 55379
8868◊ Eric C Goetzinger . . . 04●952.233.3509
8911 Jason Garland . . . + NP
8920 Joseph Lawrence Kelly . . . 93●952.496.1513
Ruth Anne Kelly . . . 93●952.496.1513
245 RESIDENCE 24 BUSINESS

EAGLE CREEK CIR NW

Prior Lake
CT 809.03 0 3835 - 3943 $A
RR12 0 3835 - 3943 55372
3835 Michael Andrew Crooks . . . 92 952.447.6956
Renate Elizabeth Crooks . . . 92 952.447.6956
★Northwestern University . + . .
3839◊ Rebecca Ann Crooks . . . 96●952.447.1724
◊ Mark Person . . . 96●952.447.1724
3847 Alan Martin Prescott . . . 92 NP
3863 Robert Mark Prescott Sr . . . 99 952.447.5234
3879 Cynthia L Breda . . . 99● NP
Richard John Breda . . . 99● NP
3895 . . . NP
3911 Barbara Feezor . . . 98 952.440.6141
John L Feezor . . . 98 952.440.6141
3927★Cecelia Saint Pierre . . . 05 952.440.2978
Cecelia Mae Stpierre . . . 97 NP
3943 Vernon Anderson . . . 05 NP
13 RESIDENCE 2 BUSINESS

EAGLE CREEK PKWY

Savage
CT 802.01 8401 - 12900 $B
CT 802.02 8600 - 8690 $A
RR1 8401 - 12900 55378
8401★♣ Chies Manufacturing . . 04 800.582.6480
8600★Carnegie Commercial Lending In + . .
8608★Newtown Solutions Inc . . 02 . .
8619★Sew Rite . . . 01 952.736.1514
8632★Cecere Lund Properties Llc + . .
8639★♣ Dunsmore Co Of Minnesota 05 . .
★♣ Wholesale Office Solution 05 . .
8675★K L Tannehill Inc . . . 77 952.881.6700
8690★Coagulite . . . 05 952.886.8200
12900★B F Nelson Corp . . . 01 952.746.6300
10 BUSINESS

EAGLE CREST DR

Saint Paul
CT 607.35 4272 - 4322 $C
4272 - 4322 55122
–BEAR PATH TRL INTS
4272 Gail Marie Menk . . . 85●651.452.6147
Gregg James Menk . . . 85●651.452.6147
4275◊ Cathy R Mohs . . . 00●651.454.1754
◊ Thomas R Mohs . . . 00●651.454.1754
4276 Judith Sue Avery . . . 04●651.454.8175
4279 Andy J Rawkins . . . 01●651.675.0573
Annette S Rawkins . . . 01●651.675.0573
4280 Sandra Sue Sutter . . . 94●651.621.1675
4283★Family Grocery & Dollar Store 05 651.688.3520
Seleshi Megenta . . . 04 651.688.3520
4284 Joan Helen Bergstrom . . . 55●651.456.9500
John Edward Bergstrom Sr . 05●651.456.9500
4287 Gammelgaard Lemke . . . 03●651.994.4793
Matthew J Lemke . . . 03●651.994.4793
4288 Alva Steve Beats . . . 92●651.905.0419
Barbara Ann Beats . . . 92●651.686.7059
4291 Ravisankar L Gurusamy . . . 00●651.405.9047
4292 Stephen Alan Feeley . . . 82●651.452.5524
Wendy Jeanne Feeley . . . 82●651.452.5524
4295 Diane Denise Anderson . . . 89●651.688.9461
Gale Mark Anderson . . . 89●651.688.9461
★Practical Family Law . . . + 651.688.9461
4296 David L Majerus . . . 91● NP
Marc E Majerus . . . 91● NP
4300 David Malcolm Hasselmann . 78●651.452.7087
Kim D Hasselmann . . . 78●651.452.7087
4301 Gregory Les Thovson . . . 85●651.456.9340
Laura Renee Thovson . . . 85●651.456.9340
4304◊ Dennis Eugene Arneson . . . 89●651.683.9895
4308 James Otto Hamagel Jr . . . 90●651.452.7857
Lizabeth Lynn Reyer . . . 90●651.452.7857
★Reyer Coaching & Consulting Inc
05 651.452.7857
4309 Joe Thomas Ryan Jr . . . 88●651.687.0897
Karen Lynn Ryan . . . 88●651.687.0897
4312 Sue Eileen Dufloth . . . 85●651.456.9690
4313 Naomi Lee Plowman . . . 86●651.452.5433
Philip William Plowman . . . 86●651.452.5433
4316 Carol Sue Krueger . . . 05● NP
4317 Brenda Jane Zirbel . . . 77●651.456.9087
Francis John Zirbel . . . 77●651.456.9087
4318 Brad Ellis . . . 91●651.688.2619
Deb Lynn Ellis . . . 91●651.688.2619
4320 Julio Ige . . . 91● NP
Maria Ige . . . 91● NP
4322◊ Daniel W Wiese . . . 85●651.452.5068
◊ Sherryw A Wiese . . . 85●651.452.5068
41 RESIDENCE 3 BUSINESS

N EAGLE LAKE BLVD

Osseo
CT 267.13 10680 - 11388 $B
10680 - 11388 55369
10680 Michael S McPherson . . . 97●763.315.3411
Patricia Lynn McPherson . . . 97●763.315.3411
10692★Adaptive Aerodynamics . . 05 763.425.2048
Lori N Breidenbach . . . 94●763.425.2048
Thomas Scott Breidenbach . 94●763.425.2048
★Learning Styles Resources + . .
10714◊ Aimee Johnson . . . 03●763.315.1165
◊ Stephen Johnson . . . 03●763.315.1165
10726 Leslie Rae Lundgren . . . 94●763.424.8944
Rick Allen Lundgren . . . 94●763.424.8944
10848 Mary Margaret Urquhart . . . 94●763.425.1067
Michael A Urquhart . . . 94●763.425.1067
10880◊ Joan Kroehnert . . . 96●763.315.0408
◊ Paul D Kroehnert . . . 96●763.315.0408
–71ST AVE N INTS
10902 Victoria Ann Johnson . . . 93●763.425.9513
10913 Anne Bigelow Rowland . . . 89●763.391.6375
Mark Douglas Rowland . . . 89●763.425.6464
10924★Mortgage Loan Processing Center
01 763.424.3380
★Soft Touch Photography Inc 94 763.424.4497
Lisa L Zuleski . . . 93●763.424.3380
Richard O Zuleski . . . 93●763.424.3380
10945 David C Wolter . . . 03● NP
Dee Wolter . . . 03● NP
10956 David Walter Rymanowski . . 93●763.425.5146
Jane Marie Rymanowski . . . 93●763.425.5146
10967 Shane M Lofner . . . 92●763.425.2130
10989 Daniel Mark Moe . . . 89● NP
Linda Marie Moe . . . 89● NP
–XIMINES LN N INTS
11021 Roxanne Marie Cassidy . . . 89●763.424.8803

EAGLE CREEK AVE SE
Prior Lake

E 15900–16098 CT 809.02 $B..
E 16200–16298 CT 809.02 $B..

RR14 16000–16098 E . . . 55372

16000 Bette A Humphrey .91 ▪ 952-447-4055
16010 Raymond J Joachim + ▪ NP
16020 Jon J Frank . . . + ▪ NP
Lisa S Frank . . . + NP
16030 Kevin J Bergstrom .85 ▪ 952-447-1466
16044 Ron H Carter . . .99 952-402-0139
Tenis L Carter . . .99 952-440-9948
16058 James A Dahl . .94 ▪ 952-440-3972
16072 Beth A Brazier . .76 ▪ 952-447-4736
Charles R Brazier .76 ▪ 952-447-4736
16084 Cheryl A Leaf . .90 ▪ 952-440-3326
Dean E Leaf . . .90 ▪ 952-440-3326
16094 Donald J Spece . .96 ▪ 952-447-4797
Kathy M Spece . .96 ▪ 952-447-4797

RR 7 55372

▪▪ LAKESIDE AVE SE INTS
16250 ★ Prior Lk City ASK 952-447-9888
★ Prior Lk Cty Bldg 952-447-9850
★ Prior Lake Cty Hll 952-447-4230
★ Prior Lk City DNC 952-447-5788
★ Prior Lk Cty Engrg 952-447-9830
★ Prior Lk Cty Fire 952-447-9840
★ Prior Lake Cty Fr ⊙ 952-447-4230
★ Prior Lk Cty Libm 952-447-3375
★ Prior Lk Cty Lcns 952-447-9817
★ Prior Lk City Mystc 99 952-445-9000
★ Prior Lk Prks&Rec 952-447-9820
★ Prior Lk Prks&Rec 952-447-9825
★ Prior Lk City Plan 952-447-9810
★ Prior Lk City Plc 952-440-3565
★ Prior Lk City WTR 952-440-9675
16210 ★ City Perks Inc . . 952-226-2489
★ Scott Co Govt Ctr 952-447-3375
14 RESIDENCE 17 BUSINESS

EAGLE CREEK BLVD
Shakopee

E 1300–1398 CT 803 $B..
1700–8999 CT 803 $B..

RR18 55379

1324
D Angell . . . .00 NP
Wendy Arnold . . .00 NP
213 Maria S Arreola . .00 952-496-9634
3 C Bender . . . + NP
Kenneth D Berg . + 952-233-1424
315 Joseph Brossart . + 952-403-9807
315 Joseph A Brossart + 952-403-9807
105 Paul Capperiano . + 952-445-2390
101 Sheila J Carter . .00 952-233-3468
314 Christian R Clair .02 NP
115 Carlos R Collazo .00 NP
212 Emma Crowfeather 02 952-445-6924
107 Melissa Dahlke . .00 952-496-2217
107 Noi Dahlke . . .00 952-496-2217
307 Egle Dedelaite . .00 952-233-1481
122 Kathy I Elinger . .95 NP
122 Parrish T Elinger .95 NP
308 Ryan Erp . . . . + 952-233-5694
308 Ryan S Erp . . . + 952-233-5694
320 Ed J Everson . . .88 ▪ 952-496-1444
320 Paula A Everson .88 ▪ 952-496-1444
Chris Ferschl . . .00 952-403-6697
306 Mark R Genje . . .00 NP
211 P Garcia 02 952-403-6710
222 James Gunderson . + 952-403-9348
Lisa C Hauck . . .00 NP
114 Lisa J Henderson .00 952-403-6601
209 Sutma Hernandez . + 952-403-6718
305 Van T Ho . . . .00 NP
Chris Horn . . . .00 NP
317 Trinh Huynh . . .00 NP
102 Alberto Islordia . .00 NP
216 Brian Laurel . . .00 NP
215 Xiaoying Li . . . + NP
116 Liang Manivahn . .02 952-445-8181
304 Sergio Martinez . .02 952-233-2561
Gary Mueller . . .00 NP
301 Bruce Muhlenhardt .00 952-496-0932
202 Andrea C Pekkala .00 952-402-9113
204 Terry Petersen . .02 952-445-4726
Tamie Quill . . . .00 NP
110 N E Rademacher . + 952-496-0238
110 Nathan Rademacher + 952-496-0238
217 Robert A Rauchman 91 952-445-8189
217 Susan A Rauchman 91 952-445-8189
325 Michael Z Reising + NP
302 Alberto Sanchez . + 952-496-0572
C L Smith . . . .00 NP
210 Oralia Soria . . .00 952-403-5992
207 Edward Soto . . + 952-402-9567
Jessica Stoneburg .00 NP
111 Dan B Strommer . + 952-403-6049
M Studnicka . . .00 952-496-0064
311 Debra M Vickmark 00 NP
311 Robert B Vickmark 00 NP
201 George H Williams 00 952-233-3663
322 Tao Zhang 02 952-233-1083
203 Lina Zlovats . . .02 952-233-1619
★ White Pines Apt . 952-496-1775

1364
Mike Anderson . . .00 NP
307 Heather Bickert . + 952-233-4095
302 David R Bloom . .00 952-445-6296
316 Brian Braun . . . + 952-445-3077
303 Joel E Collette . .02 952-233-3047
303 Stacy M Collette .02 952-233-3047
105 Michael L Connedy + NP
105 Ryan L Connedy . + NP
308 Jennifer L Connyde 00 NP
104 Larry D Dow . . .00 NP
Ralph E Duscher . .00 NP
M Eckhart . . . .00 NP
312 Janet E Finley . .00 NP
1001 Wilfredo J Galvez .00 NP
Andrius Garkauskas 00 NP
111 Massoud M Gholami + NP
215 G E Gonzalez . . .00 952-233-5528
214 A H Grosskreutz . .00 952-233-5420
Veronica Guardado + NP
Trista R Hagen . .00 NP
216 Robert E Hansen .00 952-233-2750
Gary Hatting . . .00 952-402-9641
D K Helgerno . . .02 952-233-3419
S Hermber . . . .00 NP
116 Julie K Hruska . .00 NP
207 Irina Kleynerman .02 NP
Tammy Lee 02 952-233-8008
Katina A Leonard .00 NP
N Leonard . . . .00 NP
Joan Longhenry . .00 NP
113 Jose Lopez . . . + 952-233-2686
315 Tang Manivanh . .00 952-233-1551
212 Kari Manthei . . .00 952-445-7296
301 Joseph Martinez . .00 952-233-2531
103 Shelley L Maxwell 94 952-496-9090
103 Todd A Maxwell .94 952-496-9090
304 Ming Ni 02 952-403-1951
109 Helen Pham . . . + 952-445-1799
117 Bill Pierskalla . .00 NP
213 Gabriel Ponce . . + 952-445-3953
313 Cath E Randolph . + NP
313 Jeffrey D Randolph + NP
205 Jason L Rokusek .02 NP
322 Catherine Scott . .00 952-402-0455
322 Trevor L Scott . .00 952-402-0455
306 Bruce Selseth . . .00 952-233-5595
220 Victor Silva . . . + NP
314 Curt Sonnek . . . + 952-402-9260
102 Nikhom Sybaraj . .00 952-233-1821
102 Vieng N Sybaraj .00 952-233-1821
118 Son Tran . . . . + 952-233-2671
210 Analika Vargas . + 952-233-4954
Pi N Vongphouthone + NP
320 Shirley E Whiting 00 NP
201 Michael A Woessner 00 NP
3 Daniel Wold . . . + NP
★ White Pines Apt . 952-445-6172
★ White Pines Apt . 952-233-0800

1384 Apartments
Tory C Keith . . . + NP
1792 Kenneth L Chermak 96 952-445-6020
1796 . . . . . NP

▪▪ ROUNDHOUSE CIR S INTS
1802 Jeff J Burmeister .96 NP
1803 Duwayne C Ege . .98 NP
★ Ryder Trck Rnt . 952-496-3344
★ Shakopee Mini Stge 952-445-0030
★ Shakopee Towing ⊙ 952-445-0020
1812 Anton A Antapenko + ▪ NP
1885 David J Stang . .96 NP
Susan Stang . . .96 NP
★ Stang Concrete Co 952-445-7987
1895 ★ P&R Mini Stge Inc 952-445-7149
1897 ★ Crbrtn&Turbo Inc 952-445-3910
★ Propane Egp Ix . 952-445-6070

▪ GORMAN AVE INTS
2078 Christine L Rice .99 NP
2114 Apartments
C Shirley A Beder . .96 952-445-9115
2184 Phyllis C Henson .82 ▪ 952-445-1286

▪▪ SARAZIN ST INTS
2206 Gerhard F Schmidt 73 952-445-2269
Mary E Schmidt . .73 952-445-2269
2218 Bradley J Schmidt + ▪ NP
2232 Dean C Struck . .89 952-496-1666
Sue K Struck . . .88 952-496-1666
2304 John M Dellwo . .84 ▪ 952-496-2704
Sharon L Dellwo . .84 ▪ 952-496-2704
2328 C D Stafford . . .82 ▪ 952-445-5274
Kathy C Stafford .82 ▪ 952-445-5274
2350 Howard S Luhmann 82 ▪ 952-445-3003
Joan C Luhmann . .82 ▪ 952-445-3003
2388 Sharon L Hansen .95 ▪ 952-496-2376
Wayne P Hansen .95 ▪ 952-496-2376

▪ CANTERBURY RD INTS
2419 Steven J Heller . .00 NP ◊
Vicki J Heller . . .00 NP ◊
★ Heller Drywl Serv 952-496-2525
★ Premium PRO Flrs 952-445-4135
2447 Alexa Allred . . .95 NP
2449 . . . . . NP
2866 David A Kincs . .91 952-496-2204
Kathleen J Kincs .92 952-496-2204
3001 . . . . . NP
3089 J A Yates . . . + 952-403-1754
3150 ★ Cap Agency . . . 952-402-0303
3856 Doreen D Lusignan 76 952-445-3593
Zefere F Lusignan 78 952-445-3593
3755 ★ Shakopee City of 952-233-0206

▪ JASPER RD INTS
3960 Scott M Bruce . . + NP

RR 1 55379

4731 Edward B Fonnier .94 ▪ 952-445-7051
Wendy M Fonnier .94 ▪ 952-445-7051
4751 Keith J Clemens .82 ▪ 952-445-1517
Sandy J Clemens .82 ▪ 952-445-1517
4764 Therese M Higgins 00 NP
4767 Troy E Jensson . .76 ▪ 952-445-4349
4815 Apartments
D Edna C Wasley . .82 ▪ 952-496-1890
4835 Apartments
2 Ellen M Qualy . .82 ▪ 952-445-7345
2 Steve J Qualy . .82 ▪ 952-445-7345
4855 Kathy L Garlach .87 ▪ 952-445-07179
★ Glead Ski Prdcts . 952-496-1927
4915 Gary T Sorenson .79 ▪ 952-445-8460
Teresa M Sorenson 79 ▪ 952-445-8460
4935 Cath M Effertz . .76 952-445-03165
Edward R Effertz . .76 952-445-03185
4955 Craig A Hotzler .77 ▪ 952-445-5386
Pamela M Hotzler .77 ▪ 952-445-5386
★ Craiga Tankfarmy 952-445-6814
4985 Brian Larson . . + 952-233-0166
Paula Larson . . . + 952-233-0166
5015 Gordon E Grannes .95 952-496-1374
Lavon E Grannes .95 952-496-1374
5025 Paula M Stark . . + NP
5035 . . . . . NP
5055 Gerald A Popp . .76 ▪ 952-445-06843
Julie A Popp . . .76 ▪ 952-445-06843
5085 John L Barker . .90 952-445-1790
Marlys J Barker .90 952-445-1790

▪ SHARON PKWY INTS
5215 James W Goodall . + ▪ NP
5250 . . . . . NP
5262 Bill D Czaja . . .78 952-445-8031
5284 Chris P Link . . .97 ▪ 952-445-2482
Kathryn L Link . .97 ▪ 952-445-2482
5331 Rob Lambrecht . .82 ▪ 952-445-6360
5352 Harlan H Haworth 82 952-445-04199
5370 Donna J Peterson 90 952-445-2108
5371 Dolores T Zak . .86 ▪ 952-445-7817
Joseph F Zak . .86 ▪ 952-445-8828
5380 Chad A Haworth .76 ▪ NP
5411 James E Pietrzak .75 ▪ 952-445-7708
5420 Sally A Novak . .82 ▪ 952-445-7456
5765 George Shutrop . .72 952-445-1637
6165 Lisa M Widman . .75 ▪ 952-445-1880
Robert T Widman .75 ▪ 952-445-1880
6855 Janice J Shutrop .82 ▪ 952-445-3952
Norman A Shutrop .82 ▪ 952-445-3952
7051 Chris E Thompson .00 ▪ 952-233-5127
Katy L Thompson .00 952-233-6127
7220 Jean M Fetzer . .96 ▪ 952-496-2258
Tim L Fetzer . . .96 ▪ 952-496-2258
7301
2 Terrance W Hanson 88 952-496-3038
★ Eagle Crk Stables 952-445-7222
7501 Joel M Liesener .00 ▪ NP
7556 A K Muhlenhardt .76 952-496-1307
S D Muhlenhardt .76 952-496-1307

▪ MONTECITO DR INTS
7755 Kristi J Lucast . .82 952-445-7305
Tracy K Lucast . .82 952-445-7305
7835 Gerald D Klagstad .82 952-445-08438
Lucy A Klagstad .82 952-445-08438
8065 C Rodehaver . . + 952-403-1703
8234 Marian S Ferry . .76 952-445-4585
8256 Raymond E Hoffman 75 ▪ 952-445-1038

▪▪ HILLDALE DR S INTS
8304 B J Waldvogel . .84 ▪ 952-445-8134
S A Waldvogel . .84 ▪ 952-445-8134
8358 J M Schubert . .82 952-445-0249
Randy A Schubert .82 952-445-7227
8362 David S McIntosh .91 NP
Toni E McIntosh .91 NP
8364 Joseph D Prichett .88 ▪ 952-496-0574
8370 Mary J McKenzie .82 ▪ 952-445-4451
8380 Elaine M Dahl . .76 ▪ 952-445 ▪ 4806
Orval M Dahl . . .76 ▪ 952-445 ▪ 4806

▪ MUHLENHARDT RD INTS
8450 . . . . . NP
8455 Apartments
B1 Kevin M Bailey . .92 ▪ 952-496-3331
B1 Pam S Bailey . . .92 ▪ 952-496-3331
8464 Heidi J Nasby . .98 ▪ 952-496-2583
Ronald L Nasby .96 ▪ 952-496-2583

▪ FOOTHILL TRL INTS
8535 Ava G Olson . . .94 952-233-3686
Chuck J Olson . .94 952-233-3686
8537 Greg A Hanks . .95 ▪ 952-445-03547
Twila R Hanks .95 ▪ 952-445-03541
8735 Ann M Kraayenbrink 78 ▪ 952-445-5376
L H Kraayenbrink .78 ▪ 952-445-5376
8808 George W Quist .94 NP
8911 . . . . . NP
8920 Joseph L Kelly . .93 ▪ NP
232 RESIDENCE 17 BUSINESS

EAGLE CREEK CIR NW
Prior Lake

3800–3999 CT 810 $B..

RR12 55372

3815 Jacob D Crooks . .92 952-447-6839
Renate E Crooks .92 952-447-6934
3835 Michael A Crooks .92 952-447-6956
3839 Becca Crooks . .96 ▪ 952-447-01724
Tyanna M Crooks .96 ▪ 952-447-01724
3847 Ann M Prescott .92 NP
3863 Robert M Prescott 98 952-447-5234
3895 Bobby J Heinrich .96 ▪ NP
3911 . . . . . NP
3927 Cecelia M Spierre .97 952-440-2978
Cecelia M Spierre .97 952-440-3823
3943 James H Spierre .98 952-440-5209
James H Spierre .98 952-440-5212
13 RESIDENCE

EAGLE CREEK PKWY
Savage

12600–12999 CT 802 $B..

RR 1 55378

12900 ★ Nelson B Fiday Inc 952-746-8300
1 BUSINESS

EAGLE CREST DR 55122
Saint Paul

4200–4399 CT 607.23 $C..

▪ BEAR PATH TRL INTS
4212 Rollie Menk . . .89 ▪ NP
4272 Gail M Menk . . .85 ▪ NP
4275 Cathy R Mohs . .00 ▪ 651-454-01754
Thomas R Mohs .00 ▪ 651-454-01754
4276 Stevan J Williams .94 ▪ 651-687-0553
4279 Annents Hawkins . + ▪ 651-675-0573
A S Kreikemeier . + ▪ 651-675-0573
4280 4281 . . . . . NP
4283 V A Kladnitsky . .93 ▪ 651-687-0379
4284 Joan H Ammann .85 ▪ 651-456-9500
John E Bergstrom .85 ▪ 651-456-9500
4287 John F Preiner . .94 ▪ 651-452-3682
Lori M Preiner . .94 ▪ 651-452-3682
4288 Alva S Beats . . .92 ▪ 651-905-0419
Barbara A Beats .92 ▪ 651-905-0419
4289 4291 . . . . . NP
4292 Stephen A Feeley .82 ▪ 651-452-5524
Wendy J Feeley . .82 ▪ 651-452-5524
4295 Diane D Anderson .89 ▪ 651-688-9481
Gale M Anderson .89 ▪ 651-688-9481
4296 Dawn L Majerus .91 ▪ NP
4300 David M Hasselmann 78 ▪ 651-452-7087
Kim D Hasselmann .78 ▪ 651-452-7087
4301 Gregory L Thovson 85 ▪ 651-456-9348
Laura R Thovson .85 ▪ 651-456-9348
4304 Michael L Batton . + ▪ 651-994-1431
4305 Phung K Nguyen .96 ▪ 651-452-5471
Gui P Nguyen . .88 ▪ 651-452-5471
4308 James G Harnagel .90 ▪ 651-452-7857
4309 Joe T Ryan . . .88 ▪ 651-687 ▪ 0897
Karen L Ryan . . .88 ▪ 651-687 ▪ 0897
4312 Susan E Bulloth .85 ▪ 651-456-9690
4313 Naomi L Plowman 86 ▪ 651-452-5433
Philip W Plowman .86 ▪ 651-452-5433
4316 B J Hultquist . . .94 ▪ 651-688-07274
Karla T Hultquist .94 ▪ 651-688-07274
4317 Brenda J Zirbel . .77 ▪ 651-688 ▪ 6185
Francis J Zirbel . .77 ▪ 651-456 ▪ 9087
4318 Deb L Eitts . . . .91 ▪ 651-688-2619
4320 Julio Ige . . . .91 ▪ NP
4322 Daniel M Wiese .85 ▪ 651-452-05068
Sharyl A Wiese .85 ▪ 651-452-05068
44 RESIDENCE

EAGLE DR
Waconia

1300–1499 CT 903 $C..

RR 2 55387

1321 Gladyce M Heine .96 ▪ 952-442-3314
John C Heine . . .96 ▪ 952-442-3314
1323 Herbert F Vaneyll .96 ▪ 952-442-6209
1433 Andrew R Brenny .99 ▪ 952-442-1191
1435 Carolyn G Bjelland .99 ▪ 952-442-8715
James N Bjelland .99 ▪ 952-442-8715
1437 . . . . . NP
1439 Barbara A Vetner .94 ▪ 952-442-8498
Robert L Vetner .94 ▪ 952-442-8498
1452 Ed D Wandhauser .95 ▪ NP
1454 Mary A Evenson .99 ▪ 952-442-08714
1456 Mary K Vanoyne .94 ▪ 952-442-8493
1458 Leona C Aretz . .96 ▪ 952-442-8643
13 RESIDENCE

N EAGLE LAKE BLVD 55369
Osseo

10600–11399 CT 267.13 $A..

10668 . . . . . NP
10680 Michl S McPherson .97 ▪ 763-315-3411
P L McPherson . .97 ▪ 763-315-3411
10692 Lori N Breidenbach .94 ▪ 763-425-2048
Thos S Breidenbach 94 ▪ 763-425-2048

▪▪ 71ST AVE N INTS
10714 Joseph D Connell .95 ▪ 763-315-08778
Sheila A Connell . .95 ▪ 763-315-08778
10726 Leslie R Lundgren .94 ▪ 763-424-8844
Rick A Lundgren . .94 ▪ 763-424-8844
10848 Mary M Urquhart .95 ▪ 763-425-8701
Michael A Urquhart 95 ▪ 763-425-1067
10880 10907 . . . . . NP
10913 Anne B Rowland .89 ▪ 763-425-6464
Mark D Rowland .89 ▪ 763-425-6464
10924 Lisa L Zuleski . 93 ▪ 763-424-3380
Richard D Zuleski .93 ▪ 763-424-3380
★ Mrigg Ln Pecag Ctr 763-493-5898
10945 David D Presler . .94 ▪ 763-425-5462
Tamara S Presler .94 ▪ 763-425-5462
10956 David W Rymanowski 93 ▪ 763-425-5146
Jane M Rymanowski 93 ▪ 763-425-5146
10967 L P Buffington . .88 ▪ 763-493-2513
Thos E Buffington .89 ▪ 763-493-2513
10989 Daniel M Moe . .89 ▪ NP

▪ XIMINES LN N INTS
11021 Roxanne M Cassidy 89 ▪ 763-424-8803
Terrance P Cassidy 89 ▪ 763-424-8803
11053 Betty J Krutzig . .89 ▪ 763-493-03617
David J Krutzig . .89 ▪ 763-493-03617

▪ YORKTOWN LN N INTS
11114 Kristyna L Phelps .96 ▪ 763-425-9113
Sandra A Phelps .96 ▪ 763-425-9113

▪▪ 70TH PL N INTS
11215 Bryan S Leasure .96 ▪ 763-425-9840
Jennifer Leasure .96 ▪ 763-425-9840
11216 Randy L Borgeson .92 ▪ 763-425-6759
Suzanne R Borgeson 92 ▪ 763-425-5697
★ Bryan Randy&Szan 763-425-6759
★ Bryan Randy&Szan 763-425-5697
11227 Judith A Snadeker .92 ▪ NP
11228 Greg R Pietrowski .94 ▪ 763-424-5056
R J Pietrowski . .94 ▪ 763-493-4181
11249 Dennis C Peri . .91 ▪ 763-425 ▪ 4730
11250 Brian L Barnett .89 ▪ 763-424-9490
Ellen M Barnett .89 ▪ 763-424-9490
11261 Douglas E Degroot 94 ▪ NP
11262 Daniel J Durdin . 93 ▪ 763-493-05260
Shari L Durdin . .93 ▪ 763-493-05260
11273 Joy M Asp . . .94 ▪ 763-425-8570
Paul A Asp . . . .94 ▪ 763-425-8570
11274 Julie M Linder . .90 ▪ 763-424-6093
Scott M Linder . .00 ▪ 763-424-6093
11285 Daniel L Bergeron .92 ▪ 763-424-6886
Deborah A Bergeron 92 ▪ 763-424-6886
11286 Jeff A Marcella .99 ▪ 763-425-4828
11294 Craig R Aakhus . .91 ▪ 763-493-5371
Jill E Aakhus . . .91 ▪ 763-493-5371
11297 Michael Fangman .99 ▪ 763-493-9073
11302 Barry S Mikulski .96 ▪ 763-315-4233
Nancy J Mikulski .96 ▪ 763-315-4233
11304 Janet M Seaman .93 ▪ 763-424-8884
Michael T Seaman .93 ▪ 763-424-8884
11309 Paul E Benson . .92 ▪ 763-493-3468
Susan K Benson .92 ▪ 763-493-3468
11311 Doris M Lemanski .92 ▪ 763-493-2404
Lawr J Lemanski .92 ▪ 763-493-2404
11316 . . . . . NP
11323 Heidi A Tietz . .92 ▪ 763-493-9413
11325 Cheryl J Skelly .94 ▪ 763-425-7594
Michael P Skelly .94 ▪ 763-425-7594
11388 Kevin A Sharp .87 ▪ 763-425-2875
Libby A Sharp . .87 ▪ 763-425-2878
67 RESIDENCE 3 BUSINESS

EAGLE LAKE DR 55369
Osseo

6100–6699 CT 267.13 $A..

6125 Thomas M Hanson .75 ▪ 763-535-4186
6129 Margaret R Rookay .93 ▪ 763-537-6490
Patrick M Rookey .93 ▪ 763-537-6490
6131 Cynthia E Erickson .93 ▪ 763-533-6966
Keith E Erickson .93 ▪ 763-533-6966
6145 K M Adolfson . .92 ▪ 763-533-6589
William E Adolfson .92 ▪ 763-533-6589
6153 James E Dickey .94 ▪ NP
6157 Donna R Johansen + NP ◊
6181 Lawrence A McGough 94 ▪ 763-537-03681
Maureen W McGough 94 ▪ 763-537-03681
6197 David M Laine . .93 ▪ NP

▪ NATHAN LN N INTS
6201 Cynthia S Komarec .76 ▪ 763-537-8615
Ganko Komarec . .76 ▪ 763-537-8615
6202 Joanne C Merten .78 ▪ 763-533-0705
Thomas J Merten .78 ▪ 763-533-0705
6203 Evelyn G Norton .96 ▪ NP
6204 Marlene M Gaige .88 ▪ 763-533-6202
Robert B Gaige . .88 ▪ 763-533-6202
6205 . . . . . NP
6207 Mary M Susick . .72 ▪ 763-536-9603
Richard J Susick .72 ▪ 763-536-9603
6211 Mark Blair . . . + ▪ NP
6213 Larry A Lundquist .78 ▪ 763-537-8381
Pamela J Lundquist 78 ▪ 763-537-8381
6216 Fune L Weiss . .85 ▪ 763-537-6167
William E Weiss .85 ▪ 763-537-6167
6217 Russell L Bowlin .99 ▪ NP
6218 Shirley M Lockwood 80 ▪ 763-533-5631
6219 Amanda K Hall . .75 ▪ 763-533-4115
Kay A Hall . . . .75 ▪ 763-533-4115
6220 . . . . . NP
6222 Joe F Teeple . . .97 ▪ 763-971-0504
6223 Margaret A Hamm .94 ▪ NP
6225 Gary R Krug . . .97 ▪ NP
6227 James L Bebus . .84 ▪ 763-535-1488
Teresa M Bebus .84 ▪ 763-535-1488
6228 Colleen M Rossland 76 ▪ 763-535-3542
Nathan B Rossland 76 ▪ 763-535-3542

. . . . 55337
2109 Blaine Draylahl . . . . – • 707-9396
2112 Joseph Herzog . . . .89 • 890-2592
2113 Larry Anderson . . . – 895-1775
2116 Amy Duckart . . . ¤ • 707-1985
2117 Michael L Nelson . . .90 • 890-3775
2120 Robert Komec 95 894-9643
2121 William O Gudim . . .89 • 890-9889
2124 A Wahidi . . . .95 • 890-2748
2128 Mark S Haider . . .89 • 895-9764
2129 Carlo J Arendt . . . – • 882-0818
2133 Aaron Y Li . . . .89 • 894-3884
Aaron Y P Li . . . ■ 890-2165
12950 . . . . NP •
12954 . . . . NP •
12955 . . . . NP •
12958 Curt Walters . . . ¤ • 707-9040
12962 Nun In 92 894-9064
12963 Richard Hennessey . . .92 895-5002
12966 Andy Olson . . . .89 • 895-9632
12967 Laura Makeymkow . . .96 • 895-8866
Ron Makeymkow . . .96 • 895-8868
12972 Mark L Glubka . . .90 • 894-5051
12975 David Patheck . . .92 • 894-2350
12979 Eric Mahre . . . .93 • 895-6955
12981 . . . . NP
40 RESIDENCE

EAGLE BLUFF DR
New Street–1982.
Minnetrista
3100– 3499 CT 277 $A..E 2
HUDSONS MAP LOC 1C–75

RR 9 55364
3215 Scott Barth . . . .98 • 472-5582
3240 Martin R Besler . . .88 • 472-1771
Dorothy K Ritz . . .88 472-1771
3255 James Tindall Jr . . .89 • 472-7258
3260 Carl Sutherland . . .96 • 472-8942
3265 Joseph Bocklage . . . ¤ • 472-6992
Joseph F Bocklage . . .90 • 472-2590
3275 Steve Freeman . . .89 • 472-4840
3280 Nate Granum . . . ¤ • 472-8595
Roy Granum . . . – • 472-6884
Roy Granum . . . – • 472-2095
3285 John Palombo . . . .98 472○7801
★ Grant&Plmb Svcs . . .96 472-6400
3300 Michael L Gillham . . .87 • 472-6982
3305 Robert E Hester . . .85 • 472-6628
3320 Robert Olsen . . . .96 • 472-5775
Robert Olsen . . . .98 • 472-2220
3325 Phil A Morris . . . .90 • 472○0431
3340 Lisa M Clements . . .89 • 472-4715
3345 William H Magnuson . .85 • 472○3772
3360 Robert C Eckert . . .87 • 472○5879
3365 James Cavanaugh . . .89 • 472-3380
3380 David G Hanson . . .83 • 472-5901
3385 Douglas F Sweet . . .87 • 472-5744
3400 Dean Veltinson . . . .89 • 472-2608
24 RESIDENCE 1 BUSINESS

EAGLE CREEK AVE NE
New Street–1977.
Prior Lake
E 14000–15498 CT 809.02 $A..F 4
O 14001–15499 CT 809.01 $B..F 4
E 15700–15862 CT 809.02 $A..F 4
O 15701–15861 CT 809.01 $B..F 4
HUDSONS MAP LOC 4D–119, 4A–133

RR14 55372
14081 Susan Scully 78 445-1884
Susan Scully . . . ¤ 445-4257
15140 James H St Pierre . . .94 440-5209
15160 Cecelia St Pierre . . . ¤ 440-2978
15170 . . . . NP
15180 Winifred S Feezor . . .89 440-8141
15220 15280 . . . . . . NP
15280 Charles Kimsey . . . ¤ 440-3855
15420 James F Hamilton . . . ¤ • 440-1167
★ Black Mtn Slvr Co . . .93 446-7500
15717 Donald W Scott . . .88 447-4115
15720 . . . . NP
15795 Ben Baer 77 447-2224
15810 15820 15830 . . . NP
15850 . . . . NP
15862★ Prior Lake Tours . . .96 447-4499
★ Wagon Bridge Mrnn . .93 447-4300
17 RESIDENCE 3 BUSINESS

EAGLE CREEK AVE SE
Prior Lake
E 15864–16098 CT 809.02 $A..F 4
O 16001–16299 CT 809.01 $B..F 4
HUDSONS MAP LOC 4A–133

RR14 55372
16000 Bette A Homphrey . . .93 447-4055
16010 John Barncard 95 440-6324
16020 Chris Anderson 95 440-0418
16030 K Bergstrom 88 447-1486
16044 Bonita Hirmer 95 440-2920
Greg F Hirmer 94 440-2314
16058 Jim Dahl 95 440-3972
16072 Charles R Brazier . . .78 447-4736
16084 Dean E Leaf 92 440-3326
16094 D Space 91 440-4400
D James Space 79 447-5225

RR 7 55372
16200★ Prior Lake Cty Hll . . ¤ 447-4230
★ Prior Lk Cty Bldg . . . ¤ ⊙ 447-4230
11 RESIDENCE 2 BUSINESS

EAGLE CREEK BLVD
Shakopee
1400– 8999 CT 803 $B..F 4
HUDSONS MAP LOC 1D–105, 2A–119

RR 4 55379
1796 Howard Schmitt 78 445-5138
1803★ Ryder Trck Rnt One . .96 496-3344
★ Shakopee Mini Stge . .94 445-0030
★ Shakopee Towing . . .88 ⊙ 445-0030
1806★ Tri St Wrckr Sls . . .95 445-4340
1812 Jason J Dubois 98 496-1744
1885★ Donn Elec Frklft . . .93 445-8862
★ Pallet Trucks Plus . . .93 445-6607
1895★ P&R Mini Stge Inc . . .84 445-7149
1957★ Crbrto&Trbo Inc . . .65 445-3910
★ Propane Eqp Inc . . .81 445-6070
1935★ Undrwd J Const Inc . .96 445-5230
2000 2008 2024 2032 . . NP
2048 2056 2064 . . . . NP
2078 Bill Schaurer Jr 95 445-2155
2100 Alexa Allred 89 496-1203
John Clark 88 496-1203
2114 Apartments
C Adam Bader . . . . – 445-9115
B Rick Vangarven 98 445-5107
2184 James H Hanson 84 445-1288
2208 Gary F Schmitt 74 445-2269
2232 Dean Strack 90 496-1668
2256 Van D Sindelar 84 445-2161
2287★ Car Finishing 93 496-2305
2304 John M Deliwo 84 496-2704
2311 Russell Schmid . . . ¤ 496-3586
2328 K C Stafford . . . . – 445-5274
2360 Howard S Luhmann . .84 445-3003
2419★ Als Landscpg&Nrsy . .85 445-6114
2447 Daryl Fahrenkamp . . .94 445-5012

RR 4 2000-2898 E . . . 55379

RR 1 55379
2860 D A Kincs 93 496-2204
3088 James J Hauer 96 445-1739

RR 1 55379
3650 Zefere Lusignan 72 445-3593
3690★ Reds Total Mntnc . . .95 445-8955
3960 Lynn A Webster 86 445-2059
Myron C Webster . . .85 445-2059
4731 Edw B Fonnier Jr . . .95 445-7051
4751 Keith Clemens 91 445-1517
4767 Milo Jensson 78 445-4349
4815 Edna Wealen 78 496-1890
4835 Steve Qualy 95 445-7346
4855 James R Gerlach . . .88 445-7179
★ Gerlach JMS Photo . .89 496-1927
4915 Gary T Sorenson . . .82 445-8480
4935 Edward Effertz . . . .78 445○3165
4955 Craig Hotzler 80 445-5366
4985 James Detjen 90 496-0155
5015 Gordon Grannes 85 496-1374
5035 David J Stang 81 496-0925
5055 Gerald A Popp 78 445-6843
5085 John Barker 92 445-1790
5215 . . . . NP
5250 Patrick G Smith 87 445-9322
5262 David Czaja 79 445-8071
5284 Randy Kubes 94 496-0125
Randy Kubes 89 445-6181
5310 Heidi Graf 95 445-6744
5331 Walter M Heinzen . . .77 445-4822
5352 Harlan H Haworth . . .78 445-4199
5370 Gary Anderson 80 445-2108
5371 Joseph F Zak 87 445-8828
Joseph F Zak . . . ¤ 445-7817
5380 . . . . NP
5411 James E Pietrzak 77 445-7708
5420 S Novak 89 445-2456
5785 George Shutrop 83 445-1637
6185 Robert Widman 95 445-1880
6665 Norman Shutrop 78 445-3962
7051 Dennis L Sigurdson . . .78 445-6844
7220 Daniel Valiant 94 445-0823
7301 Terrance W Hanson . . .89 496-3038
★ Eagle Crk Stables . . .83 445-7222
7501 Thomas Woodruff 93 445-9423
7656 Steven Mahlenhardt . . .78 496-1307
7755 Lynda Lucast 91 445-7305
Tracy Lucast 91 445-8638
7835 Gerald Klegstad . . . .91 445○8438
★ Quality Green Inc . . .89 496-3005
★ Quality Green Inc . . .91 890-1186
★ Quality Green Inc . . .91 941-7857
8065 Joe Locklin . . . ¤ 496-2876
8234 Ralph M Ferry 78 445-4565
8258 Raymond E Hoffman . .78 445-1038
8304 Douglas Waldvogel . . .86 445-8134
8358 Randy Schubert 91 445-7227
8364 Carole R Kusianski . . .78 496-1495
Joseph Prichett . . . .90 • 496-0574
8370 Allen R McKenzie . . .85 445-4461
8380 Orval M Dahl 78 445-4806
8440 . . . . NP
8450 Steven Schmidt 89 496-1158
★ Schmidt Remod Co . . .91 445-8460
8455 Kevin Bailey 93 496-3331
8464 Ronald Nasby . . . ¤ • 496-2583
★ GCA Corporation . . .87 496-1141
8535 C Olson 95 496-2779
8537 Greg Hanks . . . .98 • 445-3647
8735 Lana Kraayenbrink . . .78 445-5376
83 RESIDENCE 20 BUSINESS

EAGLE CREEK CIR NW
Prior Lake
3800– 4099 CT 810 $B..G 4

RR14 55372
3836 M Crooks 85 447-6958
3839 Becca Crooks 92 447-1724
Kim Crooks . . . .92 447○2109
Ty Crooks 94 447-1734
3941 Bob Heinrich 94 440-3498
T Hove 89 440-3498
8 RESIDENCE

N EAGLE LAKE BLVD 55369
Maple Grove
10600–11399 CT 267.13 $A..C 4
HUDSONS MAP LOC 4C–35
10692 Thomas Breidenbach . . ¤ • 425-2048
10714 James A Geisler . . . .96 • 425-5216
10726 Rick Lundgren . . . .96 • 424-8944
10848 . . . . NP
10880 G J Hart . . . .96 • 391-7485
10902 Richard Harrison . . . – • 391-8038
10913 Mark Rowland . . . .91 • 425-8484
10924 Richard Zuleski . . . .95 • 424-3380
10945 David Presler . . . .96 • 425-5462
10956 David Rymanowski . . .95 • 425-5146
10967 Thos E Boffington . . .91 • 493-2513
11021 R Cassidy . . . .91 • 424-8803
11053 David Krutzig . . . .90 • 493-3817
11114 S Phelps . . . ¤ • 425-9113
11215 Bryan Leasure . . . ¤ • 425-9840
11216 Randy Borgeson . . . .94 • 425-6759
11228 Greg Pietrowski . . . .85 • 424-5058
11249 M E French . . . .93 • 425•4730
Dennis C Piern 93 425-4730
11250 Brian Barnett . . . .90 • 424-9490
11262 Dan Dordin . . . .94 • 493•5280
11273 Paul A Asp . . . .95 • 425-8570
11274 James A Rodberg . . .94 • 425-6161
11285 Daniel Bergeron . . . .93 • 424-6888
11286 . . . . NP
11294 Craig Aakhus . . . .93 • 493-5371
11297 Jessica Fangman . . . ¤ 493-5503
Michael Fangman . . . .93 • 493-9073
11302 Barry S Mikulski . . . – • 315-4233
11304 Michael Seeman . . . .94 • 424-8884
11309 . . . . NP •
11311 Larry Lemanski . . . .93 • 493-2404
11318 Tony Weber . . . .93 • 493-2639
11323 H A Tietz . . . .94 • 493-9413
11325 Michael Skelly . . . .95 • 425-7594
11388 K M Sharp . . . .98 • 425-2875
38 RESIDENCE

EAGLE LAKE DR 55369
Maple Grove
6100– 6699 CT 267.13 $A..C 4
HUDSONS MAP LOC 5D–35, 1D–36
6125 Thomas Hanson . . . .76 • 535-4186
6129 M R Rookey . . . .95 • 537-6490
6131 Keith Erickson . . . ■ 533-8966
6145 . . . . NP
6153 James Dickey . . . .96 • 531-0677
6155 . . . . NP
6157 Todd Hafterson . . . ■ 533-9840
6181 Larry McGough . . . .95 • 537-3681
6201 Genko Komarec . . . .84 • 537-8615
6202 Thomas J Merten . . . .79 • 533-0705
6203 Bob R Gersbach 93 535-3367
6204 Robert Gaige . . . ¤ • 533-1800
M Schalz . . . .90 • 533-6202
★ Engaiging Gifts 93 533-8030
6205 Stanley E Mathels . . .78 • 537-9316
6207 Richard Susick . . . .81 • 536-9603
6211 C McCarter . . . .76 • 535-2939
6213 Larry Lundquist . . . .79 • 537-8381
6216 William E Weiss . . . .96 • 537-6167
6217 Joann Schwartz . . . .95 • 531-9955
W H Schwartz . . . .91 • 533-0584
6218 S Lockwood . . . ¤ 533-5631
6219 K Hall . . . .91 • 533-4115
6220 Lloyt G Steward 83 535-8307
6222 Madison Bunge . . . .93 • 535-1496
★ New Leaf Minnesota . . 535-0167
6223 . . . . NP •
6225 . . . . NP
6227 James Bobus Jr . . . .96 • 535-1488
6228 Roy Roseland . . . .87 • 535-3542
6229 J Hegedus . . . .84 • 535-7253
6231 . . . . NP
6232 Robert L Platan . . . .71 • 537-3751
M Wontorcik . . . ¤ 504-9278
6237 Scott Doulton . . . .88 • 537-1144
6238 Maxine Henriksen . . .78 535-3054
6241 . . . . NP •
6242 Brian Kaelke . . . .95 • 531-3902
6243 William Wixon . . . .90 • 536-7327
★ Wixon Fncl Serv . . .93 535-4838
6244 Carl W Tomczak . . . .86 • 537-5605
6246 D R Mely . . . .82 • 533-0922
6247 Rick Woodhull . . . .96 • 535-3822
6248 Dustin Leavitt . . . .96 • 536-2468
6251 Leslie E Wilson . . . .65 • 533-3427
6252 Curtis T Anderson . . .71 • 533-5123
6254 W C Arnold . . . .88 • 536-9044
6256 . . . . NP
6258★ Halek Roofing Co . . .92 535-8835
6259★ Eagle Lk Comm Ctr . . .87 537-9928
6287 6300 . . . . . . NP
6305 James C Wrobel . . . .79 • 535-4705
6308 . . . . NP •
6311 Stan Tenenbaum . . . .88 • 533-2752
6312 Lawrence Henning . . .95 • 533-7818
6313 Jerry Moen . . . .91 • 533-8971
6319 Lee G Hill . . . .77 • 533-9372
6320 Harold L Hill . . . .74 • 537-5843
6325 Steven Skepper . . . .85 • 533-3010
6326 S Mollen . . . .95 • 535-1468
6333 S Grabinger . . . .88 • 538-8698
6340 Thomas Spartz . . . .84 • 537-5943
6341 Richard T Paddock . . .83 • 537-8895
6342 Randall W Johnson . . .90 • 535-4282
6345 James Kingsbury . . . ¤ • 533-2380
James Kingsbury . . . .88 • 536-8242
6349 Delbert L White . . . .74 • 537-5789
6350 Donald Bowers Jr . . .86 • 533-8253
6353 Richard K Bates . . . .92 • 535-2866
6357 Gary L Molnau . . . .82 • 537-2065
6358 Russell A Overby . . .89 • 537-5685
6363 Michael A Disch 85 537-7475
6401 Roger R Grimm . . . .83 • 538-9503
6410 6415 . . . . . . NP
6419 Bryan D Phillips . . . .94 • 533-7306
6425 Dan Brusegard . . . .93 • 533○9878
6435 . . . . NP
6439 Jack English . . . .90 • 533-8268
6464 Steph Trebisovsky . . .86 • 535-3235
6488 Tex & Diane Cuabo . . ■ 536-0567
6500 Skip Karbo . . . .87 • 537-0812
6505 Dale D Kloss . . . .67 • 533-5855
6509 Max J Weston . . . .78 • 535-0782
6510 John Schimming . . . .86 • 536-9851
6517 V V Strombeck . . . .74 • 535-2595
6520 . . . . NP
6522 Scott Neu . . . ■ 531-2183
6526 S Silva . . . ¤ • 504-0683
6529 Donald G Dille . . . .74 • 537-0484
6533 James Rien . . . .87 • 535-2355
6534 Dennis Percy . . . .89 • 533-4878
6540 Mark Mark . . . ¤ 535-5978
6541 Jeff Mostrom . . . .94 • 533-7446
6545 Todd Weiss . . . .98 • 537-1477
William J Weiss . . . .74 • 535-7462
6549 T L Christensen . . . .94 • 531-2352
6552 S Piersiak . . . .94 • 537-2806
6553 Richard W Boa . . . .77 • 535-6337
6608 E Richard Clifford . . .74 • 533•7201
6609 . . . . NP •
6613 Kris M Berthiaume . . .87 537-0842
6614 Robert J Vassallo . . .86 • 535-7511
★ Allstar Const 87 721-7663
6621 James L Jones . . . .85 • 537-0242
6622 Walter D Davis . . . .90 • 535-8427
6625 T Bamhiser . . . ¤ • 533-2801
6633 Paul Jorgensen . . . .98 • 535-6834
★ Mastrt Apprsis Inc . . .96 535-9930
6636 James E Smith . . . .73 • 535-2886
6639 Alvin H Esenrich . . .75 • 535-2212
6640 Alfred Pheley . . . .95 • 535-4332
6652 . . . . NP •
6664 Anthony Smith . . . .88 • 535-4814
6695 Peter Dahl . . . .94 • 533-9323
109 RESIDENCE 7 BUSINESS

W EAGLE LAKE DR 55369
Maple Grove
100–11899 CT 267.13 $A..C 4
HUDSONS MAP LOC 5D–35, 1D–36
101 Vernon Hamberg 94 425-4647
John A Rebischke . . .80 • 425-1210
102 E M Lackmann . . . .79 • 425○7211
103 G F Tenold . . . .79 • 424-8508
104 Kevin R Lindquist . . .86 • 425-0042
105 Robert McAvey . . . – • 424-8343
106 Frank A Svetlin . . . .83 • 424-3300
107 Shirley Bennett . . . .86 • 424-4827
108 John R Ingrassia . . .95 • 425-3298
110 Harold O Thorsen . . .77 • 425-4588
111 Chris Robinson 89 424-9478
112 James R Hall . . . .94 • 493-3700
114 Phlayne Anderson . . .95 • 425-2228
115 K L Dewitte 91 424-3301
116 B A Bakula . . . .85 • 424-7824
118 M A Tyynela . . . .93 • 493-2124
119 Russell Sveiven . . . .83 • 425-9180
120 T S Jensen . . . .82 • 425-9130
121 Michael Hohn . . . .85 • 424-4745
122 Walter R Eastman . . .82 • 424-4070
Judith A Lunzer 82 424-4070
123 Doug Robeck . . . .84 • 425-7933
124 Steven Kurer . . . .93 • 424-6388
125 N A Miller . . . .82 • 424-4740
126 Duane Meyer . . . .95 • 425-4253
127 Greg Christenson . . .95 • 424-6445
128 Chad Schwieghammer . . – • 424-3692
129 Craig Hagan . . . .89 • 425-4305
130 Gary J Erickson . . . – • 425-4002
131 David T Wolk . . . .82 • 424-4665
132 Charles H Wieck . . . .98 • 425-5301
133 Wanda Lloyd . . . .86 • 424-4194
134 C R Blom . . . .77 • 425-9437
135 . . . . NP •
136 William J Smith . . . .95 • 425-7845
137 P J Riley . . . .93 • 425-1320
139 John D Hoppe . . . .83 • 424-4578
140 Arnold Johnsen . . . .84 • 424-3863
141 S Fir . . . .78 • 425-4749
143 Susan Ozman . . . .87 • 424-2542
144 Andrey Sroka . . . .77 • 425-9848
145 Scott Broin . . . .89 • 424-5395
146 Ronald M Cleveland . . .78 • 425-6009
147 D I Lamb . . . .88 • 424-8377
148 . . . . NP •
149 Chas Littlefield . . . .96 • 425-9470
211 Sandra Mattice . . . .88 • 424-4299
212 . . . . NP •
213 . . . . NP •
214 D Peterson . . . .94 • 425-8594
215 Maynard D Boos . . . .76 • 424-8502
216 Peter Bradford . . . .89 • 493-3053
217 S Baker . . . .95 • 425-2187
218 Donald Olson . . . .92 • 424-5886
219 K A Tovson . . . .86 • 425-0901
220 Michael W Berneck . . .85 • 424-2039
221 Jamie Ellis . . . .90 • 424-6713
222 Robert C Kuder . . . .74 • 425-6267
229 David E Dougherty . . .94 • 493-3554
230 G Clauson . . . .88 • 424-7790
231 P Sandberg . . . .95 • 425-7190
232 Lesley Somerville . . . .88 • 424-3938
233 Mike Rostansky . . . ¤ 493-9644
234 Marvin C Streich . . . .88 • 493-2265
235 B J Anderson . . . .94 • 425-3572
236 S Kojima-Schultz . . . .93 • 424-4014
Mark Schultz . . . .93 • 424-4014
237 B P Anderson . . . .94 • 425-5834
238 D Vetsch . . . .89 • 425-3117
239 . . . . NP •
240 D F Leiter . . . .87 • 425-0222
241 S K Kaiser . . . .91 • 424-7675
242 Mary Jo Danciuk 94 493-5696
243 Daniel W Fekete . . . ¤ 424-8370
Phyllis Goman . . . .82 • 424-3938
244 Mark Lucht . . . .96 • 424-8300
245 Dianne Johnson . . . .94 • 425-4229
246 M J Nathe . . . .93 • 425-3870
Merrilee Nathe . . . ¤ • 425-5421
247 J Dease . . . .94 • 425•3129
249 B Westmark . . . .89 • 425-4362
250 C J Heuer . . . .98 • 391-7712
251 . . . . NP
276 Barry L Shipley . . . .79 • 425-8501
277 Dana D Strandmo . . .89 • 425-1822
278 J M Blake . . . .87 • 425-2155
Joanne Blake . . . .98 • 425-1517
279 Sawie Sundara . . . .88 • 425-1084
280 Jim Dolan . . . .98 • 391-7888
282 . . . . NP •
283 P Hasse . . . .80 • 425•0847
284 . . . . NP
285 Thomas A Seeger . . . .74 • 424-3246
286 Bob Harken . . . – 425-7212
287 . . . . NP •
288 Timothy H Ritchie . . .91 • 425-0750
289 P Norton . . . .89 • 424-5468
290 Dennis Truwe . . . – 425-9052
291 James Hawkins . . . .95 • 424-9759
292 John L Sullivan . . . .89 • 425-6153
293 M H Anderson . . . .98 • 493-4077
294 Bruce A Pankonin . . .82 • 426-4017
295 David Denninger . . . .95 • 425-7022
296 Michael Jacobson . . .93 • 425-5705
297 Tamara M Bollinger . . ¤ 425-8525
Michael Grochala . . . ¤ 425-8525
298 M J Moor . . . .81 • 425-8473
299 A Rynda . . . .95 • 424-7026
300 Donald L Mitchell . . .91 • 425-0224
301 M M Morgan . . . .88 • 425•3660
302 Becki Schwanke . . . .96 • 425-8432
303 Rachel Lagrange . . . ¤ • 391-6445
304 P Evans 91 425-0049
305 Timothy Hiller . . . ¤ • 315-4013
306 Brad McGill 95 493-9426
307 David P Mundahl . . .98 • 391-7414
308 Gary L Hennes . . . .79 • 425-5645
309 Will Harris . . . ¤ 425-9836
D Lommel . . . .84 • 425○8346
310 . . . . NP •
312 M Monroe . . . .93 • 493-4644
313 . . . . NP
314 Michael Nevala . . . .91 • 424-8384
316 . . . . NP
317 Joe Hyland . . . ¤ 391-6366
318 Myrna Walker . . . .85 • 425-0112
319 . . . . NP •
320 . . . . NP
321 Patty Rice 93 425-2219

RR 1 55379
2114 Apartments
Jennifer R Hauer . . . . – 496-2076
A Charlotte Stansby . . . ■ 445-6941
2184 James H Hanson 83 445-1286
2206 Gary F Schmitt 73 445-2269
2232 Dean Struck 89 496-1666
2258 Van D Sindelar 83 445-2161
2287 C S Ritchart 89 496-2305
★ Palace Feed Store . . . ¤ 496-1064
2304 John M Delhoo 83 496-2704
2311 D K Hildebrandt 90 445-4024
D M Leritz 90 445-4024
Tim Morse . . . ¤ 496-0400
2326 K C Stafford 83 445-5274
2350 Howard S Lohmann 83 445-3003
2419★ Ala Landscp&Nursry . . .84 445-6114
2447 Howard Nelson . . . ¤ 445-6331
2880 Neil J Krause 86 496-1957
3001 Richard Fanning 90 445-7255
3003 . . . . NP
3401★ Engel Diversfd Ind . . .88 496-2433
3549★ Dannys Cnstrctn Co . . .77 445-4143
★ Kairan OBrien&Asc . . .77 445-4713
3650 Zafera Lusignan 71 445-3593
3960 Lynn A Webster 84 445-2059
Myron C Webster 84 445-2059
4025 Jimbob Johansen . . . ■ 496-2138
4731 Bruce Hennen 83 445-1369
4761 Keith Clemans 90 445-1517
4787 Milo Jensson 77 445-4349
4815 Edna Waalen 77 496-1690
Jarald Waalen 77 496-1690
4835 . . . . NP
4855 James R Gerlach 87 445-7179
★ J Gerlach Phtgrphy . . .88 496-1927
4915 Gary T Sorenson 81 445-8460
4935 Edward Effertz 77 445-3165
4955 Craig Hetzler 79 445-5386
4985 James Detjen 88 496-0166
5015 Gordon Greenes 84 496-1374
5035 David J Stang 80 496-0925
5055 Gerald A Popp 77 445-6843
5085 John Barker . . . – 445-1790
5215 . . . . NP
5260 Patrick G Smith 88 445-9322
5262 David Czaja 78 445-8071
5264 Apartments
Michael J Huss 89 496-0125
2 Randy Kubes 86 445-8181
5310 Charles R Griffin 77 445-6009
5331 Apartments
R1 Walter M Heinzen 76 445-4822
5352 Harlan H Haworth 77 445-4199
5370 Gary Anderson . . . ■ 445-2108
5371 Joseph F Zak 86 445-8828
Joseph F Zak 90 445-7817
5380 . . . . NP
5411 James E Pietrzak 78 445-7708
5420 S Novak 88 445-2458
5785 George Shutrop 82 445-1637
6185 Elmer Huber 73 445-1880
6885 Norman Shutrop 77 445-3952
7051 Dennis L Sigurdson 77 445-6844
7301 Terrance W Hanson 88 496-3038
★ Eagle Creek Stable . . .82 445-7222
7501 Roy S Reed 77 445-5190
7656 Steven Muhlenhardt 77 496-1307
7755 Lynda Lucast 90 445-7305
Tracy Lucast 90 445-8638
Jere Olson . . . ■ 496-0867
7835 Gerald Klegstad 90 445-8436
★ Quality Green Inc . . .80 941-7857
★ Quality Green Inc . . .88 496-3005
★ Quality Green Inc . . .90 890-1186
8065 Jeffrey S Duncan . . . ■ 496-3310
8234 Ralph M Ferry 77 445-4585
8256 Raymond E Hoffman 77 445-1036
8304 Douglas Waldvogel 85 445-8134
8358 Randy Schubert 90 445-0249
Randy Schubert 90 445-7227
8364 Carole R Koslanski 77 496-1495
Joseph Prichett 89 496-0574
8370 Allen R McKenzie 84 445-4451
8380 Orval M Dahl 77 445-4806
8440 . . . . NP
8450 Steven Schmidt 88 496-1168
★ Schmidt Gettr&Remd . .90 445-6480
8455 Elmer C Halvorsen 77 445-3899
8464 Kenneth Watkins 84 445-3623
★ GCA Corp 88 496-1141
8535 Tad L Rietveld 82 445-6408
8537 P J Sveinson 88 496-0743
8735 Lewr Kraayenbrink 77 445-5376
8820★ Mid-Northern Cont . . . ¤ 445-1448
96 RESIDENCE 16 BUSINESS

EAGLE CREEK DR
Prior Lake

RR 6 55372
15100-16099 CT 809.01 $B,,F 4
HUDSONS MAP LOC 44-K7
15260 Michael Felix 83 447-6110
1 RESIDENCE

EAGLE LAKE DR 55369
Maple Grove
6100- 8799 CT 267.13 $B,,C 4
HUDSONS MAP LOC 50-8,10-9
117 . . . . NP
128 Thomas E Stanke . . . .88 • 424-3013
306 313 325 339 . . . NP
361★ Child Safe Srvc 87 424-9840
434 Sandra Everson 87 424-3171
436 Dave Neumann . . . .90 • 424-9789
6125 Thomas Hanson . . . .75 • 535-4186
6129 Susanne Lack . . . ¤ 535-1289
★ Brad Bogley 89 533-4741
6131 6145 . . . . NP
6153 P L Moinau 88 535-8494
D J Nesland 87 533-9854
6181 Howard Hornibrook 75 535-2698
6197★ Fury Contracting 85 536-8695
6201 Genko Komarec . . . .83 • 597-8615
6202 Thomas J Merten . . . .78 • 533-0705
6203 J Steffen . . . .88 • 533-8507
6204 M Schatz 89 533-8202
6205 Stanley E Marhula . . . .75 • 537-9316
6207 Richard Sweick . . . .80 • 536-9803
6211 C McCarter 75 535-2939
6213 Larry Lundquist . . . .78 • 537-8381
6216 . . . . NP
6217 W H Schwartz . . . .90 • 533-0564
6218 . . . . NP
6219 K Hall . . . .90 • 533-4115
6220★ Lloyd G Stewart 79 533-9689
★ The Woodfinisher . . .86 ⊙ 533-9689
6222★ New Leaf Landscape . .89 535-0167
★ NW Lf Lndscp Co . . .90 ⊙ 535-0167
6223 Edgar Jay Anderson . . .75 • 537-3849
6225 D F Vansteenwyk 90 533-9079
6227 James Bebus Jr . . . .86 • 535-1488
6228 Roy Roseland . . . .86 • 536-3542
6229 J Hegedus . . . .83 • 535-7253
6231 . . . . NP
6232 M Gedbois . . . ¤ 536-0992
Robert L Platan 70 537-3761
6237 Scott Daufton . . . .87 • 537-1144
6238 Maxine Henriksen . . . .77 • 535-3054
6241 Mark Youngquist 87 533-6055
6242 Fred Canfield . . . .90 • 535-0474
6243 William Wixon . . . .89 • 536-0026
6244 Carl W Tomczak 85 537-5505
6246 D R Mely . . . .81 • 533-0922
6247 M N Ostrander 86 533-6787
6248 Robert C Zavadil . . . .80 • 537-1849
6251 Leslie E Wilson 84 533-3427
6252 Curtis T Anderson 70 533-5123
6254 W C Arnold . . . .87 • 536-9044
6256 . . . . NP
6258 Debra Curry . . . ■ 533-0342
★ Helok Roofing Co . . . – 535-8835
6259★ Eagle Lake Comm Ct . .86 537-9328
6267 6300 . . . . NP
6305 James C Wrobel 78 536-4705
6308 S Harford . . . .89 • 536-8098
6311 Stan Tenenbaum . . . .87 • 533-2752
6312 Adrian J Henning . . . ¤ 535-0379
6313 Jerry Moen . . . .90 • 533-8971
6318 Lee G Hill 76 533-9372
6320 Harold L Hill 73 537-5843
6325 Steven Skeppar . . . .84 • 533-3010
6326 Robert Sardik . . . .87 • 533-6150
6333 Scott Grabinger . . . .87 • 536-8898
6340 E Spartz 83 537-5943
6341 Richard T Paddock . . . .82 • 537-8895
6342 Randall W Johnson . . . .88 • 535-4282
6346 James Kingsbury . . . .87 • 533-8567
6349 Delbert L White 73 537-5789
6350 Donald Bowers Jr . . . .86 • 533-6253
6353 Richard K Bates . . . ¤ 535-2066
6357 Gary L Moinau 81 537-2055
6358 Russell A Overby . . . .88 • 537-5685
6383 Michael A Disch 84 537-7475
6401 Roger R Grimm . . . .82 • 536-9503
6410 6415 . . . . NP
6419 Richard T Firtko 79 537-0285
6425 Richard D Krugar . . . .78 • 535-4494
6435 . . . . NP
6439 Jack English . . . .89 • 533-8268
6464 Steph Trebisovsky . . . .84 • 535-3235
6488 . . . . NP
6500 Skip Karbo . . . .86 • 537-0812
6505 Dale D Kloss 86 533-5656
6509 Max J Weston 77 535-0782
6510 George Bergquist 76 537-5772
6517 V V Strombeck 73 535-2595
6520 . . . . NP
6522 Kent A Krueger 86 536-8088
6526 Gerald M Lanigan 72 533-1164
6529 Donald G Dille 73 537-0404
6533 James Rien . . . .88 • 535-2355
6534 Dennis Percy . . . .88 • 533-4879
6540 Norm Okerstrom . . . .88 • 533-8204
6541 Marc Partridge 79 533-6837
6546 William J Weiss . . . .73 • 535-7482
6549 John H McBroom Jr . . .85 • 533-6457
6552 Ruben Dirks 86 537-3940
6553 Richard W Boe 76 535-6337
6608 E Richard Clifford 73 533-7201
6609 George Witt . . . .88 • 537-2505
6613 Joe S Berthiaume 86 537-0642
Kris M Berthiaume 89 537-0642
6614 Robert J Vessallo 84 535-7511
★ Allstar Constructn . . .88 503-5325
6621 James L Jones . . . .84 • 537-0242
6622 Walter O Davis 89 535-6427
6625 Charles Weber . . . .73 • 533-3869
6633 Edw C Vavreck Sr 78 533-6888
6636 James E Smith . . . .72 • 535-2686
6639 Alvin H Esenrich 74 535-2212
6652 E Alan Hanson . . . .88 • 533-0222
6664 Anthony Smith . . . .87 • 535-4814
110 RESIDENCE 10 BUSINESS

EAGLE LAKE DR W 55369
Maple Grove
100-11899 CT 267.13 $B,,C 4
HUDSONS MAP LOC 50-8,10-9
100 Condominium
100 . . . . NP •
101 Condominium
□ John A Rabischke . . . .79 • 426-1210
102 Condominium
□ E M Leckmann . . . .78 • 426-7211
103 Condominium
□ G F Tenold . . . .78 • 424-6508
104 Condominium
□ Jay D Herman 89 425-0042
□ Kevin R Lindquist . . . .85 • 425-0042
105 . . . . NP
106 Condominium
□ Frank A Svetlin . . . .82 • 424-3300
107 Condominium
□ Shirley Bennett . . . .85 • 424-4822
108 Condominium
108 . . . . NP
109 Condominium
109 . . . . NP
110 Harold B Thorsen 76 425-4586
111 Condominium
□ Chris Robinson 88 424-9476
112 Condominium
□ Thomas Adkins . . . .85 • 424-2567
113 Condominium
113 . . . . NP
114 Condominium
□ Wayne C Sigfridson . . . .83 • 425-1048
115 Condominium
□ Karen L Dewitte 80 424-3301
116 Condominium
□ B A Bakula . . . .84 • 424-7624
117 Condominium
117 . . . . NP •
118 Condominium
118 . . . . NP
119 Russell Sveiven 82 425-9160
120 T S Jensen 81 425-9130
121 Condominium
□ Michael Hohn . . . .84 • 424-4745
122 Condominium
□ Walter R Eastman . . . .81 • 424-4070
□ Judith A Lunzer 81 424-4070
123 Condominium
□ Ronald F Zirul . . . .77 • 425-8967
124 Condominium
□ Andreas Ziegler . . . ¤ • 424-8042
125 Condominium
□ N A Miller . . . .81 • 424-4740
126 Condominium
□ Karen Fjelland . . . ¤ 493-4829
□ David Lobben . . . ¤ • 493-4829
127 Condominium
□ Donald Reisdorf . . . .87 • 424-8667
128 Condominium
128 . . . . NP
129 Condominium
□ Craig Hagen . . . .88 • 425-4305
130 Condominium
130 . . . . NP •
131 Condominium
□ David T Wolk . . . .81 • 424-4865
132 John Thomas Klick 85 424-7815
Sharon R Leonard 85 424-7815
133 Condominium
□ Wanda Lloyd . . . .85 • 424-4194
134 C R Blom 76 425-9437
135 Condominium
□ David Wm Nelson . . . .86 • 424-4918
136 Condominium
□ Craig Laporte 90 424-2856
137 Condominium
□ Joe Hauglie 90 424-2116
138 Condominium
138 . . . . NP
139 Condominium
□ John D Hoppe . . . .82 • 424-4576
140 Condominium
□ Arnold Johnsen . . . .83 • 424-3663
141 Condominium
□ S Fix . . . .77 • 425-4749
142 Condominium
□ Robert Lines . . . .90 • 424-8721
143 Condominium
□ Susan Duman . . . .86 • 424-2542
144 Condominium
□ Andrey Sroka . . . .76 • 425-9848
145 Scott Brein . . . .88 • 424-5395
146 Condominium
□ Ronald M Cleveland . . . .77 • 425-6009
147 Condominium
□ D I Lamb . . . .87 • 424-6377
148 Kenneth E Johnson 81 425-9513
149 Chas Littlefield 76 425-9470
211 Condominium
□ Pance S Mattice . . . .87 • 424-4299
212 Condominium
□ Reynaldo Casanova . . . .84 • 424-4410
213 Condominium
□ Scott Anderson . . . .84 • 424-5706
214 Condominium
□ D Peterson . . . .78 • 425-8594
215 Condominium
□ Maynard O Boos . . . .76 • 424-6502
216 Condominium
□ Peter Bradford . . . .88 • 493-3053
217 Condominium
□ James W Price . . . .75 • 425-4508
218 Condominium
□ Donald Olson . . . ¤ • 424-5895
219 Condominium
□ K A Tovson . . . .85 • 425-0901
220 Condominium
□ Michael W Bernack . . . .84 • 424-2039
221 Jamie Ellis 89 424-6713
222 Robert C Kader 73 426-6257
229 Condominium
□ Scott Hogenson . . . .89 • 425-3174
230 Condominium
□ G Clauson . . . .85 • 424-7790
231 Condominium
□ K Downs . . . .88 • 425-2207
232 Condominium
□ Lesley Somerville . . . .87 • 424-3938
233 . . . . NP
234 Condominium
□ Renee G Lanz 87 493-2266
□ Marvin C Streich . . . .87 • 493-2265
235 Condominium
□ B J Anderson . . . .79 • 425-3572
236 237 . . . . NP
238 Condominium
□ D Vetsch . . . .88 • 425-3117
239 Condominium
□ Grant Johnson 86 424-8858
240 Condominium
□ D F Leiter . . . .88 • 425-0222
241 Condominium
□ S K Kaiser . . . .90 • 424-7675
242 Keith O Schmidt 90 424-9446
243 Condominium
□ Phyllis Goman . . . .81 • 424-3938
244 E J Derksen 88 493-2438
245 Condominium
245 . . . . NP •
246 Condominium
□ Joseph Velasquez . . . .89 • 493-3454
247 Condominium
□ J A Buss . . . .86 • 425-3129
248 Condominium
□ S C Brinda . . . .88 • 425-2776
★ Brinda Dvlpmnt Co . . .89 425-3171
249 Condominium
□ B Westmark . . . .88 • 425-4362
250 Condominium
□ G W Langewisch . . . .76 • 425-9845
251 Condominium
□ J M Bies . . . ¤ 425-2446
252 Condominium
□ Ken Sauer . . . ¤ 424-3520
276 Condominium
□ Barry L Shipley . . . .78 • 425-8601
277 Dana O Strandmo 88 425-1822
278 Condominium
□ J M Blake . . . .86 • 425-2155
279 Condominium
□ Sawie Sundara . . . .87 • 425-1084
280 Condominium
□ L J Christianson 78 425-1587
281 Condominium
281 . . . . NP
Condominium
□ Kenneth Geiger . . . .83 • 424-4210
283 Condominium
□ P J Harse . . . .78 • 425-0847
285 Thomas A Seager 73 424-3248
286 Condominium
□ I A Swanson . . . • 425-9274
287 Condominium
□ Louis F Cargiuolo . . . .86 • 425-0718
288 Timothy H Ritchie 90 425-0750
289 Condominium
□ P Norton . . . .88 • 424-5488
290 Condominium
□ Jane M Johnson . . . .89 • 424-9868
291 Condominium
□ Silvia Howard 90 424-9546
292 John L Sullivan 88 425-6153
293 Condominium
293 . . . . NP
294 Bruce A Pankonin 81 425-4017
295 Condominium
□ William Roman . . . .87 • 425-1878
296 Condominium
□ Robert D Pierce 85 424-6848
297 Scott Ruegemer . . . ¤ 424-5247
298 Condominium
□ M J Moer . . . .80 • 425-8473
299 Condominium
□ Candace Winton 90 425-3126
300 Condominium
□ Donald L Mitchell . . . .90 • 425-0224
301 M M Morgan 87 425-3880
302 Susan K Gilbert 82 424-6238
303 Craig M Reed . . . .88 • 493-4041
304 P Evans 90 425-0049
305 Craig Tedych . . . ¤ 493-3546
306 Condominium
306 . . . . NP
307 Condominium
□ Kay L Nordstrom . . . .79 • 425-0805
308 Condominium
308 . . . . NP
309 Condominium
□ Diane Lommel . . . .85 • 425-8346
310 Condominium
□ C L Cartier . . . .84 • 493-3467
311 Condominium
311 . . . . NP
312 Paul Schaefer . . . ¤ 493-5869
313 Condominium
□ Nathan Williams . . . .89 • 424-7689
314 Condominium
□ Michael Nevala . . . .90 • 424-8364
315 Condominium
315 . . . . NP
316 Gary W Caulkins . . . ¤ 425-1014
317 Mark H Biederman . . . ¤ 425-4006
318 Condominium
□ Myrna Walker . . . .84 • 425-0112
319 Condominium
□ Michael P Richdorf . . . .87 • 425-1349
320 . . . . NP •
321 . . . . NP
322 Condominium
□ A Boday . . . .87 • 424-6093
323 Condominium
□ Curt Bunnell . . . .81 • 424-5484
324 Paul Shockman . . . ¤ 424-1408
325 Condominium
□ C R Durada 83 425-1802
326 Condominium
□ C A Hoff . . . .75 • 425-5175
327 Condominium
□ Earl Wodtke . . . .78 • 425-1037
328 James Field 89 493-3466
329 Condominium
329 . . . . NP
330 John A Crema 73 424-6835
331 Condominium
□ Robert D Connoy . . . .90 • 424-6840
332 Condominium
□ L McKay . . . .83 • 425-8706
333 . . . . NP
334 Condominium
□ S OConnell . . . .88 • 424-1039
335 T E Christiansen 73 424-3890
336 Condominium
□ Margaret Zaun . . . – • 424-4963
337 Condominium
□ Mark W Poppler . . . .87 • 424-5175
338 Condominium
□ Debra Sandahl . . . .88 • 424-5869
339 Condominium
339 . . . . NP
340 Condominium
□ D J Boller . . . .90 • 424-6857
341 Condominium
□ B Slotrem . . . ¤ 425-4235
342 Condominium
□ B R Weberg . . . ¤ • 425-1935
343 Condominium
□ Clyde B Anderson . . . .75 • 426-5441
344 Condominium
□ D McCallum . . . .87 • 425-1269
345 Condominium
□ Doris Barry . . . .90 • 424-4169
346 . . . . NP
347 Condominium
347 . . . . NP
348 Condominium
□ B Carlson . . . .88 • 424-4673
349 Harlan R Riedesel 73 425-5761
350 Diane Bushyager 73 425-3841
Carolyn Sikkink 73 425-3841
351 Johnathan White 81 424-5423
352 Condominium
□ Joe Sands . . . .88 • 493-2558
353 Condominium
□ J Claypool . . . .89 • 425-0617
354 Condominium
□ Steve Schrunk . . . ¤ • 425-7357
355 Condominium
□ Louis Farinacci . . . – • 493-6349
356 Robert Solberg 88 425-1029
357 Condominium
□ Barbara Mahoney . . . .77 • 424-4153
358 Condominium
□ Susan Janekeels . . . .89 • 493-3513
359 Condominium
□ F S Johnson . . . .76 • 425-9184
360 Condominium
□ M A Vogel . . . .83 • 425-8101
361 B L Mezzenga . . . – 424-9485
362 Anita Sears 77 425-3822

. . . . 55444
8047 Philip Chase 85 560-5493
8051 Larry Sloma 85 566-3616
8055 Dan Fasnes 85 560-0620
7 RESIDENCE

DUPONT RD 55431
Bloomington
10400-10599 CT 258.01 #A..J 9
HUDSONS MAP LOC 2C-49
10450 Eli Kleinsasser 79 888-1160
10452 R Angelos 82 888-6788
10454 P J McComiskey . . . . ¤ 888-7908
10458 L J Baldus 77 884-0526
10460 Mark A Lee 84 884-4060
10461 Beau K Moss 84 884-5283
Beau Rex 84 884-5283
10462 Ray A Gruebele 84 884-0485
10463 Robert D Wiley 77 884-6991
10464 J Eszlinger 75 881-6555
10465 M S Hansen 74 881-7585
N A Hansen 74 881-7585
10466 Marjorie H Keefe 74 888-2493
10467 Edward R Eck . . . . . – 881-2477
10468 Joan Bischoff 81 884-2985
10469 S A Andersen 83 884-4579
10470 Mark P Berg 74 881-3075
10471 Harold M Ahmann 82 888-2733
10472 K T Snyder . . . . . . ¤ 888-9093
10474 L Anderson 74 884-4907
Murray Anderson 74 884-4907
10475 Mark A Abbott 81 881-0173
W Yaworski 81 881-0173
10478 V Gensmer 74 888-2492
10481 . . . . NP
10483 M J Gilbert 82 884-6385
10485 S Anton-Johnson . . . . ¤ 888-7712
10487 Kendall M Anderson . . .84 884-5013
10489 . . . . NP
10491 Barb Beattie 85 884-8420
C Christopherson 85 884-8420
★ Dr K Hedin . . . . . . ¤ 884-8428
10493 . . . . NP
10495 V L Posorske 74 888-4813
10501 Rita Croatt 83 888-8784
10503 Ralph B Fligge 83 888-2482
10505 C Ostercamp . . . . . ¤ 881-7908
10507 Paulette Smith 85 881-9406
10509 Scott Kjuseth . . . . . – 881-7629
10511 Howard J Barr 85 881-2847
10513 Richard A Eide 78 881-1119
10515 J Zins 85 884-1963
10531 David J Hilmo 73 884-2774
10533 M B Anderson 78 881-2797
10535 Paul W Gosling 78 881-7412
10537 Beverly M Hammond . . .81 884-2054
★ Dr J W Hammond . . .81 884-2054
10539 Ray Kaiser . . . . . . ¤ 888-9513
Glenn Stow 85 884-0397
10541 . . . . NP
10543 M McGuire Hobbs 85 881-7798
10545 James R Emmons 75 881-5918
50 RESIDENCE 2 BUSINESS

DUPONT ST
Long Lake

RR 4 55356
200- 399 CT 272.02 #B..B 3
HUDSONS MAP LOC 2B-23
237 Ken Krause 85 476-4594
240 Walt Kleinsteuber 73 473-3059
Walt Kleinsteuber 473-5091
★ Precision Glss&Mir . .84 473-3059
245 Alan J Roepke 79 476-3392
248 Roger E Moody 72 473-6194
263 Darryl Topel 73 473-5341
268 Dale C Schafer 73 473-9025
281 Gerald G Bertelsen 73 473-8326
284 Ron G Veilleux 78 473-2021
Ronald G Veilleux . . . . ¤ 473-5209
293 Charles W Boentgen . . . – 478-1839
298 J OBrien 83 473-1104
301 Robert A Nelson 77 475-3452
306 Michael P Holm 81 475-3898
316 Ed Pollock 81 478-1104
328 Donald Swenson 81 473-9398
342 Ray C Ketzback 80 475-2903
17 RESIDENCE 1 BUSINESS

DURANT ST NE 55005
New Street-1982.
East Bethel
20300-24399 CT 501.01 #D..A 6
HUDSONS MAP LOC 5A-1C
20341 David J McLean 434-3016

RR 1 55011
20510 Donald J Anderson . . .78 434-5497
★ Anderson Dragline . .82 434-5497
★ Dons Barner Serv . . .83 434-5497
20817 David L Anderson . . . ¤ 434-9457
20829 Clar A Anderson 72 434-5716
21044 Larry W Taff 72 434-5588
21431 Paul Jacobson 83 434-5424
21510 Joseph P Anderson . . .79 434-5960
21529 Phil A Hartley 73 434-6738
21547 Lee Herbert Mau 85 434-3353
21613 Mike W Sampson 82 434-7128
21759 Frank J Markle III . . .84 434-5648
21811 R B Botte . . . . . . ¤ 434-9370
21849 Mark J Zaharia 79 434-5417
21929 William Eckart 73 434-7578
22051 Greg D Henderson 74 434-5394
22117 James Jacobsen . . . . ¤ 434-5113
22146 Michael G Sjoback 80 434-7297
22208 Bernard Protas 73 434-6523
22525 John W Peters 84 434-5430
22620 Roger Stege 79 434-4231

RR 1 55005
24221 Del Marquart 84 444-4463
24317 Adolph Adamek 444-5701
22 RESIDENCE 2 BUSINESS

DURANY ST NE
New Street-1977.
Ham Lake

RR 6 55304
14800-17799 CT 502.09 #C..B 5
HUDSONS MAP LOC 5D-1C,5B-3
14808 Hugo H Field 77 784-8831
14842 . . . . NP

RR 1 55304
17184 Norman P Ziegler 74 434-8045
17440 James J Price 74 434-3086
17458 Michael J Erickson . . .80 434-4396
17557 David Jaeger 83 434-5692
17710 . . . . NP
17715 Jay Jaeger 83 434-4928
17720 Marvin C Breiland 76 434-9526
9 RESIDENCE

DURHAM RD 55345
New Street-1976.
Minnetonka
14400-14599 CT 262.03 #A..E 4
HUDSONS MAP LOC 3C-32
14400 Ron Nelson 85 935-5345
14418 Rollin D Hall 80 938-0321
14436 Jeff Berkow . . . . . . – 938-0883
14500 Ralph Deuschle 84 938-8657
14519 Conrad Teichert Jr . . .78 933-1160
14536 Alan E Gorlick . . . . ¤ 931-9006
14537 Martin W Canis 81 935-0598
14554 Rich Fine 80 938-2277
14555 A C Duncanson 83 935-9539
14572★ Dr Paul R Arneson . . – 933-8047
14573 Steven T Rosso 83 933-4791
10 RESIDENCE 1 BUSINESS

DUSHARME DR 55429
Brooklyn Center
4800- 4899 CT 204 #C..B 9
HUDSONS MAP LOC 5B-17
4811★ Ansari Abrasives . . .84 533-2116
1 BUSINESS

DUSTIN RD 55318
Chaska
200- 299 CT 910 #D..F 3
HUDSONS MAP LOC 3B-9
229 Dave Eggestein . . . . . – 448-7302
230 M L Severson 82 448-7163
231 Scott Hinrichs . . . . ¤ 448-4517
232 . . . . NP
233 Mark Hallquist 83 448-7920
234 . . . . NP
235 Robert A Anderson . . .82 448-5830
236 Steven Harrison 82 448-5437
238 Wm B Taylor III 85 448-5799
9 RESIDENCE

DUSTY DR
Medina

RR 2 55356
1800- 1899 CT 271.01 #B..B 3
HUDSONS MAP LOC 3A-23
1622 Larry J Reiser 68 473-6301
1642 Wm L Reiser Jr 69 473-4571
1643 Scott Lee . . . . – 476-6137
1675 Frank J Schneider 68 473-3885
4 RESIDENCE

DUTCH AVE SE 55372
Prior Lake
15500-16599 CT 809 #B..F 4
HUDSONS MAP LOC 4B-67
15595 Robert H Rahbain 78 447-2986

RR 7 55372
16517 Ed H Lueders 75 447-2546
16549 Bruce White . . . . . . – 447-8381
16575 Larry J Anderson 76 447-5045
4 RESIDENCE

DUTCHESS LN
See Duchess Ln
Apple Valley

RR 5 55124

DUTCHVIEW RD
New Street-1979.
Minnetrista

RR 8 55364
2000- 2599 CT 277 #A..E 2
HUDSONS MAP LOC 1B-38
2000 James Turner 84 472-7165
Kristin Vonsaggern . . .84 472-7165
2105 Roger W Reed 80 472-5211
2500 Lee Brethorst 79 472-2192
4 RESIDENCE

DUTOIT RD
New Street-1982.
Carver

RR 1 55315
15900-16399 CT 911 #D..F 2
HUDSONS MAP LOC 2B-65
15956 Joseph N Wilmes 84 448-7577
16086 Todd P Pexa 84 448-4429
16175 Thomas A Lynch 82 448-3556
16255 Douglas Bushard . . . . – 448-2883
16280 Larry Jeanissen 84 448-3974
16285 Steven Ehalt 84 448-2545
16370 Steve Carlson 84 448-4861
7 RESIDENCE

DUTTON AVE N 55428
Brooklyn Park
6700- 7099 CT 268.09 #D..D 4
HUDSONS MAP LOC 3D-9
6700 B A Bowser 84 533-2877
6708 . . . . NP
6709 Gilbert J Kleist 77 537-4724
6710 . . . . NP
6716 Albert J Mattison 77 533-4341
6717 Gerald Salzbrunn 77 533-9068
6800 M Herman 85 533-1899
6801 Ronald Komer 81 535-4475
6808 George Page 79 537-8551
6809 Charles D Hruska 77 535-5964
6816 Kenneth P Kartak 85 538-8888
6817 . . . . NP
6900 Donald A Wold 77 537-3224
6901 Ernest J Osfar 79 537-3893
6906 W A Bonnevier 77 537-4208
6909 Chester V Fritz 77 533-5644
6916 Michael Huggins 84 535-1017
6917 Dennis K Johnson 77 533-8558
7000 Steven J Zenke 80 536-8572
7001 . . . . NP
7005 James I Coles 83 537-2240
7009 Keith Lageale . . . . . – 535-0215
7013 M A Veal 80 538-8798
7016 Mary E Jerome 83 533-2685
7017 Frank A Detersen 78 537-2244
— 8500 LAKELAND AVE INTS
— HWY 52 INTS
26 RESIDENCE

DUWAYNE AVE 55014
Lexington
8900- 8999 CT 509.01 #E..C 6
8951 Kevin B Anderson 85 780-3384
Scott Benson . . . . . ¤ 780-5864
Dennis Koller 85 786-8033
8953 Geo A Hemmingsen . . . ¤ 780-5289
J M McGovern 85 784-0244
Shane Miller 83 786-7842
T Neal 84 784-1023
David Parry . . . . . . ¤ 786-4874
Lonny Reed . . . . . . ¤ 780-9554
8955 Ronald G Nelson 76 784-4178
G Petermann . . . . . ¤ 780-8857
11 RESIDENCE

DVORAK RD 55343
Minnetonka
4100- 4199 CT 261.01 #A..E 4
HUDSONS MAP LOC 4B-32
4111 Thomas J Kirscher 75 938-0056
4124 James J Labounty 65 938-2481
4125 Lee E Hess 68 935-3728
4130 Bruce Severtson 81 933-4803
4133 Jeffrey Korth 86 936-9299
4136 C J Ranstad 85 935-5798
6 RESIDENCE

DWIGHT LN 55343
Minnetonka
2000- 2299 CT 264.01 #A..D 4
HUDSONS MAP LOC 4D-24
2001 J Pausch 80 544-0767
A M Wicks 84 545-5096
2016 Josef Pausch 80 545-0968
2020★ Cheap Skate Minn . .78 546-8888
S D Sheldon Jr 81 546-5092
2100 Bruce Hoffarber . . . . ¤ 542-8815
2211 John R Kolski 84 545-8322
2220 Brian Blankenburg . . . ¤ 544-4304
2221 Richard Fox . . . . . ¤ 593-0438
2240 David R Carlson 82 541-1650
David R Carlson 82 541-9313
10 RESIDENCE 1 BUSINESS

DYNASTY DR 55345
New Street-1982.
Minnetonka
4100- 4199 CT 262.01 #A..E 4
HUDSONS MAP LOC 1B-32
4100 William J Drasler 85 935-2977
4101 Steven J Hanson 85 938-8963
4120 Dr D W Anderson 85 933-1341
4121 Noel C Hancock 82 933-7408
4130 Gary Mosiman . . . . . – 938-5872
4141 W J Slowter . . . . . ¤ 931-0250
6 RESIDENCE

DYSPROSIUM ST NW 55303
New Street-1977.
Ramsey
14000-16499 CT 502.05 #B..B 4
HUDSONS MAP LOC 1A-2
14076 Philip Nestor . . . . . ¤ 422-0218
14089 Barb Fritzke . . . . . ¤ 422-0379
16100 Bruce A Derant 84 427-2811
16320 Leo Rempca 84 753-3307
16411 Thomas M Yoho 84 753-4577
16431 Roy Newcomb 79 753-4207
16451 E A Daeger 77 753-4544
7 RESIDENCE

E AVENUE 55379
Shakopee
140★ Lathrop Paint Sply . . 445-2336
1 BUSINESS

E STREET 55343
New Street-1978.
Minnetonka
3100- 3199 CT 264.02 #B..D 4
HUDSONS MAP LOC 1A-33
3120★ Paul F Marso Aty . . .82 938-3588
1 BUSINESS

EAGAN DR 55378
See Egan Dr
Savage

EAGLE BLUFF RD
New Street-1981.
Minnetrista

RR 2 55364
3200- 3399 CT 277 #A..E 2
HUDSONS MAP LOC 1C-39
3215 James W Sterriker 82 472-3236
3300 Michael L Gillham . . . ¤ 472-5982
3305 Robert E Heeter 84 472-6826
3345 William H Magnuson . . .84 472-3772
3380 Robert C Eckert . . . . – 472-5879
3360 David G Hanson 82 472-5901
Janet E Hanson . . . . ¤ 472-8445
3385 Douglas F Sweet . . . . – 472-5744
8 RESIDENCE

EAGLE CREEK AVE NE 55372
New Street-1976.
Prior Lake
1500- 1599 CT 809 #B..F 4
14000-15899 CT 809 #B..F 4
HUDSONS MAP LOC 4D-55,4A-67
1511 M Crooks 84 447-8958

RR 5 55372
14091 Leo Vierling 77 445-1884
15112★ Lametti&Sons . . . . ¤ 447-8948
15140 Jdee A Herrald . . . . ¤ 440-5209
15180 Louise E Smith 77 447-5162
15280 B A Knick 85 447-8256
15420 Gerald R Vandiver 82 447-6907
15717 Donald W Scott 85 447-4115
15720 . . . . NP
15795 Ben Baer 78 447-2224
15810 15820 . . . . NP
15830 Ronald C Brecknor . . .79 447-4020
15850 . . . . NP
15882★ Marina Royale 447-4388
13 RESIDENCE 2 BUSINESS

EAGLE CREEK AVE SE 55372
Prior Lake
15100-16899 CT 809 #B..F 4
15120 George Crooks 83 447-2109
15160 . . . . NP
15220 John Hackley 77 447-5512
15280 . . . . NP
16000 Irv H Humphrey 78 447-4055
16010 Dave Brunner . . . . . ¤ 440-5109
Dirk D Draeyer . . . . ¤ 440-5109
16020 John G Babcock 81 447-2054
16030 Kevin J Bergstrom 85 447-1486
16044 Robert D Robbs 75 447-4768
16058 Alan W Roberts 84 447-8941
16072 Charles R Brazier 77 447-4738
16084 Jon E Starr 78 447-5911
16094 D James Space 78 447-5225
14 RESIDENCE

EAGLE CREEK BLVD
Shakopee

RR 1 55379
1700- 8799 CT 803 #B..F 4
HUDSONS MAP LOC 1D-47,2A-55
1796 Howard Schmitt 77 445-5130
1803★ Reins Auto&Rr Sv . . ¤ 445-8340
1812 David J Yaresso . . . . – 445-2931
1885★ Shamrock Place 82 445-8341
1885★ P&R Mini Storage . . .83 445-7149
1897★ Carburto&Turbo Sys . .84 445-3918
★ Propane Carb&Equip . .88 445-6070
½ ★ Dial-A-Ride . . . . . ¤ 445-9040
1933 James J Hauer 83 445-1739
1935★ J N Underwood 83 445-5230
1951 1952 . . . . NP
1992 M J Dircks 83 445-3977
Richard J Solem 81 445-7395
2000 2008 2024 2032 . . NP
2048 2055 2084 . . . . . NP
2078 D E Gilbertson 83 445-4709
2100 Mark Swanson 85 445-8912
2114 . . . . NP
2184 James H Hanson 83 445-1288
2208 Gary F Schmitt 73 445-2269
2232 Jenny Schwartz . . . . ¤ 445-8960
John J Schwartz 83 445-1748
2256 Van D Sindelar 83 445-2181
2287★ L&D Trucking . . . . ¤ 445-6605
2304 John M Dolbec 83 445-2370
2311 . . . . NP
2328 K C Stafford 83 445-5274
2350 Howard S Lohmann . . .83 445-3003
2419★ Als Ldscpng&Nrsry . . .84 445-6114
2447 W Swanson . . . . . . ¤ 445-0423
2860 Neil J Krause . . . . . – 445-2482
3001 Terry L Hauer 79 445-7554
3003 . . . . NP
3549★ Dannys Constructn . . .77 445-4143
★ Keiran OBrien&Asc . .77 445-4713
3650 Zelere Lusignan 71 445-3593
3960 Lynn A Webster 84 445-2059
Myron C Webster 84 445-2059
4731 Bruce Hansen 83 445-1369
4751 Joseph J Smith 77 445-1517
4767 Milo Jensson 77 445-4349
4815 Edna Waalen 77 445-4821
Jerald Waalen 77 445-4821
4835 . . . . NP
4855 Todd Becken 78 445-8870
4915 Gary T Sorenson 81 445-8460
4935 Edward Effertz 77 445-3165
4955 Craig Holzler 79 445-5388
4985 Roger E Thompson 77 445-2220
5015 Gordon Grannes 84 445-8674
5035 David J Stang 80 445-7122
5055 Gerald A Popp 77 445-8843
5085 Patk A Laschinger . . . – 446-8088
5215 . . . . NP
5250 Patrick G Smith . . . . ¤ 445-9322
5262 David Czaja 78 445-8071
David Czaja 78 445-8072
5284 David J Bates 82 445-1900
5310 Charles R Griffin 77 445-6009
5331 Walter M Heinzen 76 445-4822
5352 Harlan H Haworth 77 445-4199
5371 Joseph F Zak . . . . . ¤ 445-8828
5380 . . . . NP
5411 James E Pietrzak 76 445-7708
5420 Bruce Novak 77 445-2458
5765 George Shutrop 82 445-1637
6185 Elmer Huber 73 445-1880
6665 Norman Shutrop 77 445-3952
7051 Dennis L Sigurdson . . .77 445-6844
7381★ Eagle Creek Stable . .82 445-7222
7501 Roy S Reed 77 445-5190
7556 Steven Muhlenhardt . . .77 445-7462
7765 David Lucast 77 445-7305
7835★ Jerrys Lawn Indstr . .79 445-7662
Gerald Klegstad 82 445-8438
8085 Ron Holmes . . . . . . ¤ 445-0486
8234 Ralph M Ferry 77 445-4565
8256 Raymond E Hoffman . . .77 445-1038
8304 Douglas Waldvogel 85 445-8134
8358★ Schubert Trucking . . . ¤ 445-8438
8364 Carole R Kosienski 77 445-6254
C J Myers 83 445-5157
8370 Allen R McKenzie 84 445-4451
8380 Orval M Dahl 77 445-4806
8440 . . . . NP
8455 Elmer C Halvorsen . . .77 446-3899
8464★ Gca Corp . . . . . . ¤ 445-7955
Kenneth Watkins 84 445-3623
8535 Ted L Rietveld 82 445-6408
8537 K F Waldron 76 446-2341
8735 Lawr Kraayenbrink . . .77 445-5376
82 RESIDENCE 15 BUSINESS

EAGLE CREEK DR
Prior Lake

RR 9 55372
15200-16099 CT 809 #B..F 4
15260 Michael Felix 83 447-8110
1 RESIDENCE

EAGLE LAKE DR 55369
Maple Grove
6100- 6699 CT 267.05 #B..C 4
HUDSONS MAP LOC 5B-8,1B-8
6125 Thomas Hanson 76 535-4168
6129 Mark K Bratten 84 533-6865
6131 . . . . NP
6145 K M Maly 84 537-0842
6163 Lloyd Lunarz 73 535-1393
6181 Howard Hornibrook . . .75 535-2898
6197 Daniel Fery 85 536-8890
6201 Genko Komarec 83 537-8615
6202 Thomas J Merten 78 533-0705
6203 . . . . NP
6204 Jerome J Forero 76 533-8622

E STREET 55343
New Street-1978.
Minnetonka
3100- 3186 TZ 26402 $B..D 4
042040
3120 Vernita Bleick 78 938-4493
1 Residence

EAGAN DR
Savage
R R 4 55378
042050
4161 .....NP
4412 Harry Hoks 79 894-8831
4451 Randy Collins .....- 894-6205
4455 Donald J Egan 78 890-3548
4619 Jack H Egan 890-4689
4650 Ivan E Lotts 78 894-5050
4804 Robert Majersky .....R 894-1661

R R 1 55378
5300 D A Johnson .....- 894-1955
G Johnson .....- 894-1955
6161 Larry D Larson 80 447-5562
6259 L F Christensen 80 447-8519
6403☆Cole Market .....- 447-5215
6921 Kennard L Lundgren 77 447-3964
6939 Ronald W Enzenauer 79 447-5986
7171 S C Finke .....R 447-3303
7247 Russell D Swanson 79 447-3197
7320 David Vachinski 77 447-4258
7444 Francis D Whitney 79 447-2905
7520 N P Bemisgen .....R 447-5930
Michael F Page .....R 447-5394
Dean R Toensing .....- 447-6922
Richard T Wiedner .....R 447-8304
7522 Tim Holtzman .....R 447-8624
Jerry L Rembe 80 447-8563
8658 Martin Conroy 77 445-4058
No # Charles R Yarnes 78 894-5186
25 Residence 1 Business

EAGLE 55433
Coon Rapids
10800-12299 TZ 50701 $B..B 5
042050
10839 Robert C Schroeder 80 757-6905
10840 Steve Zampel 80 757-6086
10846 Sheldon D Halberg 80 757-8278
10851 Jeffrey Smith .....- 757-8338
10852 Robert Whittmayer 80 755-5911
10858 .....NP
10863 Thomas Robertson .....R 757-8569
10864 P R McGinnis 80 755-5913
10870 Andrew T Hyvara .....R 757-4265
10875 Gerald L Larson .....R 755-0763
10880 S L Hillyer .....- 755-5930
10886 .....NP
10887 Francis N Johnson 80 755-0487
10901 David L Halek 80 757-8691
10902 Jean Weisbrod 80 755-0791
10908 Beulah V Hickerson ....- 757-7931
10910 Dennis F Larson 80 755-5391
10911 Bennett W Green 80 757-6913
Bennett W Green 80 755-0289
10918 Jim Garvey .....- 755-3891
10919 C A Pillsbury .....- 755-3552
10925 Kim Greg Husbands 79 755-8273
10926 Donald Shermer 80 755-0542
10937 Dean Hills 80 755-0745
10938 Sandy Vasecka 80 755-0722
10949 Capt E G Gunderson ....R 757-8291
10961 Thomas A Dwyer .....- 755-5738
10962 Thomas J Davis 80 757-7884
10973 Donald C Fassett 80 755-7396
10974 Patrick C Fox 79 755-6758
10985 E C Nelson .....- 757-3234
10998 Douglas Walton 80 755-0673
11006 W J Houtkooper 80 757-8447
11013 R A Jorgenson .....R 757-3924
11020 P Mikolich .....- 757-9430
12024 Les W Gransee .....R 757-9685
12037 Bruce M Erickson 80 755-0527
12038 W J Lindeman Jr 80 755-0780
12051 David Lent 80 755-9525
12052 R J Krausert .....R 755-1322
12055 David Ehoff 80 755-0388
12080 Charles McKaige .....- 755-0325
12093 Jerry E Turner 80 757-3042
Jerry E Turner 80 757-9245
12094 Edward V Smith .....R 755-0982
12110 M L Krull 80 757-5892
12114 C Kronholm 79 757-4629
12118 Tom Green .....R 757-8632
12122 Steven E Schmitt .....R 755-5235
12126 Daniel A Nelson 79 755-9017
12130 L M McDonald 80 757-2198
12134 Rex S Bartlett 80 755-0657
12138 Labelle M Kasper 75 755-7610
12142 Wm H Zimmerman 75 757-5163
12145 Paul C Nesse .....R 755-0181
12146 Richard R Marty 80 757-8261
12148 Brian L Johnson .....R 757-8939
12150 Dale Helmen .....R 757-8844
12153 Mark Hilden .....R 757-8783
12154 G L Frederickson 78 757-6744
12157 D J Lidstad 79 755-9669
12158 V Gebbie 79 755-4787
12161 C T Dick 78 755-6177
12162 E M Blankholm 78 755-7028
12165 .....NP
12166 Joe W Hawley .....- 757-9522
12169 Dwight Denyes .....- 755-7467
12170 David F Huber 79 757-7944
12173 Robert Gravell 73 757-1181
12210 P Grant .....- 757-9468
12214 Reginald Hemones 72 757-4684
12218 Walter N Peterson 77 755-8778
12222 .....NP
12226 Mark M Juneau 73 755-7865
12230 Gary L Clauer .....R 755-1172
12234 C A Perkos 76 757-3206
12238 Bona Vanne 73 755-7107
12242 Shirley J Olson 75 757-2788
12246 R L Kooiman .....R 757-8580
12254 Eleanor M Erickson 77 755-5803
12258 D Nolan 80 755-7428
12262 Wm B Schroeder 79 757-6655
12266 Henry J Krupinski 77 757-1671
12270 Kevin Frazell 79 755-9148
12274 Willard A Sundberg 80 755-0606
12276 B L Anderson 77 757-7366
12278 George Mrozek .....- 757-3681
12279 Gordon M Reher 78 755-6180
12282 Wade Cole 74 757-6232
12283 J L Christenson 78 755-5837
12286 Arthur L Olson 78 757-6404
12287 N N Reuterfeldt 77 757-5773
92 Residence

EAGLE NW 55369
New Street-1979.
Osseo
042070
124 Roy Lee 79 425-0713
1 Residence

EAGLE BLUFF RD 55364
New Street-1981.
Mound
042080
3345 Donald F Johnstone ....R 472-5916
1 Residence

EAGLE CT
New Street-1980.
Savage
R R 1 55378
042090
8580☆Shortsed Concrete 890-7072
☆Shsd Redi-Mix 890-7072
2 Business

EAGLE CREEK AVE NE 55372
New Street-1976.
Prior Lake
14000-15899 TZ 809 $B..F 4
042100
14091 Leo Vierling 77 445-4257
Leo Vierling 77 445-1884
15511 Greg M Matson 79 447-6782
15717 Bradford W Reddick 78 447-5792
15720 .....NP
15795 Ben Baer 78 447-2224
15820 .....NP
15830 Ronald C Breckner 79 447-4020
15862 .....NP
9 Residence

EAGLE CREEK AVE SE 55372
Prior Lake
15100-16099 TZ 809 $B..F 4
042110
15160 Louise E Smith 77 447-5162
15220 John Hackley 77 447-5512
15280 Stanley A Hodgson 77 447-3760
15420 Dean Sunde 447-4574
15810 B J Borchardt .....R 447-8191
16000 Irv H Humphrey 78 447-4055
16020 John O Babcock .....R 447-2054
16030 Richard W Higgins .....R 447-8288
16044 Robert D Robbs 75 447-4788
16058 Dennis L Swanson 76 447-5976
16072 Charles R Brazier 77 447-4736
16084 Joe E Starr 76 447-5911
16094 D James Space 78 447-5225
13 Residence

EAGLE CREEK BLVD
Shakopee
R R 1 55379
1700- 6799 TZ 803 $B..F 4
042120
1796 Howard Schmitt 77 445-5136
1803☆P Ma Metal Product ....R 445-1890
1812 John Clay 77 445-3845
1825☆Yerwoo Manufactrg 445-6166
1827☆Propane Carb&Turbo 445-3910
☆Propane Carb&Equip 445-6070
1952 D E Gilbertson 79 445-4709
1955☆P&R Mini Storage 445-7140
1992 Ross Ed Clay .....R 445-2434
Dan Patterson 80 445-5713
Richard J Solem .....R 445-7395
2000 James H Hanson .....R 445-1286
2006 Gary F Schmitt 445-2269
2024 John J Schwartz 445-1746
2032 Van D Sindelar .....- 445-2181
2047☆Parrott Constr 445-8128
2056 David Parrott 78 445-7468
Donald C Parrott 445-2058
2064 Howard S Lohmann 77 445-3003
2071☆Ale Landscaping 445-6114
2860 Richard A Geiser 445-1565
3001 Terry L Heuer 79 445-7564
3003 Darrell Ray Will 80 445-2019
3140 James J Hauer 77 445-1739
3401☆Distrbtn Constrctn 445-1575
3540☆Dennys Constructn 445-4143
☆Hobb&Assoc Const 445-6368
☆Kelran O'Brien&Asc 445-4713
3850 Zefere Lusignan 71 445-3583
3980 Mrs Ira Webster 445-2059
4025 James S Bottom 445-5682
4731 David W Zak 80 445-9563
4751 Joseph J Smith 77 445-1517
4767 Milo Jonsson 445-4349
4915 Edna Waalen 445-4821
Jerald Waalen 445-4821
4955 Todd Becken 78 445-6670
4915 Gary T Sorenson .....- 445-8480
4935 Edward Ellertz 77 445-3185
4955 Craig Holzer 78 445-5388
4985 Roger E Thompson 445-2220
5095 David J Stang 80 445-7122
5055 Gerald A Popp 445-6643
5085 Larry R Blom 78 445-3580
5215 Robert L Rawson 445-3799
5250 Jerry F Truhn 78 445-4968
5262 David Czaja 76 445-8071
David Czaja 76 445-8072
5310 Charles R Griffin 445-6009
5331 Walter M Heinzen 78 445-4822
5352 Harlan H Haworth 77 445-4199
5371 Daniel M Dylla 80 445-5199
5380 .....NP
5411 James E Pietrzak 76 445-7708
5420 Bruce Novak 77 445-2456
6865 Norman Shutrop 445-3952
7051☆Eagle Crk Stable .....R 445-8821
Dennis L Sigurdson 445-5844
7501 Roy S Reed 445-5190
7556 Steven Muhlenhardt 445-7462
7755 David Lucast 77 445-7305
7835 Klegstad Gerald .....R 445-9438
☆Jerry's Lawn Indstr 445-7662
8234 Ralph M Ferry 445-4565
8256 Raymond E Hoffman 445-1038
8358 Gary K Mills 80 445-8299
8364 Carole R Kusienski 77 445-6254
8380 Orval M Dahl 77 445-4606
8455 Elmer C Halvorsen 77 445-3699
8484 Ronald E Ward 77 445-2861
8535 Edward E Goerish 77 445-1054
8735 Lawr Knaysenbrink 77 445-5376
59 Residence 13 Business

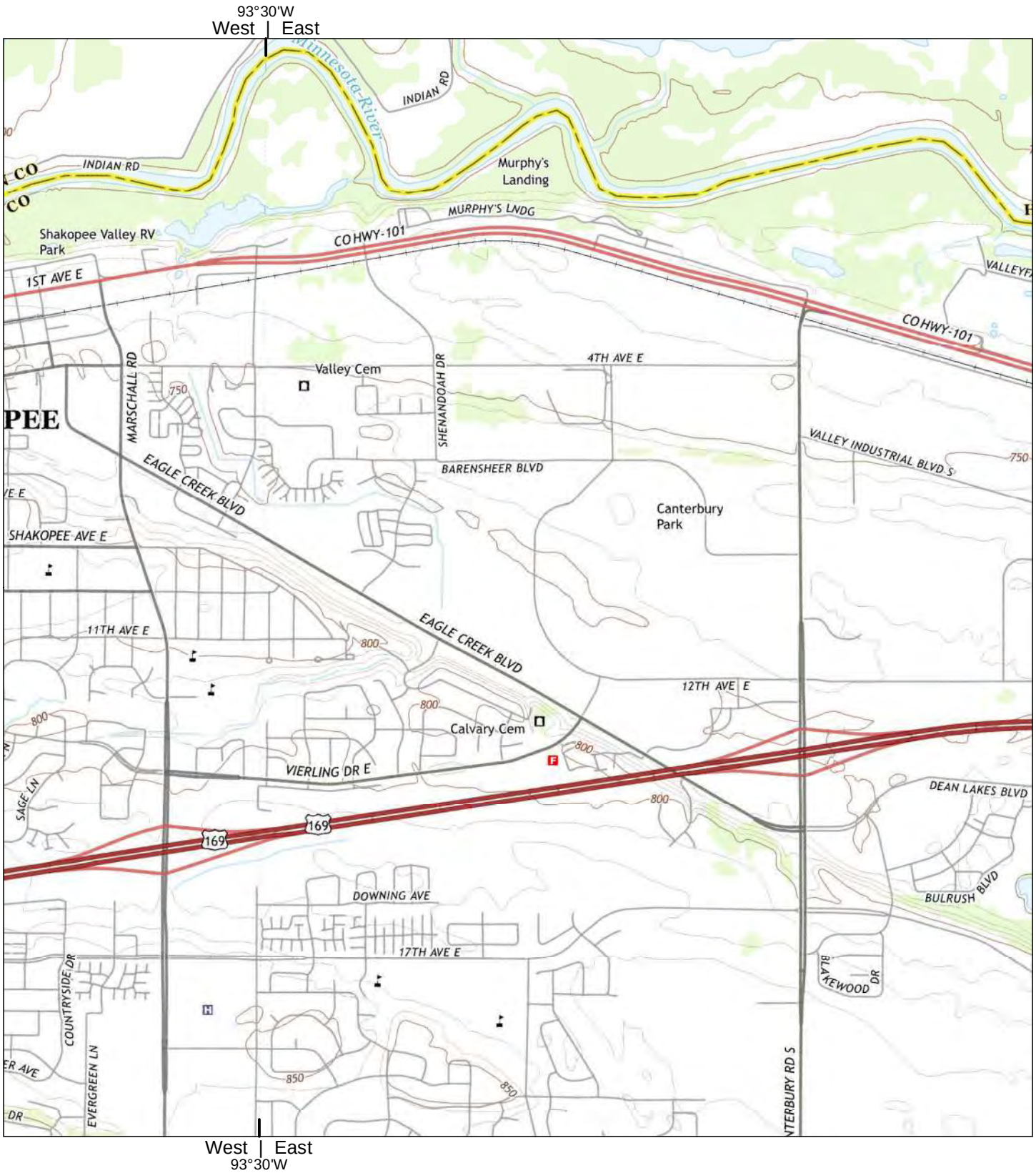
EAGLE CREEK DR 55372
Prior Lake
15200-15899 TZ 809 $B..F 4
042130
15260 James J Underferth 79 447-3593
15862☆Lakeside Marine 447-4300
1 Residence 1 Business

EAGLE LAKE DR 55369
Osseo
6100- 6699 TZ 26705 $B..C 4
042140
6125 Thomas Hanson 75 535-4188
6131 .....NP
6153 Wayne T Kurowski .....R 535-0086
Lloyd Lenarz 535-1393
Bud Williams 78 537-0111
6181 Howard Hornbrook 75 535-2698
6187 Robert Alanko 79 533-0450
6201 .....NP
6202 Thomas J Merten 78 533-0705
6203 Dale E Holmberg 533-8503
6204 Jerome J Forare 76 533-6522
6205 Daniel B Marhula 75 537-9316
Stanley E Marhula 75 537-9316
6207 Richard Susick 80 538-9603
6211 C McCarter 75 535-2939
Laura Washburn 75 535-2939
6213 Larry Lundquist 78 537-8381
6216 Craig Lahtela 76 535-9011
6217 Daniel F Cotlow 77 535-2095
6218 .....NP
6219 John H Hall 75 533-4115
6220 Lloyt G Stewart 74 533-9686
6222 Harold A Hickle 77 535-4489
6223 Edgar Jay Anderson 75 537-3849
6225 D F Vansteenwyk 537-1861
6227 L A Laugen 80 533-5637
6228 Colleen Rossland 77 535-3542
6229 Emery M Hegedus 75 535-7253
6231 Joseph A Weber 75 533-1422
6232 Robert L Pielan 537-3751
C Stroebel 79 537-5771
6236 Harry Henriksen 77 535-3054
6238☆Eagle Lk Comm Ctr 537-9028
6242 Fred Canfield 79 535-2363
6243 Michael Kuch 537-6754
6244 Carl W Tomczak 537-5505
6245 D R Maly .....R 533-0822
6247 Ray F Ostrander 73 533-8787
6248 Robert C Zavadil 80 537-1849
6251 Leslie E Wilson 533-3427
6252 Curtis T Anderson 533-5123
6254 .....NP
6256 Douglas L Foster 77 533-7606
6258 6267 6300 .....NP
6305 James C Wrobel 78 535-4705
6308 Tim Klabunde 78 535-9051
6312☆Eagle Appliance 533-2933
6313 Karl Jacobson 535-2578
6319 Lee G Hill 76 533-8372
6320 Harold L Hill 537-5643
6325 James W Haney .....R 537-1482
6333 Earl E Guthier 537-5571
6340 Frank F Spartz 537-5943
6341 .....NP
6342 Dennis M Barry 80 537-9659
6345 Raymond Tom Bailey 80 533-1607
6348 Delbert L White 537-5789
6350 Emil A Erickson 537-5902
6353 Richard K Bates 535-2666
6357 Gary L Moinau .....- 537-2055
6358 Richard Tiffany 79 536-5954
6363 Terrill W Jasicki 77 537-7916
6410 6415 .....NP
6419 Richard T Firtko 79 537-0285
6425 Richard D Kruger 76 535-4404
6435 John R Anderson 79 533-3714
6439 Glen F Busitzky 78 535-1129
6500 Richard D Allen 537-6146
6505 Dale D Kloss 533-5855
6509 Max J W Weston 77 535-0782
6510 George Bergquist 537-5772
6517 V V Strombeck 535-2595
6526 Gerald M Lanigan 533-1154
6529 Donald G Dille 537-0464
6533 Donald J Petersen .....R 537-1760
6540 Sever L Swanson 78 535-7162
6541 Marc Partridge 79 533-6837
6545 Paul Weiss 80 533-8755
William J Weiss 535-7482
6549 Russell K Ames 79 537-2683
R J McGlynn 537-8334
6552 Ruben Dirks 537-3940
6553 Richard W Boe 76 535-8337
6606 E Richard Clifford 533-7201
6609 Alvin L Monson .....R 536-9101
Karl R Swanson .....- 533-0154
6613 Kim Thiebault 77 537-0818
6614 Wesley E Krueger 535-0145
6621 Richard F Cornwell 77 537-2570
6625 Charles Weber 533-3869
6633 Edw C Vavreck Sr 78 533-6686
6636 James E Smith 535-2686
6639 Alvin H Esenrich 535-2212
94 Residence 2 Business

EAGLE LAKE DR W 55369
Osseo
100- 599 TZ 26705 $B..C 4
11600-11699 TZ 26705 $B..C 4
042150
100 R Femrite 425-6436
101 John A Rabeschke 79 425-1210
102 E M Lackmann 78 425-7211
103 G F Tenpid 78 425-9549
104 Gene E Newcomb 76 425-5982
105 J L Zahn 80 424-3266
106 Barry Fisher 80 425-4697
107 Bradley R Jansen .....R 424-9689
108 B G Bolton 79 425-0256
109 Roland E Anderson 78 425-9328
110 Harold O Thorsen 78 425-4688
111 .....NP
112 James B Walder 78 425-8320
113 Robert M Campbell 78 425-6823
114 .....NP
115 Richard C Davidson 77 425-7648
116 Gary M Larson 79 425-9226
117 R W Johnson 77 425-8578
118 Kenneth J Anderson 78 425-8067
119 E L Thurow 76 425-9150
120 T S Jensen .....- 425-9130
121 Roy Glover .....R 424-5342
122 Walter R Eastman .....- 424-4070
Judith A Lunzer .....- 424-4070
123 Ronald F Zirul 77 425-8967
125 N A Miller .....R 424-4740
126 E A Galli 77 425-8952
127 Robert Noterman .....- 424-4782
128 B L Plank 76 425-2308
129 Patrick Cahalan .....- 424-4519
130 Thomas J McCoy 76 425-2357
131 David T Wolk .....- 424-4865
132 John Thomas Klick 76 425-9541
133 J Peterson 78 425-5025
134 C R Blom 76 425-9437
135 Robert J Meissner 76 425-4897
136 Charles Haskins 77 425-5731
137 Joan E Bart 80 425-1680
138 Cheryl Madden .....R 425-9790
140☆A Johnson Dentrs 425-2552
141 S Fix 77 425-4749
142 C Ruthenburg .....- 424-4294
143 Timothy Odyke .....R 424-2542
144 Andrey Sroka 76 425-8848
145 Martis Barto 78 425-2486
146 Ronald M Cleveland 77 425-6009
147 Paul Blomberg 78 425-9757
148 Kenneth E Johnson .....- 425-9513
149 Chas P Littlefield 425-9478
Karen E Shaw 425-9470
211 .....NP
212 Robert K Anderson 80 424-2879
213 .....NP
214 D Peterson 78 425-8594
215 Maynard D Boos 75 425-6785
216 .....NP
217 Rhonda D Hathorne ....R 424-4866
James W Price 75 425-4506
218 Eugene Rabe .....R 424-5249
219 Donald J Wisdorf 78 425-1367
220 Michael W Berneck 78 425-6870
221 Robt J Klosterman 76 425-5974
222 Robert C Kuder 73 425-6257
223 Deanna Rippentrop .....- 424-3852
230 Robt L Henschel Sr 73 425-6081
231 K M Bussio 79 425-6147
232 Hamis Mustafa 79 425-1939
233 A M Rude .....- 424-5433
234 Charles T Schlang 73 425-2182
235 B J Anderson 79 425-3572
B Yandt 78 425-3572
236 Stephen Dess 76 425-6043
237 Timothy Morgan 80 424-2250
238 Duane S Davis .....R 424-5038
239 Hans Deller 77 425-4787
240 L L Johnston 73 425-4809
241 A M Larson 76 425-7759
242 Bruce P Johnson 75 425-3312
243 Phyllis Goman .....R 424-3938
244 Melvin A Olson 73 425-6137
245 Pat Julie Nadeau .....- 425-3583
246 Daniel L Wittkopp .....R 424-4171
247 P A Olson 78 425-1512
248 Roger Johnson 80 425-9694
249 Steven R Olson 80 424-3949
250 G W Langewisch 76 425-9645
251 M C Hill 80 425-9652
252 A R Parkhurst 78 425-9074
276 Barry L Shipley 78 425-8501
277 B C Larson 79 425-8686
278 E Gurholt .....R 425-2977
279 James W Fultz 77 425-3252
280 L J Christianson 78 425-1587
281 Michael R Drake 80 424-3238
282 P G Smith 80 425-9125
283 P J Hasse 79 425-0647
285 Thomas A Seeger 73 425-3246
286 I A Swanson 425-9274
287 Tom Eichenberger 78 425-6089
288 Lee Thompson 73 425-6060
289 C Bergermann 78 425-4315
290 S B William 79 425-5646
291 Dick Bremer .....R 424-4598
292 John L Sullivan 80 425-8153
293 D C Grammond 80 424-2978
294 Bruce A Pankonin .....R 425-4017
295 Ronald A Albrecht 77 425-6867
296 Robert O Laugen .....- 425-2903
297 Philip M Schmidt 78 425-9119
298 M J Moor 80 425-8473
299 J R Palmer 76 425-2835
300 James R Boyer 78 425-9523
301 Alice H Wicks 73 425-3078
302 Susan G Grantham 80 425-1758
303 John D Stewart 77 425-8526
304 D M Miller 78 425-3689
305 Larry Bourgeine 80 425-5912
306 J M Johnson 78 425-5913
307 Kay L Nordstrom 79 425-0605
308 .....NP
309 D M Goad 78 425-6873
310 Myron J Kuklok .....R 424-3186
311 S P Leal .....R 424-4429
312 .....NP
313 Alan Nater .....R 425-8958
314 .....NP
315 D A Kreatz 78 425-6627
316 H M Schulze 76 425-9642
317 318 .....NP
319 Michael P Richdorf 78 425-1349
320 Synthia H Kruse 79 424-2236
321 Joan Dickinson 80 425-5778
Pat Jacobson 80 425-5778
322 C J Anderson 78 425-1236
323 Curt Bunnell .....R 424-5484
Lon Evans .....R 425-3583
324 Glenn L Seutter 73 425-5702
325 Laverle Julius 80 425-1726
326 C A Holl 75 425-5175
327 Earl Wodtke 78 425-1037
328 Scott Beckham .....R 424-4752
329 .....NP
330 John A Crema 73 425-4960
331 S Grandstand .....R 424-3317
Damian McElrathe .....R 424-3317
332 Merle O Johnson .....R 424-2682

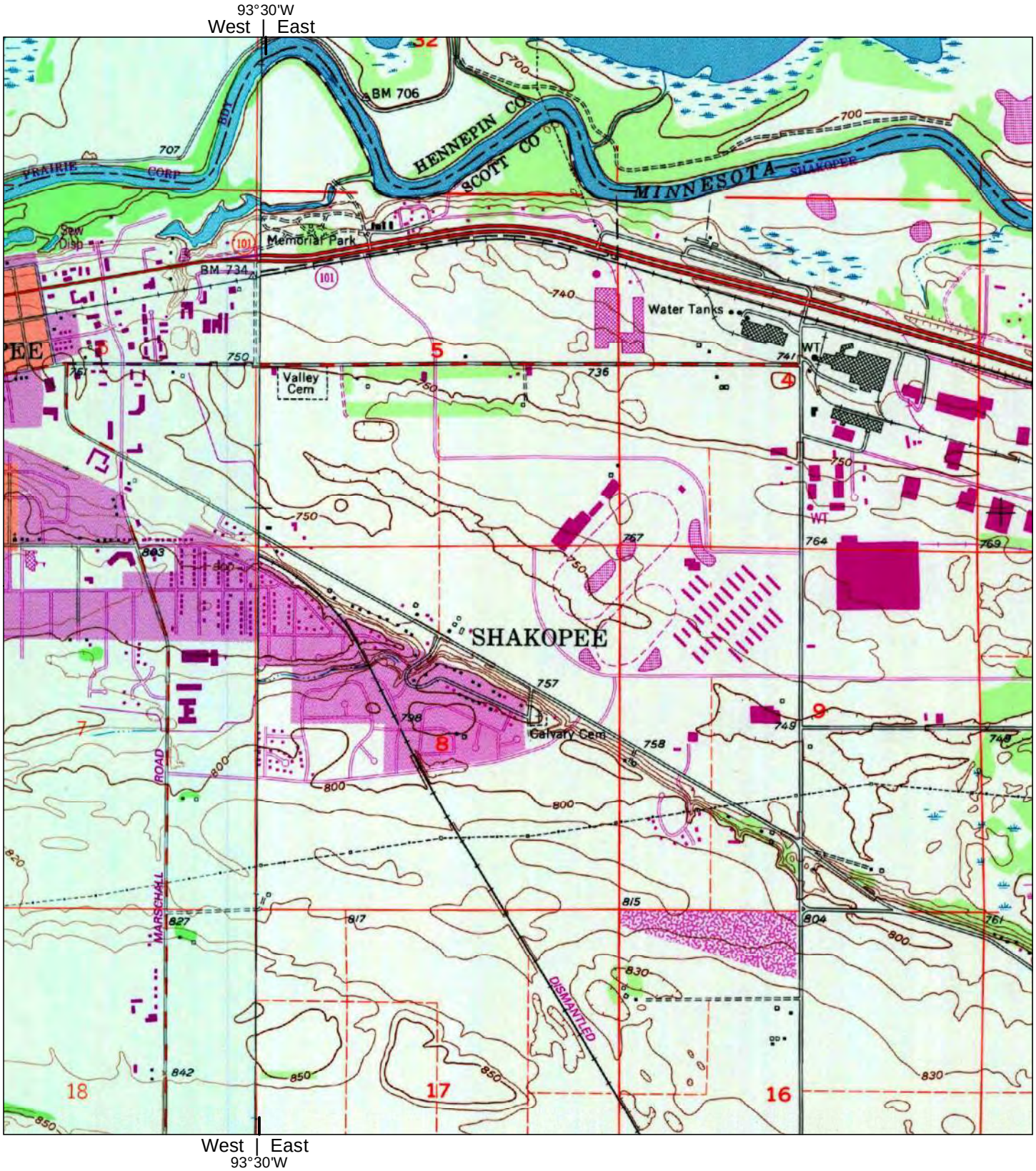
Appendix F

Historical Maps



2013	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 15N	Site information: Canterbury Commons 4071 Eagle Creek Blvd Shakopee, MN 55379
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.	Wenck Associates project #3237-0015 HIG #2001849 completed: 02/16/2017	

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates Photo Year	Inspected	Revised
East	Eden Prairie, MN	USGS	7½' x 7½'	2013	--	--	--
West	Shakopee, MN	USGS	7½' x 7½'	2013	--	--	--



1993

0 Distance in Miles 1

1: 24,000 (1"=2,000') NAD 1983 UTM Zone 15N

Site information:
Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN 55379

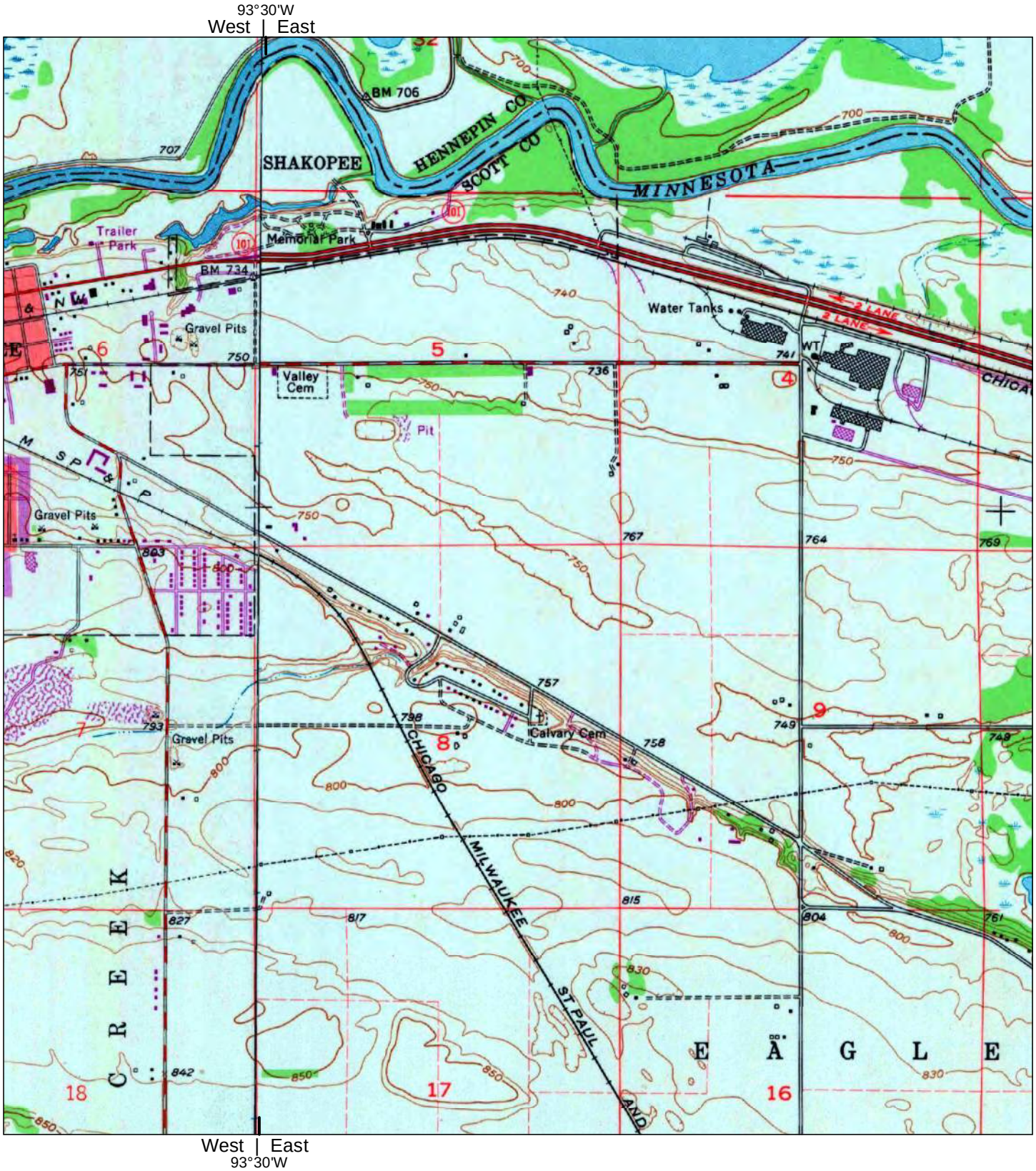
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.

Wenck Associates project #3237-0015
HIG #2001849 completed: 02/16/2017

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates: Photo Year	Inspected	Revised
East	Eden Prairie, MN	USGS	7½' x 7½'	1967	1992	--	1993
West	Shakopee, MN	USGS	7½' x 7½'	1958	1991	--	1993

1980	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 15N	Site information: Canterbury Commons 4071 Eagle Creek Blvd Shakopee, MN 55379
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.	Wenck Associates project #3237-0015 HIG #2001849 completed: 02/16/2017	

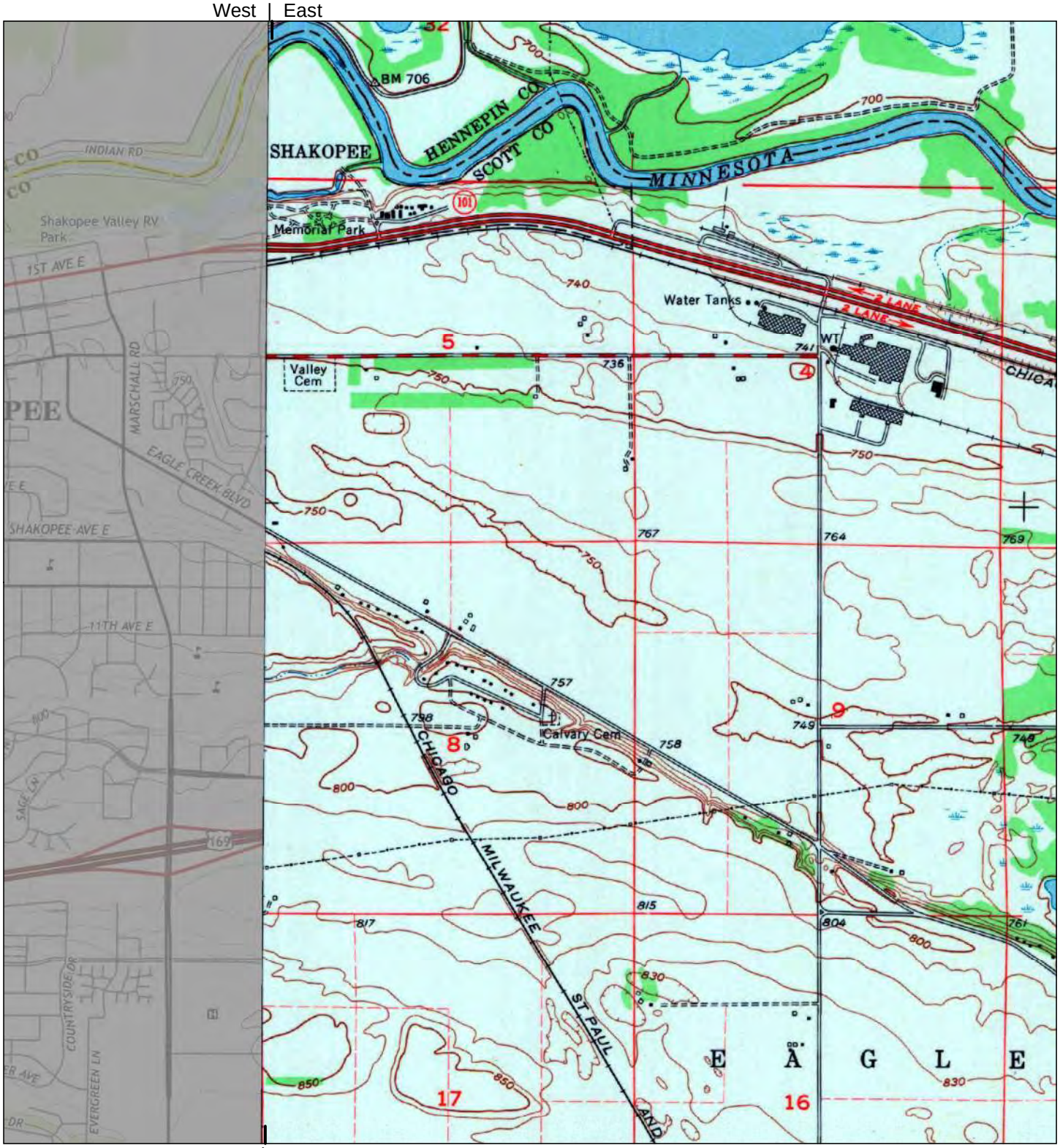
Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates Photo Year	Inspected	Revised
East	Eden Prairie, MN	USGS	7½' x 7½'	1967	1977	--	1980



1972	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 15N	Site information: Canterbury Commons 4071 Eagle Creek Blvd Shakopee, MN 55379
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.	Wenck Associates project #3237-0015 HIG #2001849 completed: 02/16/2017	

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates Photo Year	Inspected	Revised
East	Eden Prairie, MN	USGS	7½' x 7½'	1967	1972	--	1972
West	Shakopee, MN	USGS	7½' x 7½'	1958	1972	--	1972

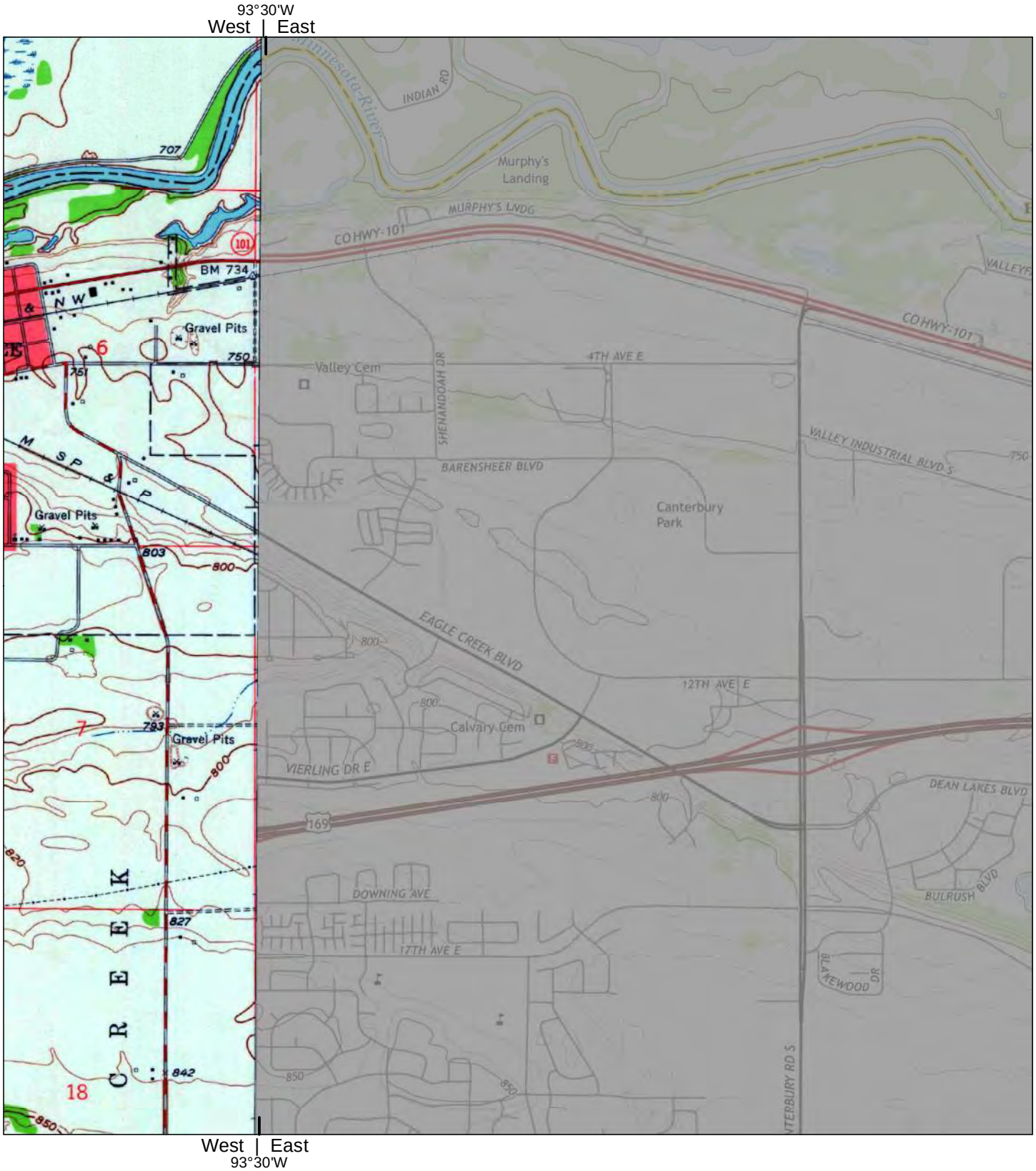
93°30'W
West | East



West | East
93°30'W

1967	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 15N	Site information: Canterbury Commons 4071 Eagle Creek Blvd Shakopee, MN 55379
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.	Wenck Associates project #3237-0015 HIG #2001849 completed: 02/16/2017	

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates Photo Year	Inspected	Revised
East	Eden Prairie, MN	USGS	7½' x 7½'	1967	1947	--	--

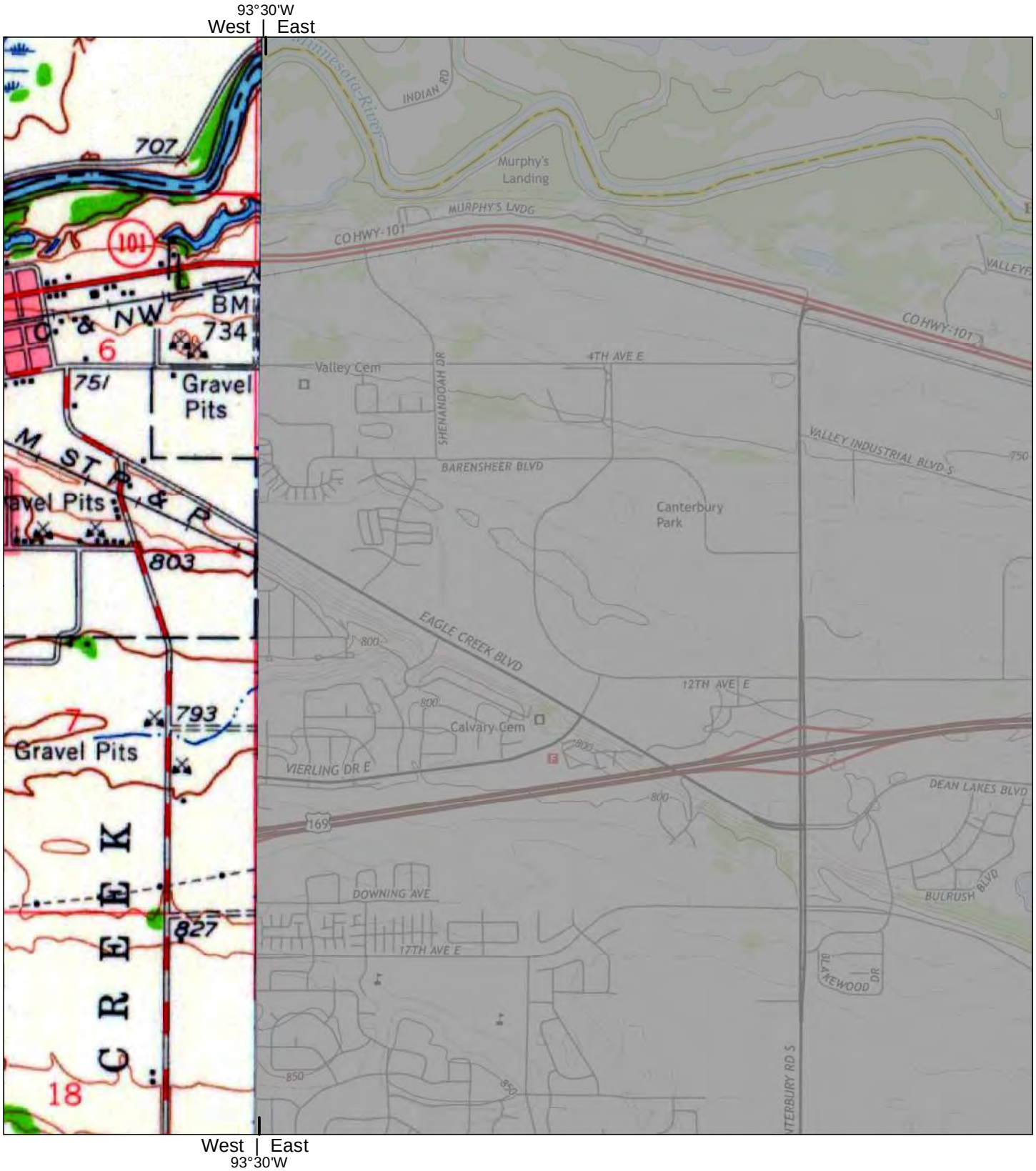


1958	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 15N	Site information: Canterbury Commons 4071 Eagle Creek Blvd Shakopee, MN 55379
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.	Wenck Associates project #3237-0015 HIG #2001849 completed: 02/16/2017	

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates Photo Year	Inspected	Revised
West	Shakopee, MN	USGS	7½' x 7½'	1958	1953	--	--

1954	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 15N	Site information: Canterbury Commons 4071 Eagle Creek Blvd Shakopee, MN 55379
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.	Wenck Associates project #3237-0015 HIG #2001849 completed: 02/16/2017	

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates: Photo Year	Inspected	Revised
East	Eden Prairie, MN	USGS	7½' x 7½'	1954	1947	--	--



1958

0 Distance in Miles 1

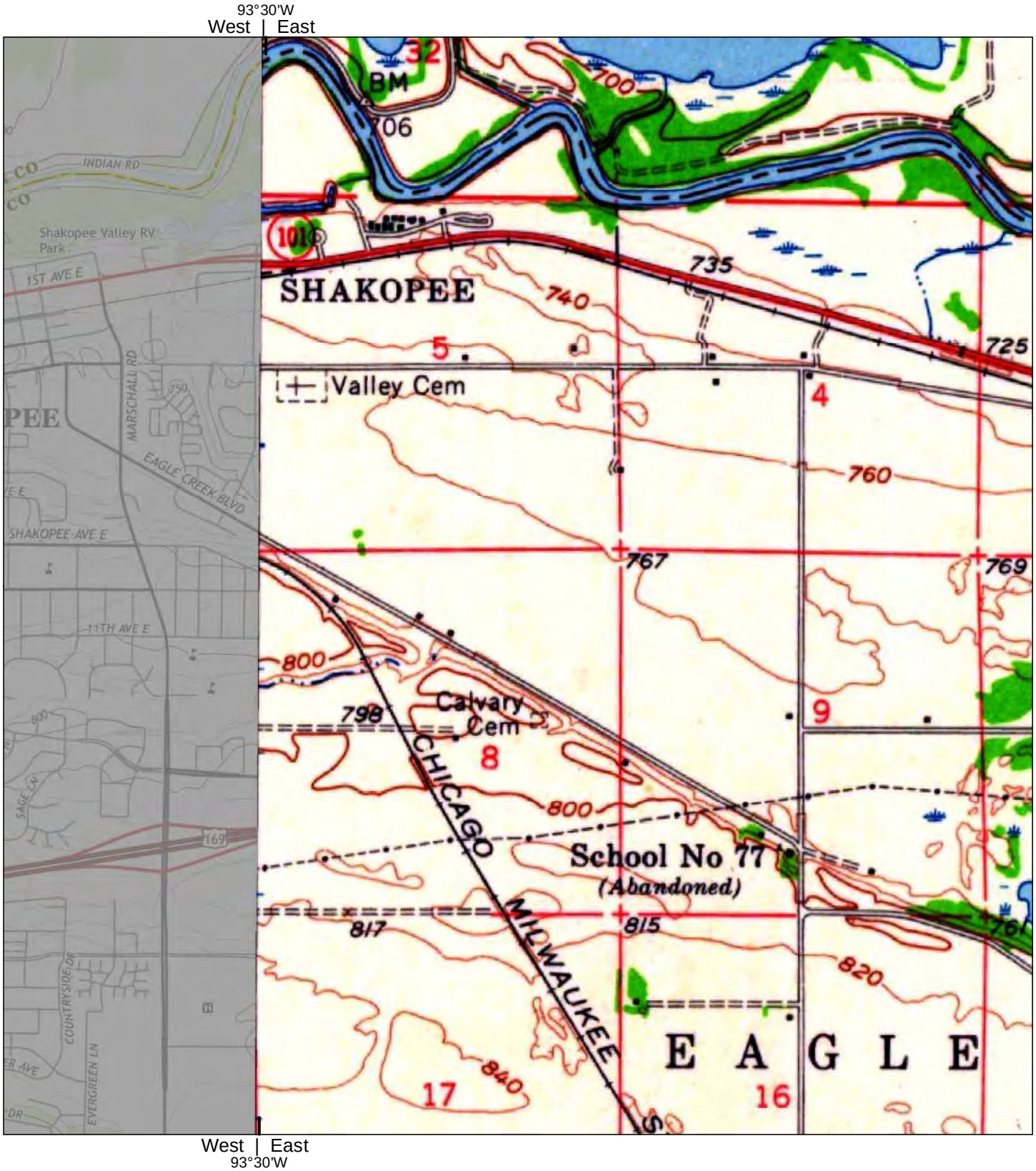
1: 24,000 (1"=2,000') NAD 1983 UTM Zone 15N

Site information:
Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN 55379

Unified maps show subdued modern topo features where corresponding maps of the same year were not published.

Wenck Associates project #3237-0015
HIG #2001849 completed: 02/16/2017

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates: Photo Year	Inspected	Revised
West	Lake Minnetonka, MN	USGS	15' x 15'	1958	1953	--	--



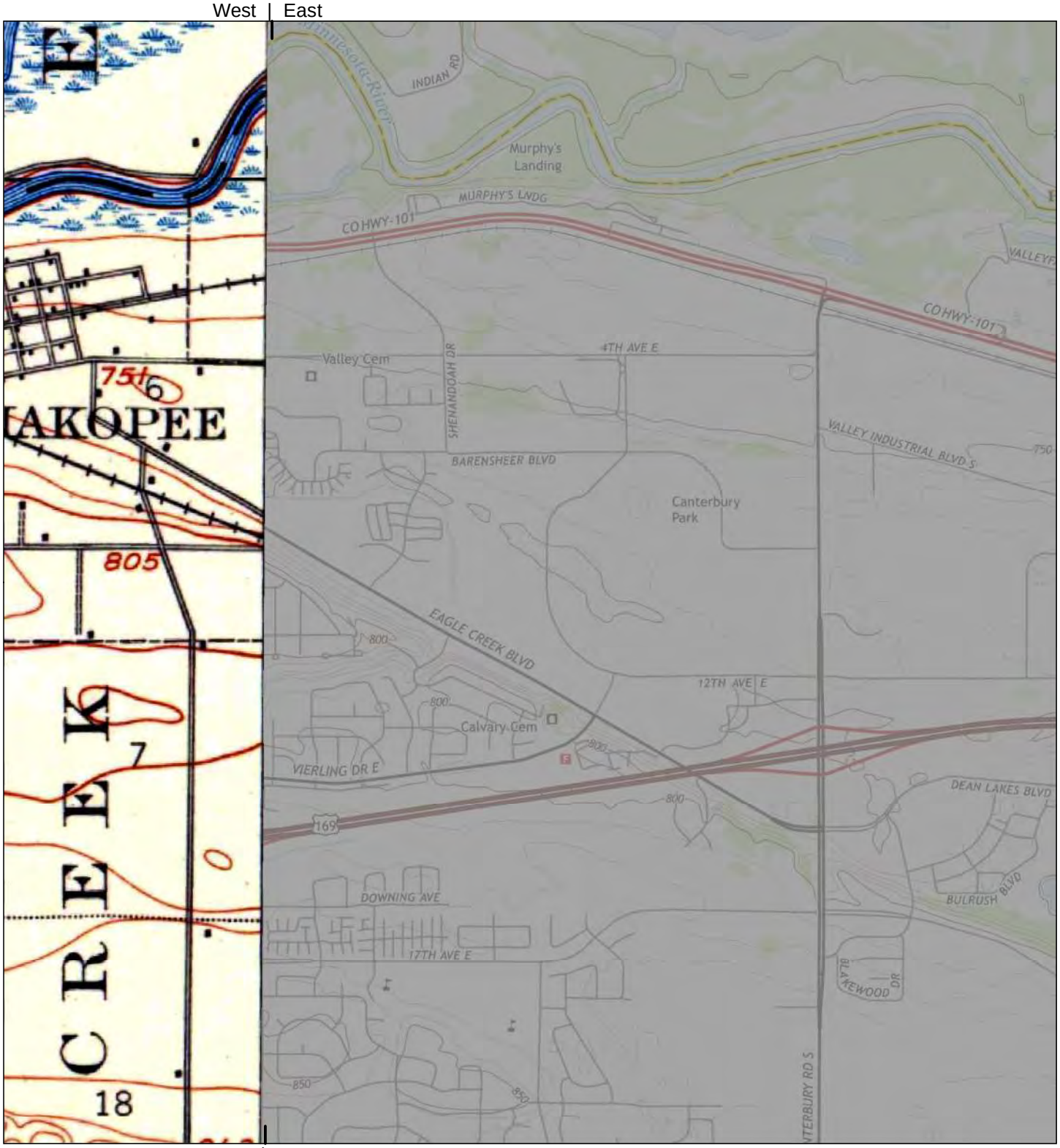
1954	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 15N	Site information: Canterbury Commons 4071 Eagle Creek Blvd Shakopee, MN 55379
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.	Wenck Associates project #3237-0015 HIG #2001849 completed: 02/16/2017	

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates Photo Year	Inspected	Revised
East	Minneapolis, MN	USGS	15' x 15'	1954	1951	--	--

1907	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 15N	Site information: Canterbury Commons 4071 Eagle Creek Blvd Shakopee, MN 55379
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.	Wenck Associates project #3237-0015 HIG #2001849 completed: 02/16/2017	

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates Photo Year	Inspected	Revised
West	Minnetonka, MN	USGS	15' x 15'	1907	--	--	--

93°30'W
West | East



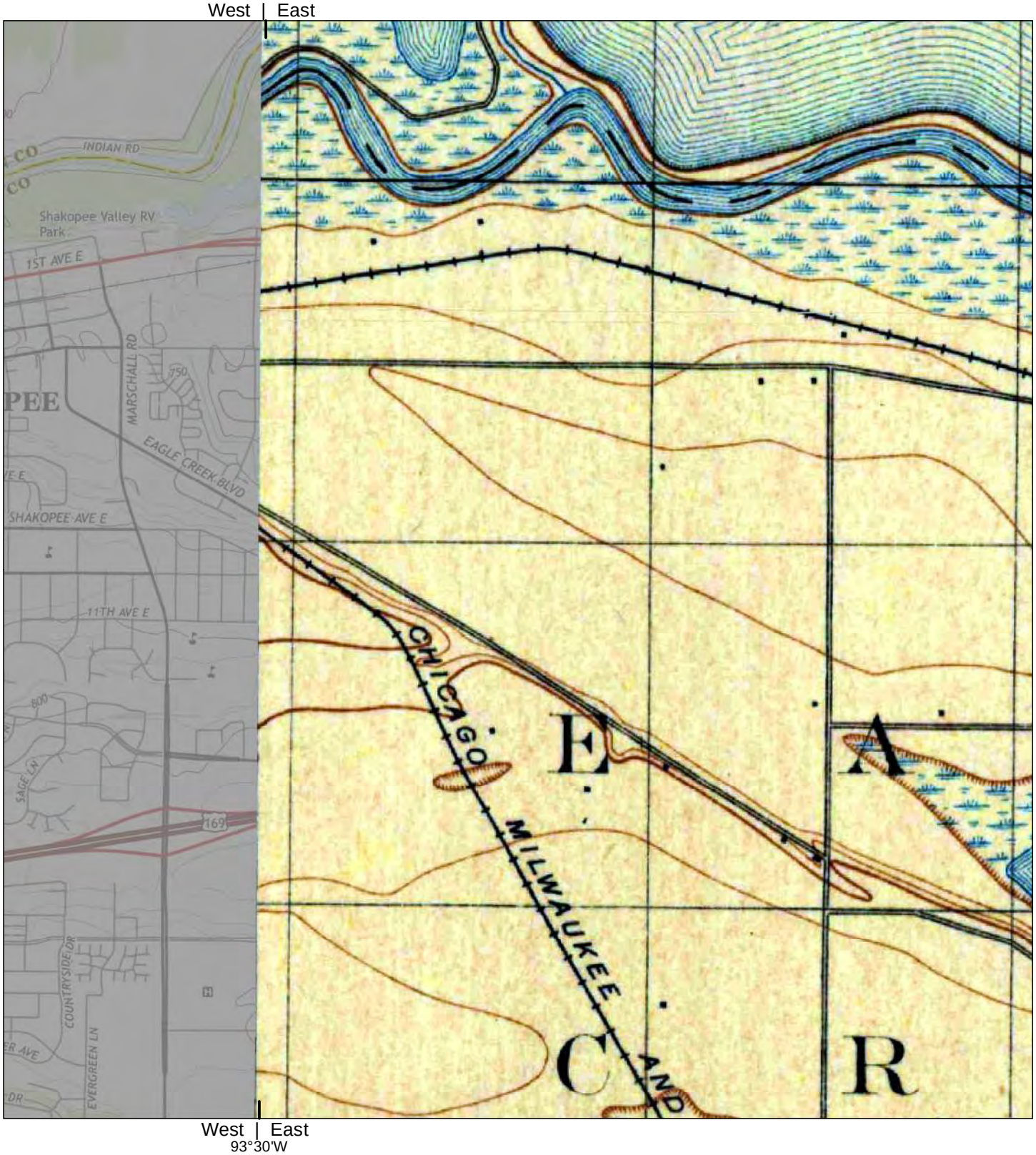
93°30'W
West | East

1905	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 15N	Site information: Canterbury Commons 4071 Eagle Creek Blvd Shakopee, MN 55379
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.	Wenck Associates project #3237-0015 HIG #2001849 completed: 02/16/2017	

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates: Photo Year	Inspected	Revised
West	Minnetonka, MN	USGS	15' x 15'	1905	--	--	--

1901	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 15N	Site information: Canterbury Commons 4071 Eagle Creek Blvd Shakopee, MN 55379
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.	Wenck Associates project #3237-0015 HIG #2001849 completed: 02/16/2017	

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates: Photo Year	Inspected	Revised
East	Minneapolis, MN	USGS	15' x 15'	1901	--	--	--



1896	0 Distance in Miles 1 1: 24,000 (1"=2,000') NAD 1983 UTM Zone 15N	Site information: Canterbury Commons 4071 Eagle Creek Blvd Shakopee, MN 55379
Unified maps show subdued modern topo features where corresponding maps of the same year were not published.	Wenck Associates project #3237-0015 HIG #2001849 completed: 02/16/2017	

Zone	Topographic Map Name	Publisher	Map Size	Base Map	Aerial Photo Topo Updates: Photo Year	Inspected	Revised
East	Minneapolis, MN	USGS	15' x 15'	1896	--	--	--

Appendix G

Subject Property Photographs

1) Northwest corner of Subject Property

2) Adjacent properties to northwest

3) Adjacent residences to west

4) Adjacent culvert near southwest corner

5) Adjacent farmstead to south

6) Adjacent farmstead to south

7) Portion of Sever's Fall Festival area

8) Portion of Sever's Fall Festival area

9) Propane tanks associates with Sever's buildings

10) Eagle Creek Boulevard adjacent to south

11) Southwest corner of Subject Property

12) Contractor parking and trailer on southwest portion of Subject Property

WENCK ASSOCIATES

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13) Minor dumping along east side of Subject Property

14) Discarded 55-gallon drum on east side of Subject Property

15) Northern portion of Subject Property

16) Debris pile near center of Subject Property

Appendix H

Research Summary

HIG Research Summary

Site Location
Canterbury Commons
4071 Eagle Creek Blvd
Shakopee, MN

Requested by
Wenck Associates
1800 Pioneer Creek Center
Maple Plain, MN

HIG Project #
2001849
Client Project #
3237-0015
Date Created
02/20/2017

Historical Information Gatherers

This Research Summary identifies the products and services provided by Historical Information Gatherers, Inc. (HIG) for the above referenced site location. All products are provided as PDFs unless otherwise noted.

Historical Aerial Photographs

Aerial photographs of the site location were used to create a multi-page file named AerialPhotos. Each aerial photograph has a title block that includes the year and scale of the photograph as well as project information submitted at the time the order was placed. The years provided are:

1940, 1947, 1951, 1957, 1964, 1966, 1970, 1980, 1984, 1991, 1997, 2000, 2003, 2008, 2013, 2015

City Directory Pages/Abstracts

Research Methodology: A search was conducted for city directories that include coverage of the site area using HIG's City Directory Collection and other sources, if needed. Directories for the following years were identified for the site area. A comma between date ranges indicates a gap of 10 years or more in available city directories:

Minneapolis, MN 1982-2012

The above listed directories were reviewed at approximate 5 year intervals to determine if the street(s) specified in the order were included in the directories and had listings for the site area. HIG attempted to identify former street names and aliases and if identified, these were also included in the review.

Research Results: City directory information, when provided, was used to create a multi-page file(s) named CD- followed by the street name. When City Directory Pages are provided, the publication name and date are shown at the top of each page. When a City Directory abstract is provided, the first page of the abstract includes the relevant publication information. The years of coverage identified for each street and any identified historical street names are as follows:

Eagle Creek Boulevard (1982-2012)

FIM+ Maps

The HIG Historical Map Collection and the United States Library of Congress Map Collection were searched for fire insurance maps (FIM), real estate atlases and similar maps for the site location and adjoining properties. No FIMs or similar maps were identified for the site location and/or adjacent properties.

Database Report

A GeoSearch Database Report is provided as a file named DBR. Links to the text file, unlocatable report and zip report can be accessed by clicking on the paperclip icon within the GeoSearch report. Key information regarding the database listings is included in a separate Excel spreadsheet named DBRS.

Plat Maps+

An online search was conducted for recent plat or parcel maps of the site location and coverage is provided in the file named PropertyMap.

In addition, a search was completed of the HIG Historical Map Collection for historical survey documents and cadastral maps. Maps that cover the site location were provided in a file named HistoricMaps. The years of coverage provided are listed below.

1855, 1898, 1944

Topographic Maps

The HIG Historical Map Collection was searched for topographic maps for the site location and adjoining properties. Maps from the HIG Collection were used to create a multi-page file named TopoMaps. The years provided are:

1896, 1901, 1905, 1907, 1954, 1958, 1967, 1972, 1980, 1993, 2013

Up to four different topographic maps may have been used to create a unified map showing the site location in the center. Unified maps show subdued modern topo features where corresponding maps of the same year were not published. The date in large font on each map is the date HIG has attributed to the map based on the date of first publication, or the most recent date of map inspection or revision. The definitions below provide clarification regarding the dates included in the HIG title block for each map.

Base Map Year - The year when a topographic map was first published or the date the map was significantly revised and given a new base map date.
Photo Year - The date of the most recent aerial photography used to create, revise, or inspect the map.
Photoinspected Year - The year the base map was compared to a more recent aerial photograph. If the comparison showed that no changes were needed, the map was marked photoinspected and no changes were made to the map.
Photorevised Year - During the photo inspection process, if enough changes were observed, the map would be revised by adding the new features. These changes were not field checked and are shown in purple on the photorevised maps.

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Toll Free: 800-472-2232 Email: wenckmp@wenck.com Web: wenck.com

MINNESOTA
Maple Plain
763-479-4200

Bloomington
952-831-5408

Windom
507-831-2703

New Hope
800-368-8831

Woodbury
651-294-4580

COLORADO
Denver
602-370-7420

GEORGIA
Roswell
678-987-5840

NORTH DAKOTA
Fargo
701-297-9600

Mandan
701-751-3370

Williston
800-472-2232

SOUTH DAKOTA
Pierre
605-222-1826

WYOMING
Cheyenne
307-634-7848

Sheridan
307-675-1148

Appendix E

Traffic Report

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Traffic Analysis

Canterbury Commons

SHAKOPEE, MINNESOTA

MAY 2017

Prepared By:

Kimley»Horn

Contents

TABLES

1.0 INTRODUCTION

This report documents the traffic analysis performed as part of the Environmental Assessment Worksheet (EAW) that is being completed for the Canterbury Commons development. As part of the EAW process the impacts on transportation and traffic related to the proposed project must be reviewed.

1.1 SITE LOCATION

The development is in the City of Shakopee, Scott County, Minnesota. The development will be generally located in the southwest quadrant of the existing Canterbury Park site along the north side of Eagle Creek Boulevard, west of County Highway 83. The project location is shown in **Exhibit 1** in **Appendix B**.

2.0 EXISTING CONDITIONS

2.1 ADJACENT LAND USES

North of the proposed site is Canterbury Park, an entertainment venue that offers a casino, horse-racing events and hosts concerts and other activities throughout the year. The land use adjacent to the development to the south and to the west is residential. East of the proposed development is commercial (retail and office) and some industrial.

2.2 STUDY AREA

The study area includes the existing and future intersections that have a significant effect on the roadway system due to the development. An exhibit providing the study intersection locations is provided in **Appendix B** (Exhibit 1). These intersections include:

- County Highway 83 & Barenscheer Boulevard (Existing)
- County Highway 83 & 12th Avenue E (Existing)
- County Highway 83 & US Highway 169 (WB) (Existing)
- County Highway 83 & US Highway 169 (EB) (Existing)
- County Highway 83 & Eagle Creek Boulevard (Existing)
- 12th Avenue E & Vierling Drive (Existing)
- Eagle Creek Boulevard & Vierling Drive (Existing)
- Eagle Creek Boulevard and North-South Roadway (Proposed)
- Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard (Existing/Proposed)
- Shenandoah Drive & North-South Roadway (Proposed)
- Project Driveways

2.3 EXISTING ROADWAYS

The existing roadway network within the study area includes US Highway 169, County Highway 83, Eagle Creek Boulevard and Vierling Drive. Several streets that compose the existing roadway network will carry trips generated by the development.

US Highway 169 (TH 169) is a four-lane limited access facility that runs in an east-west direction near the study area. An interchange is provided at its intersection with County Highway 83. US Highway 169 provides access to Highway 13 and I-494 to the east and US Highway 41 to the west.

County Highway 83 (CSAH 83) is a four-lane arterial that runs in a north-south direction within the study area. An interchange is provided at its intersection with US Highway 169. County Highway 83 provides access to Highway 101 and US Highway 169 to the north and County Highway 16 and County Highway 42 to the south.

Eagle Creek Boulevard is a four-lane collector type roadway that runs in a northwest-southeast direction within the study area. It provides access to residential areas of Shakopee to the west and access to County Highway 83 to the east.

Vierling Drive is a four-lane collector that runs east-west between Marystown Road to the west and Eagle Creek Boulevard to the east. It is parallel to US 169 and is north of US 169.

Major characteristics of these roadways are summarized in **Table 1**.

TABLE 1: SUMMARY OF EXISTING ROADWAY CONDITIONS

STREET NAME	STREET NUMBER	FUNCITONAL CLASSIFICATION	NUMBER OF LANES	POSTED SPEED	MEDIAN	COMMENTS
US Highway 169	TH 169	Principal Arterial (1) Principal Arterial (2) Principal Arterial (3)	4	65 mph	Yes	Widens to a six-lane divided roadway east of CSAH 83
County Highway 83 (Canterbury Road)	CSAH 83	A Minor Expander (1) A Minor Arterial (2) A Minor Arterial (3)	4	45 mph	Yes	
Eagle Creek Boulevard	CSAH 16	Other Arterial (1) Local (2) B Minor Arterial (3)	4	50 mph	No	
Vierling Drive	-	Major Collector (1) Collector (3)	4	30 mph	No	

(1) Metropolitan Councils' Functional Classification Plan, (2) Scott County 2030 Comprehensive Plan, (3) City of Shakopee 2030 Comprehensive Plan

The following intersections exist near the development and are listed below with the existing traffic control.

- County Highway 83 & Barenscheer Boulevard (EB stop controlled)
- County Highway 83 & 12th Avenue E (Signalized)
- County Highway 83 & US Highway 169 WB Ramps (Signalized)
- County Highway 83 & US Highway 169 EB Ramps (Signalized)
- County Highway 83 & Eagle Creek Boulevard (Signalized)
- 12th Avenue E & Vierling Drive (NB Stop Controlled)
- Eagle Creek Boulevard & Vierling Drive (All-Way Stop Control)
- Eastway Avenue/Barenscheer Boulevard & Shenandoah Drive (Three-way Stop Control)

Provided in the **Appendix** is an exhibit that provides the existing intersection control and lane assignments of the study intersections (**Exhibit 1**).

2.4 EXISTING TRAFFIC VOLUMES

Average daily traffic (ADT) volumes were obtained from the MnDOT's *Transportation Data and Analysis Traffic Volume Maps*. Volumes for the existing roadways within the study area are summarized in **Table 2**.

TABLE 2: EXISTING ADT VOLUMES

ROADWAY	LOCATION	ADT VOLUME	
		2012/2013	2015
US Highway 169	East/West of CSAH 83	68,000 / 40,500	67,000 / --
County Highway 83	North / South of US 169	18,300 / 23,900	18,800 / 22,700
Eagle Creek Boulevard	East / West of Vierling Drive	9,600 / --	9,900 / 7,300
Vierling Drive	North / South of Eagle Creek Boulevard	3,050 / 3,350	3,350 / 4,100
12th Avenue E	West of Vierling Drive	3,050	3,050

Weekday turning movement counts were performed for the AM peak period (7:00 to 9:00 AM) and the PM peak period (4:00 to 6:00 PM) in May 2016 at the study intersections, except for the US Highway 169 & County Highway 83 interchange. Existing turning movement counts for the US Highway 169 interchange were taken from the County Highway 83 Corridor Readiness Study (Bolton & Menk, February 2016). Existing peak hour turning movement volumes are provided in **Appendix B** (**Exhibit 2**).

3.0 PROPOSED DEVELOPMENT

3.1 SITE LOCATION

The proposed development is located in the City of Shakopee, generally on the north side of Eagle Creek Boulevard, west of County Highway 83. It is located on the southwest quadrant of the existing Canterbury Park development. As part of this project, a joint-venture partnership has been established between Canterbury Park and Doran Companies.

3.1 PROPOSED DEVELOPMENT LAND USES

The overall development consists of a mix of residential, and retail. **Table 3** provides a summary of the land uses that were assumed in the analysis.

TABLE 3: LAND USES

AREA	LAND USE	SIZE
North Townhomes (Phase 2)	Multi-family Residential (Attached)	60 Units
Apartments (Phase 1/Phase 2)	Multi-family Residential (Attached)	700 Units
South Townhomes	Multi-family Residential (Attached)	96 Units
West Commercial (Phase 2)	Commercial Retail	16,000 SF
	Restaurant	16,000 SF
East Commercial (Phase 2)	Hotel	120 Rooms
	Restaurant	15,000 SF
	Commercial Retail	47,000 SF

The development is anticipated to be developed in two phases; Phase 1 will include 350 multi-family dwelling units (apartments) and expected to be completed by 2020, while the remaining development, including an additional 350 apartment dwelling units, will be part of Phase 2 that is expected to be completed by 2025. A site plan showing the location of the uses in relation to the street network is provided in **Appendix A**.

3.2 SITE TRAFFIC FORECASTS

The Institute of Transportation Engineers' (ITE) *Trip Generation*, 9th Edition was used to calculate the trip generation potential for the development. The manual provides daily and peak hour trips rates and inbound-outbound percentages which were then used to estimate the number of daily and peak hour trips that can be attributed to the development.

For this traffic analysis, the following land uses were used: LUC 220 (Apartments, LUC 230 (Residential Townhome), LUC 310 (Hotel), LUC 820 (Shopping Center), and LUC 932 (High-Turnover Sit-Down Restaurant).

Trip reductions were considered as part of the Full-Build trip generation calculation to account for internal capture and pass-by traffic for the development.

- *Internal Capture* – Represents traffic that is generated by the proposed development that will make a stop at another land use with the development, therefore never entering the external roadway network. These trips are reduced from the base trip generation potential to determine the total number of driveway trips the proposed development will generate. In this case, internal capture trips will travel along Shenandoah Drive, but are still considered to be "internal" for the purposes of this traffic analysis.

- *Pass-By* – Reflects the travel patterns of motorists who are already traveling on the adjacent study roadways (Eagle Creek Boulevard) and stop at the site in route to another primary destination. Based on ITE's *Trip Generation Handbook*, pass-by reduction can be applied to General Commercial (0% during the AM peak and 34% during the PM peak) and Restaurants (0% during the AM peak and 43% during the PM peak). If the pass-by capture as calculated by ITE exceeds 10% of the adjacent street traffic, the adjacent street traffic will be the limiting factor.

Internal capture trips were assigned to the site driveways and along Shenandoah Drive. For example, internal capture trips between the residential and commercial uses were assigned to their respective driveways. Internal capture between commercial uses was assumed to be contained within their part of the development, and did not access the adjacent roadway network.

Pass-By trips were assumed to access the site on the new site road from Eagle Creek Boulevard (north/south road between Shenandoah Drive and Eagle Creek Boulevard). The pass-by trips were assigned to the appropriate movements to access the site and return to Eagle Creek Boulevard. A 50/50 directional split along Eagle Creek Boulevard (50% to/from the west and 50% to/from the east) was assumed for pass-by trips.

Table 4 provides a summary of trip generation for Phase 1 of the proposed development. Based on the calculation, Phase 1 is anticipated to generate 2,328 daily trips, 179 trips during the AM peak hour, and 217 trips during the PM peak hour.

TABLE 4: PHASE 1 TRIP GENERATION SUMMARY

Land Use	ITE Land Use Code	Intensity	Trip Generation Values		
			Daily	AM Total (In/Out)	PM Total (In/Out)
Multi-Family (Apartments)	220	350 Dwelling Units	2,328	179 (36/143)	217 (141/76)
Total Net New Trips			**2,328**	**179 (36/143)**	**217 (141/76)**

Table 5 provides a summary of trip generation for full build-out of the proposed development. Based on the calculation, the Full-Build development is anticipated to generate 13,136 net new daily trips, 771 net new trips during the AM peak hour, and 632 net new trips during the PM peak hour.

TABLE 5: FULL-BUILD TRIP GENERATION SUMMARY

Land Use	ITE Land Use Code	Intensity	Trip Generation Values		
			Daily	AM Total (In/Out)	PM Total (In/Out)
Multi-Family (Apartments)	220	700 Dwelling Units	4,656	357 (71/286)	434 (282/152)
Multi-Family (Townhomes)	230	156 Dwelling Units	908	69 (12/57)	81 (54/27)
Hotel	310	120 Rooms	982	64 (38/26)	72 (37/35)
General Commercial	820	62,000 Square Feet	2,648	60 (37/23)	230 (110/120)
Restaurants	932	31,000 Square Feet	3,942	335 (184/151)	305 (183/122)
Total Site Generated Trips			**13,136**	**885 (342/543)**	**1,122 (666/456)**
Internal Capture Reduction			--	*114 (57/57)*	*410 (205/205)*
Total Driveway Trips			**13,136**	**771 (285/486)**	**712 (461/251)**
Pass-By Reduction			--	--	80 (40/40)
Total Net New Trips			**13,136**	**771 (285/486)**	**632 (421/211)**

3.3 SITE CIRCULATION

Primary access to the development will be provided along the Shenandoah Drive extension, which is a planned two-lane roadway that continues from its current terminus at Eastway Avenue/Barenscheer Boulevard to the intersection of Vierling Drive & 12th Avenue E. A north-south roadway will be constructed as part of the development that connects to Eagle Creek Parkway and Shenandoah Drive, approximately 1,300 feet (1/4 mile) west of Vierling Drive, and will also provide access to portions of the development.

Following provides a summary of proposed access to the individual land uses:

- *North Townhomes* – Full access connection to Shenandoah Drive with a roundabout (Driveway 2).
- *Apartments* – Full access connection to Shenandoah Drive with a roundabout (Driveway 1).
- *South Townhomes* – Full access connection to Shenandoah Drive with minor-street stop control (Driveway 3).
- *West Commercial* – Shared access with South Townhomes along Shenandoah Drive, and an additional full access connection to the proposed North-South roadway as minor-street stop control (Driveway 4).
- *East Commercial* – Full access connection to proposed North-South roadway as minor-street stop control and two full access connections to Shenandoah Drive as minor-street stop control (Driveway 4, Driveway 5, and Driveway 6).

There is planned to be a second connection to Eagle Creek Boulevard, approximately 900 feet west of the proposed North-South roadway and aligning with Hauer Trail; however, this will primarily operate as a secondary access for the proposed multi-family area and therefore was not considered a primary access for development traffic, and provide access to the undeveloped property to the west, thus eliminating a future access to Eagle Creek Boulevard to serve this property.

3.4 SITE TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of development traffic was based on existing traffic volumes, anticipated travel patterns of the proposed development, and discussion with City of Shakopee and Scott County staff. Since residential trips typically have longer trip lengths than commercial retail trips, a distribution was developed for residential and commercial trips separately. Following provides a summary of the trip distribution percentages for residential and commercial trips:

Residential Distribution

- US Highway 169 – 40% to/from the east and 5% to/from the west;
- County Highway 83 – 20% to/from the north and 5% to/from the south;
- Eagle Creek Boulevard – 10% to/from the west
- Vierling Drive – 10% to/from the south; and
- Shenandoah Drive – 10% to/from the north.

Commercial Distribution

- US Highway 169 – 25% to/from the east and 10% to/from the west;
- County Highway 83 – 5% to/from the north and 20% to/from the south;
- Eagle Creek Boulevard – 10% to/from the west
- Vierling Drive – 20% to/from the south; and
- Shenandoah Drive – 10% to/from the north.

Exhibits are provided in **Appendix B** that provide the directional distribution for the residential trips and commercial trips (**Exhibit 3** and **Exhibit 4**, respectively).

The site traffic assignment for the proposed site development, representing traffic volumes associated with the proposed development at the study area intersections is a function of the estimated trip generation and the directional distribution. Exhibits are provided in **Appendix B** that provide the trip assignment for Phase 1 and Full-Build of the development (**Exhibit 5** and **Exhibit 6**, respectively).

3.5 PARKING

Based on the conceptual site plan, there will be a total of 2,290 parking spaces provided for the entire mixed-use development. Following provides a breakdown of where the spaces will be allocated:

- North Townhomes – 150 parking spaces (2.5 spaces per unit)
- Multi-Family Apartments – 1,050 parking spaces (1.5 spaces per unit)
- South Townhomes – 240 parking spaces (2.5 spaces per unit)
- West Commercial – 250 parking spaces
- East Commercial – 600 parking spaces

4.0 TRAFFIC ANALYSIS

Based on MnDOT's Traffic Impact Study Guidance (Chapter 5 of the MnDOT Access Management Manual), analysis years should include Existing conditions and year of opening or five years after opening for most developments. Based on this guidance, the traffic analysis focused on Existing (2016) conditions, Phase 1 (2020) conditions, and Full-Build (2025) conditions. **Table 6** describes the scenarios analyzed, including the traffic volumes and roadway network used for each scenario.

TABLE 6: TRAFFIC ANALYSIS SCENARIOS

SCENARIO	TRAFFIC VOLUMES / ROADWAY NETWORK
Existing (2016)	Existing Traffic; Existing Network
Phase 1 Background (2020)	2020 Projected Background Traffic; Existing Network
Phase 1 Build (2020)	2020 Projected Background + Phase 1 Project Traffic; Existing + Shenandoah Drive Extension
Phase 1 Build (2020) With Mitigation	2020 Projected Background + Phase 1 Project Traffic; Existing + Shenandoah Drive Extension + Phase 1 Mitigation
Full-Build Background (2025)	2025 Projected Background Traffic; Existing + Shenandoah Drive Extension + Phase 1 Mitigation
Full-Build (2025)	2025 Projected Background Traffic + Full-Build Project Traffic; Existing + Shenandoah Drive Extension + Phase 1 Mitigation
Full-Build (2025) with Mitigation	2025 Projected Background Traffic + Full-Build Project Traffic; Existing + Shenandoah Drive Extension + Full-Build Mitigation

4.1 FUTURE VOLUME FORECASTING

Background traffic volumes for the Phase 1 Background (2020) and Full-Build Background (2025) were based on applying a background growth rate to the existing turning movement volumes. Based on historic Average Daily Traffic (ADT) information provided by MnDOT along County Highway 83 and Eagle Creek Boulevard and information provided in Scott County's Comprehensive Plan, a 2.0% annual growth rate was applied.

Exhibits are provided in **Appendix B** that provides the background traffic volumes for the AM and PM peak hours for Phase 1 and Full-Build conditions (**Exhibit 7** and **Exhibit 8**, respectively).

Exhibits are also provided in **Appendix B** that provide the Phase 1 Build and Full-Build traffic volumes for the AM and PM peak hours, with is a summation of the project traffic assignment and background traffic growth (**Exhibit 9** and **Exhibit 10**, respectively).

4.2 LEVEL OF SERVICE ANALYSIS

The following section summarizes the analysis of existing and future traffic conditions at the study intersections, as well as identifying any mitigation measures necessary to alleviate project impact on the surrounding transportation system.

Weekday AM and PM peak hour capacity analyses were completed for the scenarios listed in **Table 6**. The capacity of an intersection quantifies its ability to accommodate traffic volumes and is expressed in terms of level of service (LOS), measured in average delay per vehicle. LOS grades range from A to F, with LOS A as the highest (best traffic flow and least delay), LOS E as saturated or at-capacity conditions, and LOS F as the lowest (oversaturated conditions).

The LOS grades shown below, which are provided in the Transportation Research Board's *Highway Capacity Manual (HCM)*, quantify and categorize the driver's discomfort, frustration, fuel consumption, and travel times experienced because of intersection control and resulting traffic queueing. A detailed description of each LOS can be found in **Table 7**. The range of control delay for each rating (as detailed in the HCM) is shown in **Table 8**. Because signalized intersections are expected to carry a larger volume of vehicles and stopping is required during red time, higher delays are tolerated for the corresponding LOS ratings.

TABLE 7: LEVEL OF SERVICE GRADING DESCRIPTIONS

LEVEL OF SERVICE	DESCRIPTION
A	Minimal control delay; traffic operates at primarily free-flow conditions; unimpeded movement within traffic stream.
B	Minor control delay at signalized intersections; traffic operates at a fairly unimpeded level with slightly restricted movement within traffic stream.
C	Moderate control delay; movement within traffic stream more restricted that at LOS B; formation of queues contributes to lower average travel speeds.
D	Considerable control delay that may be substantially increased by small increases in flow; average travel speeds continue to decrease.
E	High control delay; average travel speed no more than 33 percent of free flow speed.
F	Extremely high control delay; extensive queueing and high volumes create exceedingly restricted traffic flow.

TABLE 8: LEVEL OF SERVICE GRADING CRITERIA

LEVEL OF SERVICE	AVERAGE CONTROL DELAY (SEC/VEH) AT:	
	UNSIGNALIZED INTERSECTIONS AND ROUNDABOUTS	SIGNALIZED INTERSECTIONS
A	0 – 10	0 – 10
B	> 10 - 15	> 10 – 20
C	> 15 - 25	> 20 - 35
D	> 25 – 35	> 35 – 55
E	> 35 - 50	> 55 – 80
F	> 50	> 80

For unsignalized intersections, LOS was reported for the stop-controlled movements and major street left-turn movement. LOS was also reported for major street through and right-turn movements; however it should be noted that they are assumed to experience zero delay. At all-way stop intersections and roundabouts, LOS for all individual movements are reported. The overall intersection LOS was reported for signalized intersections. SimTraffic and SIDRA reports are provided in **Appendix D**. Detailed LOS and delay information for all individual movements at unsignalized and signalized intersections are provided in tables located in **Appendix E**.

4.3 EXISTING CONDITIONS LEVEL OF SERVICE

The LOS for unsignalized intersections are shown in **Table 9** and LOS for signalized intersections are shown in **Table 10** for Existing Conditions. The analysis was based on existing intersection control and lane assignments. Existing peak hour factors and signal timings observed in the field were used in the capacity analysis. A volume exhibit is provided in **Appendix B (Exhibit 2)** that was used as a basis for the capacity analysis.

Based on the existing conditions analysis for unsignalized intersections, all the stop-controlled movements at the unsignalized study intersections are operating at an acceptable level of service (LOS D or better) for both the AM and PM peak hours. All signalized intersections are operating at an acceptable level of service C or better for the weekday AM and PM peak hours except CSAH 83 and Eagle Creek Boulevard that is operating at LOS E.

TABLE 9: EXISTING (2016) LOS SUMMARY (UNSIGNALIZED)

Intersection	Analysis Period	EB			WB			NB			SB		
		L	T	R	L	T	R	L	T	R	L	T	R
County Highway 83 & Barenscheer Boulevard	AM	B		A				A	A			A	A
	PM	B		A				A	A			A	A
12th Avenue E & Vierling Drive	AM		A	A	A	A		A		A			
	PM		A	A	A	A		A		A			
Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard	AM	A	A			A	A				A		A
	PM	A	A			A	A				A		A
Eagle Creek Boulevard & Vierling Drive	AM	A	A	A	A	A	A	A	A	A	A	A	A
	PM	A	A	A	B	A	A	A	A	A	A	A	A

(1) Darkened boxes = movement not available

TABLE 10: EXISTING (2016) LOS SUMMARY (SIGNALIZED)

Intersection	Analysis Period	
	AM Peak Hour	PM Peak Hour
County Highway 83 & 12th Avenue E	B	C
County Highway 83 & US Highway 169 Ramps (WB)	C	C
County Highway 83 & US Highway 169 Ramps (EB)	B	B
County Highway 83 & Eagle Creek Boulevard	E	C

4.4 PHASE 1 BACKGROUND (2020) LEVEL OF SERVICE

The Phase 1 Background (2020) level of service analysis was based on existing lane use assignments and intersection control, and used the same peak hour factors and signal timings as Existing conditions. A volume exhibit is provided in **Appendix E (Exhibit 7)** that was used as a basis for the capacity analysis.

The Phase 1 Background (2020) and subsequent scenarios included improvements identified in the County Highway 83 Corridor Readiness Study (Bolton & Menk, 2016). Specifically, the analyses included a second westbound left-turn lane at the intersection of County Highway 83 & 12th Avenue E.

A summary of LOS results for the Phase 1 Background (2020) intersection analysis is shown in **Table 11** for the unsignalized intersections and **Table 12** for the signalized intersections. Based on the analysis, the study intersections are anticipated to operate similarly as Existing conditions. With the addition of background growth, the intersection of County Highway 83 & Eagle Creek Boulevard degrades to LOS F during the AM peak hour. All other stop-controlled movements and signalized intersections are anticipated to operate at LOS D or better for the AM and PM peak hours.

TABLE 11: PHASE 1 BACKGROUND (2020) LOS SUMMARY (UNSIGNALIZED)

Intersection	Analysis Period	EB			WB			NB			SB		
		L	T	R	L	T	R	L	T	R	L	T	R
County Highway 83 & Barenscheer Boulevard	AM	B		A				A	A			A	A
	PM	A		A				A	A			A	A
12th Avenue E & Vierling Drive	AM		A	A	A	A		A		A			
	PM		A	A	A	A		A		A			
Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard	AM	A	B			A	A				A		A
	PM	A	A			A	A				A		A
Eagle Creek Boulevard & Vierling Drive	AM	A	A	A	A	A	A	A	A	A	A	A	A
	PM	A	A	A	B	B	A	A	A	A	A	A	A

(1) Darkened boxes = movement not available

TABLE 12: PHASE 1 BACKGROUND (2020) LOS SUMMARY (SIGNALIZED)

Intersection	Analysis Period	
	AM Peak Hour	PM Peak Hour
County Highway 83 & 12th Avenue E	B	C
County Highway 83 & US Highway 169 Ramps (WB)	C	C
County Highway 83 & US Highway 169 Ramps (EB)	B	B
County Highway 83 & Eagle Creek Boulevard	F	C

4.5 PHASE 1 BUILD (2020) LEVEL OF SERVICE

The Phase 1 Build (2020) level of service analysis was based on existing lane use assignments and intersection control, and used the same peak hour factors and signal timings as Existing conditions. A volume exhibit is provided in **Appendix E (Exhibit 9)** that was used as a basis for the capacity analysis. Sidra analysis was used for the proposed roundabouts.

A summary of LOS results for the Phase 1 Build (2020) intersection analysis is shown in **Table 13** for the unsignalized intersections and **Table 14** for the signalized intersections. Similar to Phase 1 Background (2020) conditions, the study intersections are anticipated to operate at similarly LOS for the AM and PM peak hours. The intersection of County Highway 83 & Eagle Creek Boulevard is anticipated to operate at LOS F during the AM peak hour.

TABLE 13: PHASE 1 BUILD (2020) LOS SUMMARY (UNSIGNALIZED)

Intersection	Analysis Period	EB			WB			NB			SB		
		L	T	R	L	T	R	L	T	R	L	T	R
PUBLIC ACCESS INTERSECTIONS													
County Highway 83 & Barenscheer Boulevard	AM	B		A				A	A			A	A
	PM												
12th Avenue E & Vierling Drive	AM		A	A	A	A		A		A			
	PM												
Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard	AM	A	A	A	A	A	A	A	A	A	A	A	A
	PM	A	A	A	A	A	A	A	A	A	A	A	A
Eagle Creek Boulevard & Vierling Drive	AM	A	A	A	A	A	A	A	A	A	A	A	A
	PM	A	A	A	A	A	A	A	A	A	A	A	A
Shenandoah Drive & Proposed North/South Road	AM		A	A	A	A		A		A			
	PM												
Eagle Creek Boulevard & Proposed North/South Road	AM	B	A			A	A				A		A
	PM	A	A			A	A				B		A
SITE DRIVEWAYS													
Shenandoah Drive & Driveway 1 (Apartment Complex Access)	AM	A		A				A	A			A	A
	PM	A		A				A	A			A	A

(1) Darkened boxes = movement not available

TABLE 14: PHASE 1 BUILD (2020) LOS SUMMARY (SIGNALIZED)

Intersection	Analysis Period	
	AM Peak Hour	PM Peak Hour
County Highway 83 & 12th Avenue E	B	C
County Highway 83 & US Highway 169 Ramps (WB)	C	C
County Highway 83 & US Highway 169 Ramps (EB)	B	B
County Highway 83 & Eagle Creek Boulevard	F	C

4.6 PHASE 1 BUILD (2020) WITH MITIGATION LEVEL OF SERVICE

Based on the Phase 1 Background (2020) and Phase 1 Build (2020) analyses, the intersection of County Highway 83 & Eagle Creek Boulevard is anticipated to operate at LOS F during the AM peak hour. Based on MnDOT's Traffic Impact Study Guidance (Chapter 5 of the MnDOT Access Management Manual), mitigation measures should be identified for intersections that are anticipated to operate at LOS E or LOS F, and these measures should minimize further degradation of the intersection.

During the AM, peak hour, there is a heavy northbound through movement at the intersection of County Highway 83 & Eagle Creek with the ultimate destination of travelling east on US Highway 169. The northbound approach currently consists of two through lanes; however, the majority of traffic is using the outside through lane because of the short distance past the intersection to get on to US Highway 169. Following provides mitigation measures that are anticipated to alleviate some of the congestion on the northbound approach during the AM peak hour:

- *County Highway 83 & US 169 (Eastbound)* – Extend the inside northbound right-turn lane to Eagle Creek Boulevard to provide a full-length lane between the two intersections.

- *County Highway 83 & Eagle Creek Boulevard* – Convert the existing northbound right-turn lane to a shared through-right lane and construct a new dedicated northbound right-turn lane.

These improvements were incorporated into the capacity analysis and **Table 15** provides a summary of the results during the AM and PM peak hours. Based on the analysis the intersection of County Highway 83 & Eagle Creek Boulevard is anticipated to improve from LOS F to LOS C during the AM peak hour. The intersection is anticipated to continue to operate at LOS C with the improvements. It should be noted that these mitigation measures are necessary even without of the addition of the proposed development traffic.

TABLE 15: PHASE 1 BUILD (2020) WITH MITIGATION LOS SUMMARY (SIGNALIZED)

Intersection	Analysis Period	
	AM Peak Hour	PM Peak Hour
County Highway 83 & Eagle Creek Boulevard	C	C

4.7 FULL-BUILD BACKGROUND (2025) LEVEL OF SERVICE

The AM and PM peak hours of traffic were analyzed under Full-Build Background (2025) conditions. This includes existing traffic grown at 2% per year for eight years. Synchro 9 output reports are attached. The analysis was performed with existing signal operations. Mitigation measures identified at the intersections of County Highway 83 & US Highway 169 (WB) and County Highway 83 & Eagle Creek Boulevard were included in the Full-Build Background (2025) analysis. A volume exhibit is provided in **Appendix E (Exhibit 8)** that was used as a basis for the capacity analysis.

A summary of the intersection delay and LOS results for the Full-Build Background (2025) intersection analyses are shown in **Table 16** for the unsignalized intersections and **Table 17** for the signalized intersections. Based on the analysis, all stop-controlled movements and signalized intersection are anticipated to operate at an acceptable LOS.

TABLE 16: FULL-BUILD BACKGROUND (2025) LOS SUMMARY (UNSIGNALIZED)

Intersection	Analysis Period	EB			WB			NB			SB		
		L	T	R	L	T	R	L	T	R	L	T	R
County Highway 83 & Barenscheer Boulevard	AM	B		A				A	A			A	A
	PM	A		A				A	A			A	A
12th Avenue E & Vierling Drive	AM		A	A	A	A		A		A			
	PM		A	A	A	A		B		A			
Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard	AM	A	A			A	A				A		A
	PM	A	A			A	A				A		A
Eagle Creek Boulevard & Vierling Drive	AM	A	A	A	A	A	B	A	A	A	A	A	A
	PM	A	B	A	B	B	B	A	A	A	A	A	A

(1) Darkened boxes = movement not available

TABLE 17: FULL-BUILD BACKGROUND (2025) LOS SUMMARY (SIGNALIZED)

Intersection	Analysis Period	
	AM Peak Hour	PM Peak Hour
County Highway 83 & 12th Avenue E	B	C
County Highway 83 & US Highway 169 Ramps (WB)	D	C
County Highway 83 & US Highway 169 Ramps (EB)	C	B
County Highway 83 & Eagle Creek Boulevard	C	C

4.8 FULL-BUILD (2025) LEVEL OF SERVICE

Similar to Full-Build Background (2025) conditions, the mitigation measures from the 2020 analysis year were included in the Full-Build (2025) analysis. A volume exhibit is provided in **Appendix E (Exhibit 10)** that was used as a basis for the capacity analysis.

A summary of the intersection delay and LOS results for the Full-Build (2025) intersection analyses are shown in **Table 18** for the unsignalized intersections and **Table 19** for the signalized intersections. Based on the analysis, all stop-controlled movements and signalized intersection are anticipated to operate at an acceptable LOS, except for County Highway 83 & US Highway 169 (WB) and County Highway 83 & Eagle Creek Boulevard, where both intersections are anticipated to operate at LOS E during the AM peak hour.

TABLE 18: FULL-BUILD (2025) LOS SUMMARY (UNSIGNALIZED)

Intersection	Analysis Period	EB			WB			NB			SB		
		L	T	R	L	T	R	L	T	R	L	T	R
PUBLIC ACCESS INTERSECTIONS													
County Highway 83 & Barenscheer Boulevard	AM	B		A				A	A			A	A
	PM	B		A				A	A			A	A
12th Avenue E & Vierling Drive	AM		A	A	A	A		A		A			
	PM		A	A	A	A		A		A			
Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard	AM	A	A	A	A	A	A	A	A	A	A	A	A
	PM	A	A	A	A	A	A	A	A	A	A	A	A
Eagle Creek Boulevard & Vierling Drive	AM	A	A	A	A	A	A	A	A	A	A	A	A
	PM	A	A	A	A	A	A	A	A	A	A	A	A
Shenandoah Drive & Proposed North/South Road	AM		A	A	A	A		A		A			
	PM		A	A	A	A		A		A			
Eagle Creek Boulevard & Proposed North/South Road	AM	B	A			A	A				A		A
	PM	A	A			A	A				B		A
SITE DRIVEWAYS													
Shenandoah Drive & Driveway 1 (Apartment Complex Access)	AM	A		A				A	A			A	A
	PM	A		A				A	A			A	A
Shenandoah Drive & Driveway 2 (North Townhomes Access)	AM	A	A	A	A	A	A	A	A	A	A	A	A
	PM	A	A	A	A	A	A	A	A	A	A	A	A
Shenandoah Drive & Driveway 3 (South Townhomes Access)	AM	A		A				A	A			A	A
	PM	B		A				A	A			A	A
Proposed North/South Road & Driveway 4 (Retail Access)	AM	A	A	A	A	A	A	A	A	A	A	A	A
	PM	A	A	A	A	A	A	A	A	A	A	A	A
Shenandoah Drive & Driveway 5 (West Retail Access)	AM		A	A	A	A		A		A			
	PM		A	A	A	A		A		A			
Shenandoah Drive & Driveway 6 (East Retail Access)	AM		A	A	A	A		A		A			
	PM		A	A	A	A		A		A			

(1) Darkened boxes = movement not available

TABLE 19: FULL-BUILD (2025) LOS SUMMARY (SIGNALIZED)

Intersection	Analysis Period	
	AM Peak Hour	PM Peak Hour
County Highway 83 & 12th Avenue E	B	D
County Highway 83 & US Highway 169 Ramps (WB)	E	D
County Highway 83 & US Highway 169 Ramps (EB)	C	B
County Highway 83 & Eagle Creek Boulevard	D	C

4.9 FULL-BUILD (2025) WITH MITIGATION LEVEL OF SERVICE

Based on the Full-Build (2025) analysis, the intersections of County Highway 83 & US Highway 169 (WB) and County Highway 83 & Eagle Creek Boulevard are anticipated to operate at LOS E during the AM peak hour. Based on MnDOT's Traffic Impact Study Guidance (Chapter 5 of the MnDOT Access Management Manual), mitigation measures should be identified for intersections that are anticipated to operate at LOS E or LOS F, and these measures should minimize further degradation of the intersection.

Following provides mitigation measures that are anticipated to improve the overall operations of the intersection:

- *County Highway 83 & US Highway 169 (WB)* – Restripe the middle westbound off-ramp lane to a shared left-turn and right-turn lane. Alternatively, consider implementing signing and striping modification to provide variable lane assignments for the westbound off-ramp due to the significant split in north-south turning traffic during the AM and PM peak hours. During the AM peak hour, provide for dual westbound right-turn lanes (switching the middle off-ramp lane from a left-turn lane to right-turn lane), and provide for dual westbound left-turn lanes the remaining times of the day.

- *County Highway 83 & Eagle Creek* Boulevard – Extend the eastbound left-turn lane to provide a total of 350 feet of storage.

- *County Highway 83* Corridor – Evaluate and Optimize traffic signal timings from 12th Avenue E to Eagle Creek Boulevard.

These improvements were incorporated into the capacity analysis and **Table 20** provides a summary of the results during the AM and PM peak hours. Based on the analysis the intersections are anticipated to improve from LOS E to LOS C during the AM peak hour.

TABLE 20: FULL-BUILD (2025) WITH MITIGATION LOS SUMMARY (SIGNALIZED)

Intersection	Analysis Period	
	AM Peak Hour	PM Peak Hour
County Highway 83 & US Highway 169 (WB)	C	C
County Highway 83 & Eagle Creek Boulevard	C	C

4.10 QUEUE ANALYSIS

The anticipated 95th percentile queues were analyzed at the study intersections using SimTraffic simulation and using Sidra analysis for the proposed roundabouts. The anticipated queues were analyzed for all seven scenarios. A summary of the anticipated queue for all the study intersections is provided in the **Appendix**.

Following provides a summary of the analysis, identifying areas where the anticipated queue exceeds the provided storage for movements that serve proposed development traffic:

- CSAH 83 & US Highway 169 (EB) –The southbound left-turn lane queue is anticipated to exceed the existing provided storage (200 feet) in Existing (2017) and Full-Build (2025) scenario.
    - Due to variability in traffic volumes, and the fact that this turn lane cannot be extended without impacting the northbound left-turn lane at CSAH 83 & US Highway 169 (WB), no mitigation is recommended. However, queueing should be monitored for this movement into the future.
- CSAH 83 & US Highway 169 (WB) –The westbound approach queue is anticipated to exceed the provided storage (400 feet) beginning in the 2020 analysis year and continue through the 2025 analysis.
    - With the recommended mitigation to change the middle lane to a shared left and right turn lane, the queueing issue is expected to be resolved, as shown in the mitigation SimTraffic analysis.
- CSAH 83 & Eagle Creek Boulevard – The eastbound left-turn queue is anticipated to exceed the provided storage in the 2020 and 2025 analysis years. Additionally, the eastbound right-turn queue is anticipated to exceed the provided storage in the 2025 analysis year.
    - It is recommended that both turn lane be extended to provide 350 feet of storage.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The preceding report provides documentation of the traffic analysis performed as part of ta Environmental Assessment Worksheet (EAW) that is being completed for the proposed Canterbury Commons mixed-used development located in the City of Shakopee, Scott County, Minnesota. The development proposes to include multi-family residential, hotel, and commercial retail/restaurants uses on the southwest quadrant of the existing Canterbury Park development.

The proposed mixed-use development includes 700 multi-family dwelling units (apartments), 156 townhomes, 120 room hotel, 62,000 square feet of general commercial, and 31,000 square feet of restaurant space. The overall development is anticipated to generate 13,136 daily trips, 771 net new trips during the AM peak hour, and 632 net new trips during the PM peak hour at its full build-out in 2025. As part of the development, Shenandoah Drive is planned to be extended from its current terminus at Eastway Avenue/Barenscheer Boulevard to the intersection of Vierling Drive & 12th Avenue E as a two-lane divided roadway.

Based on the traffic analysis of the surrounding transportation system, the following mitigation measures should be in place to ensure acceptable level of service at the study intersections at the completion of the proposed development:

Phase 1 (2020)

- *County Highway 83 & US 169 (EB)* – Extend the inside northbound right-turn lane to Eagle Creek Boulevard to provide a full-length lane between the two intersections.

- *County Highway 83 & Eagle Creek Boulevard* – Convert the existing northbound right-turn lane to a shared through-right lane and construct a new dedicated northbound right-turn lane.

Full-Build (2025)

- *County Highway 83 & US Highway 169 (WB)* – Restripe the middle westbound off-ramp lane to a shared left-turn and right-turn lane.

- *County Highway 83 & Eagle Creek Boulevard* – Extend the eastbound left-turn and right-turn lanes to provide a total of 350 feet of storage.

- *County Highway 83* Corridor – Evaluate and optimize traffic signal timings from 12th Avenue E to Eagle Creek Boulevard.

.

APPENDICES

APPENDIX A: CONCEPTUAL SITE PLAN

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APPENDIX D: SIMTRAFFIC REPORTS & SIDRA ANALYSIS RESULTS

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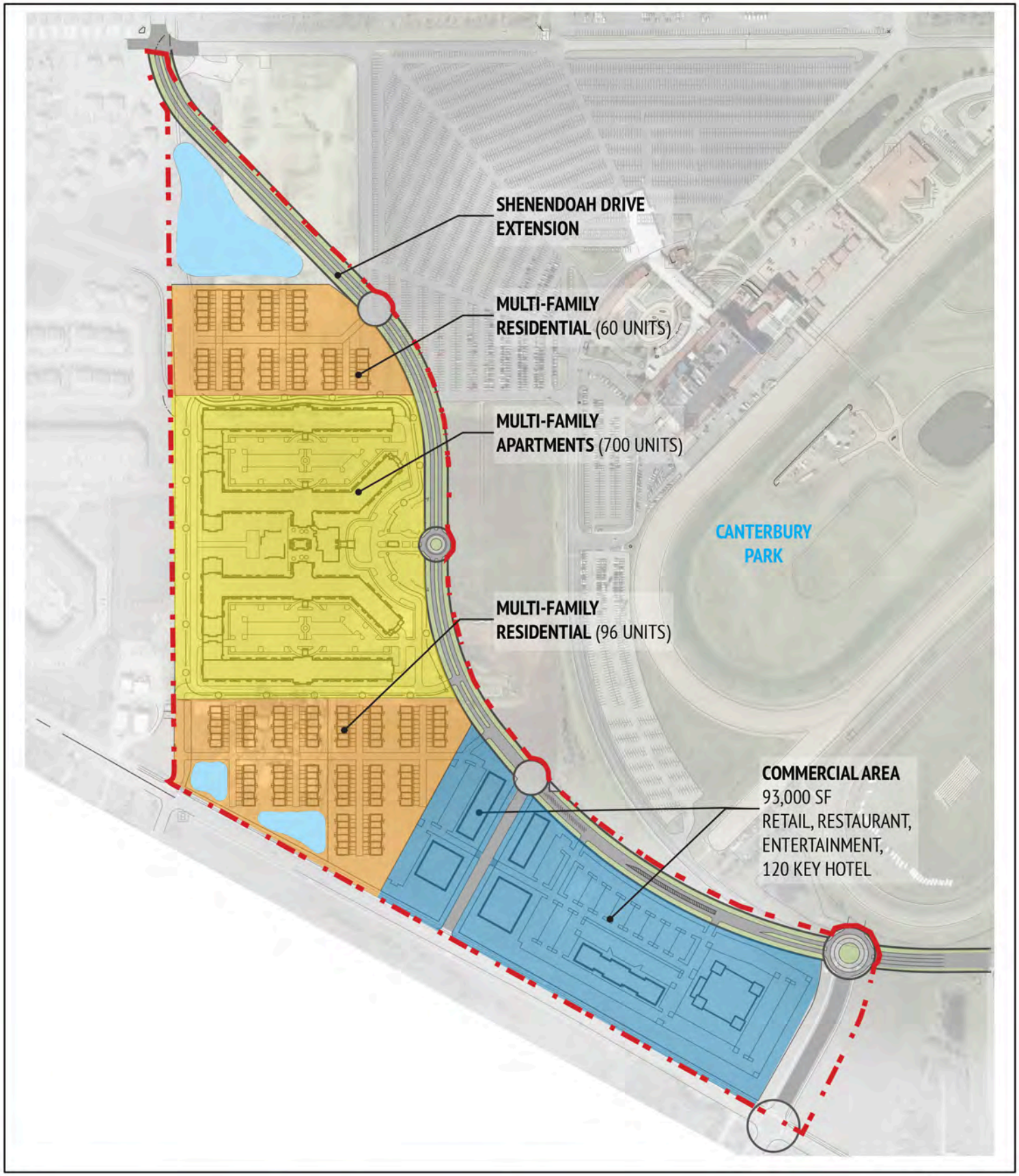
Appendix A:
Conceptual Site Plan



CONCEPT PLAN
Canterbury Commons
Shakopee, MN

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FIGURE 3

Appendix B:
Exhibits

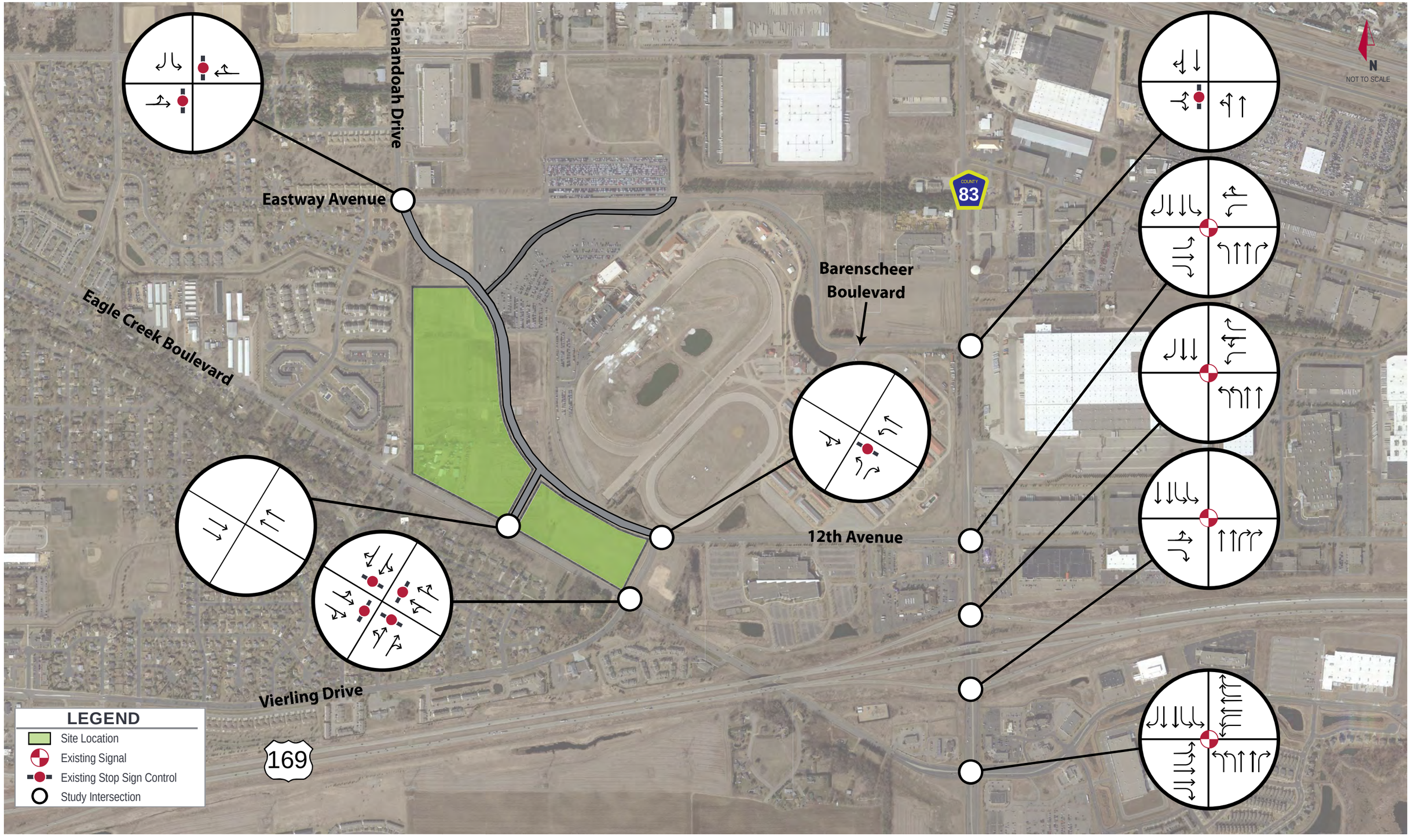

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EXHIBIT 1

EXISTING INTERSECTION CONTROL AND LANE ASSIGNMENT

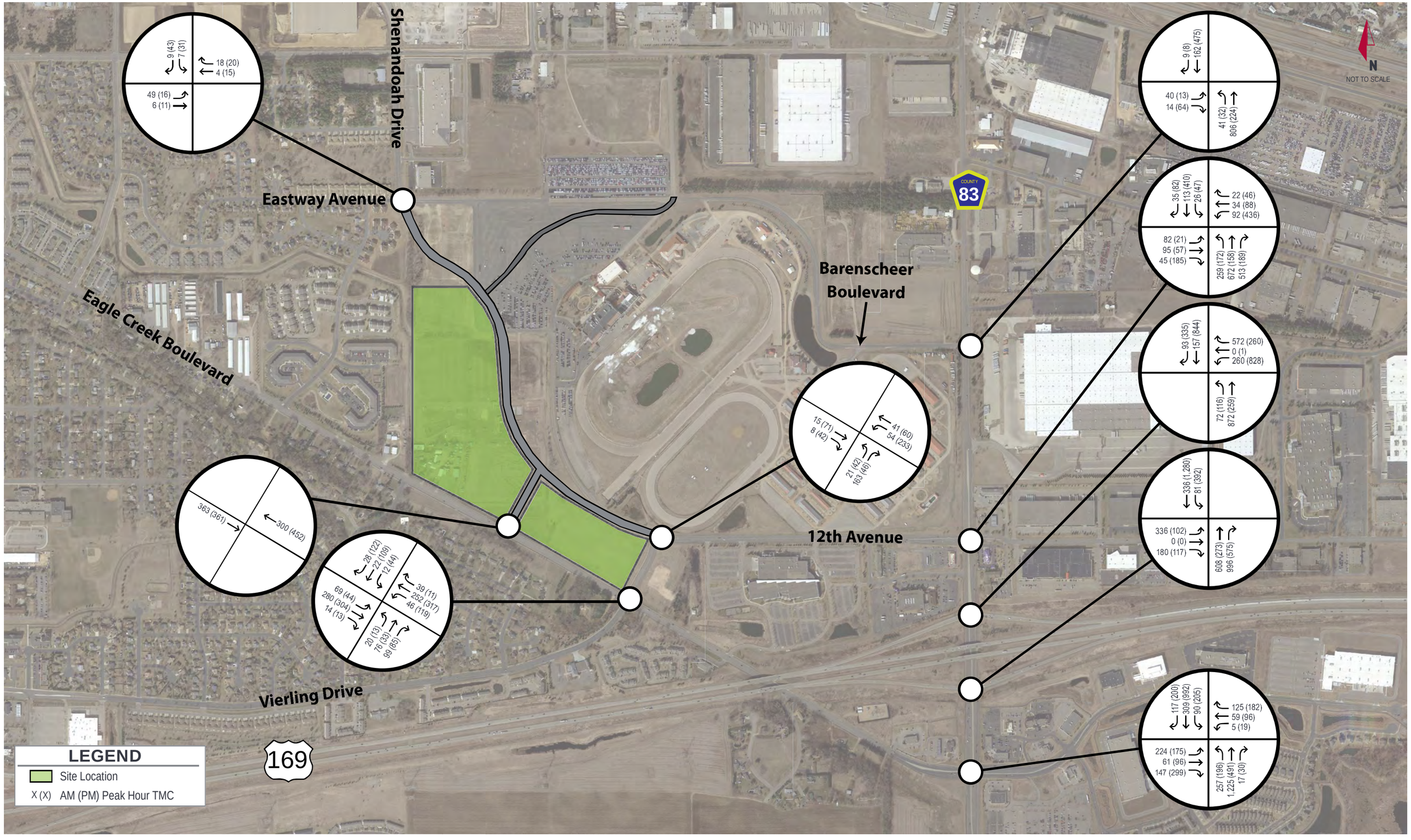

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EXHIBIT 2

EXISTING TURNING MOVEMENT COUNTS

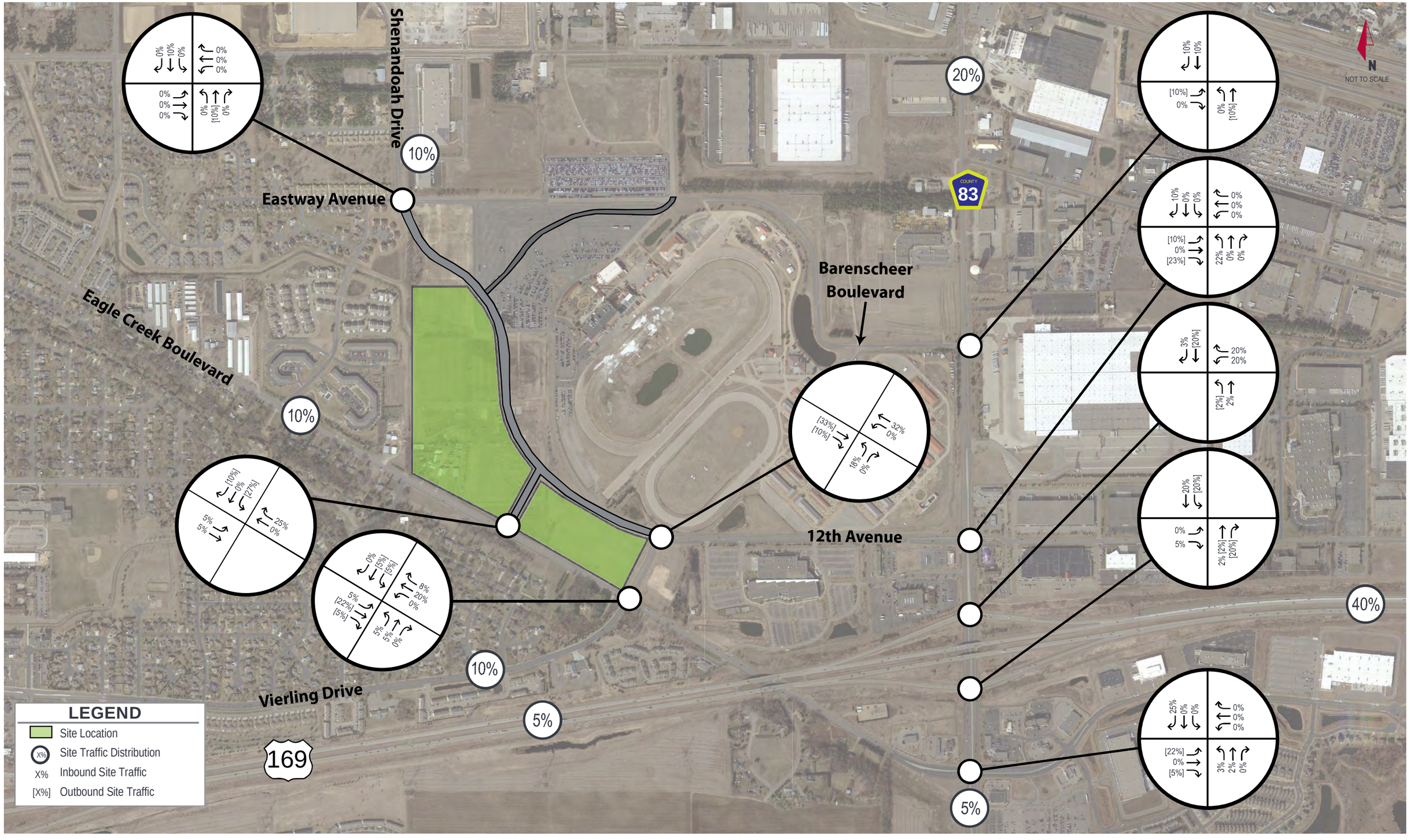

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EXHIBIT 3

RESIDENTIAL SITE TRAFFIC DISTRIBUTION

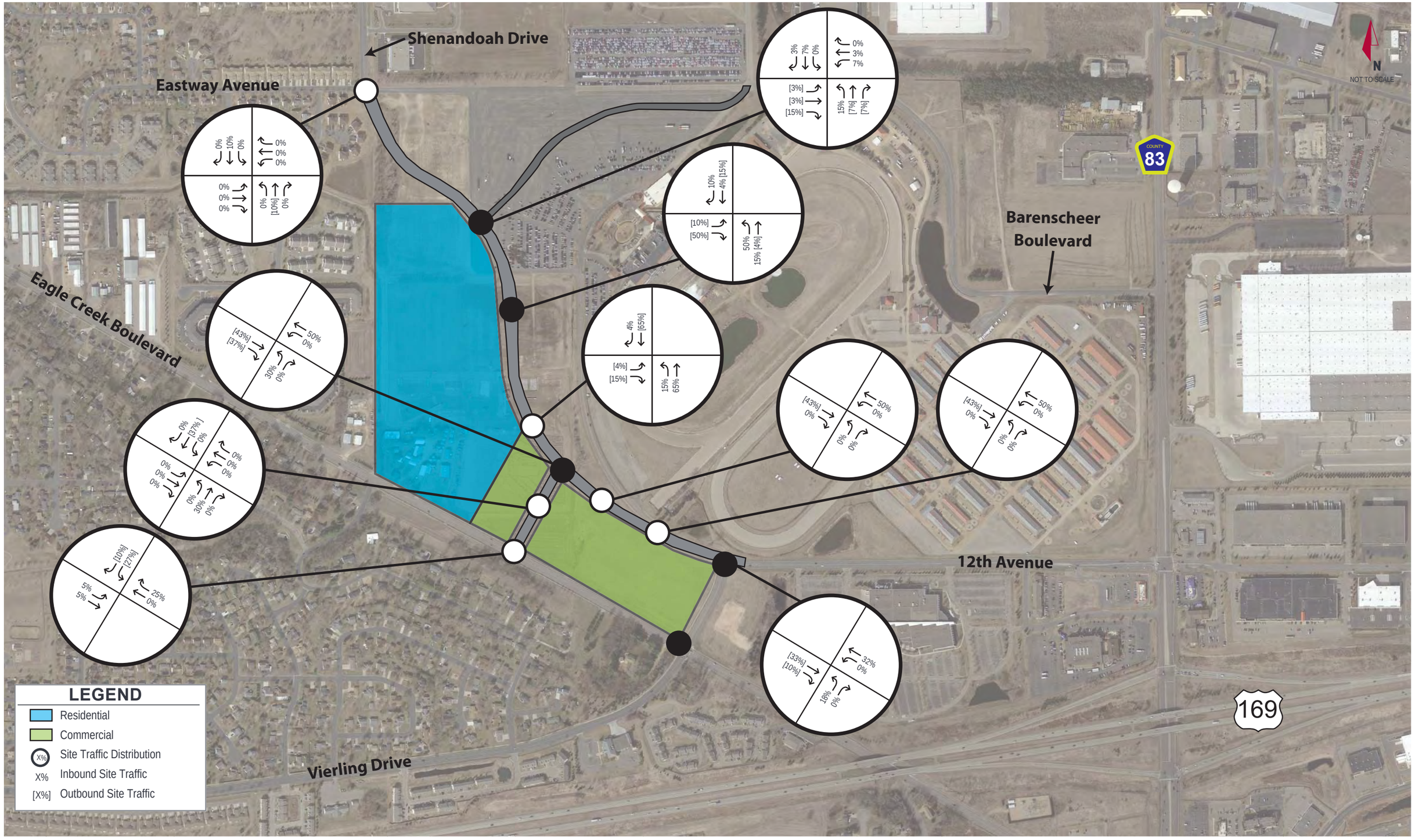

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EXHIBIT 4

DETAILED RESIDENTIAL SITE TRAFFIC DISTRIBUTION

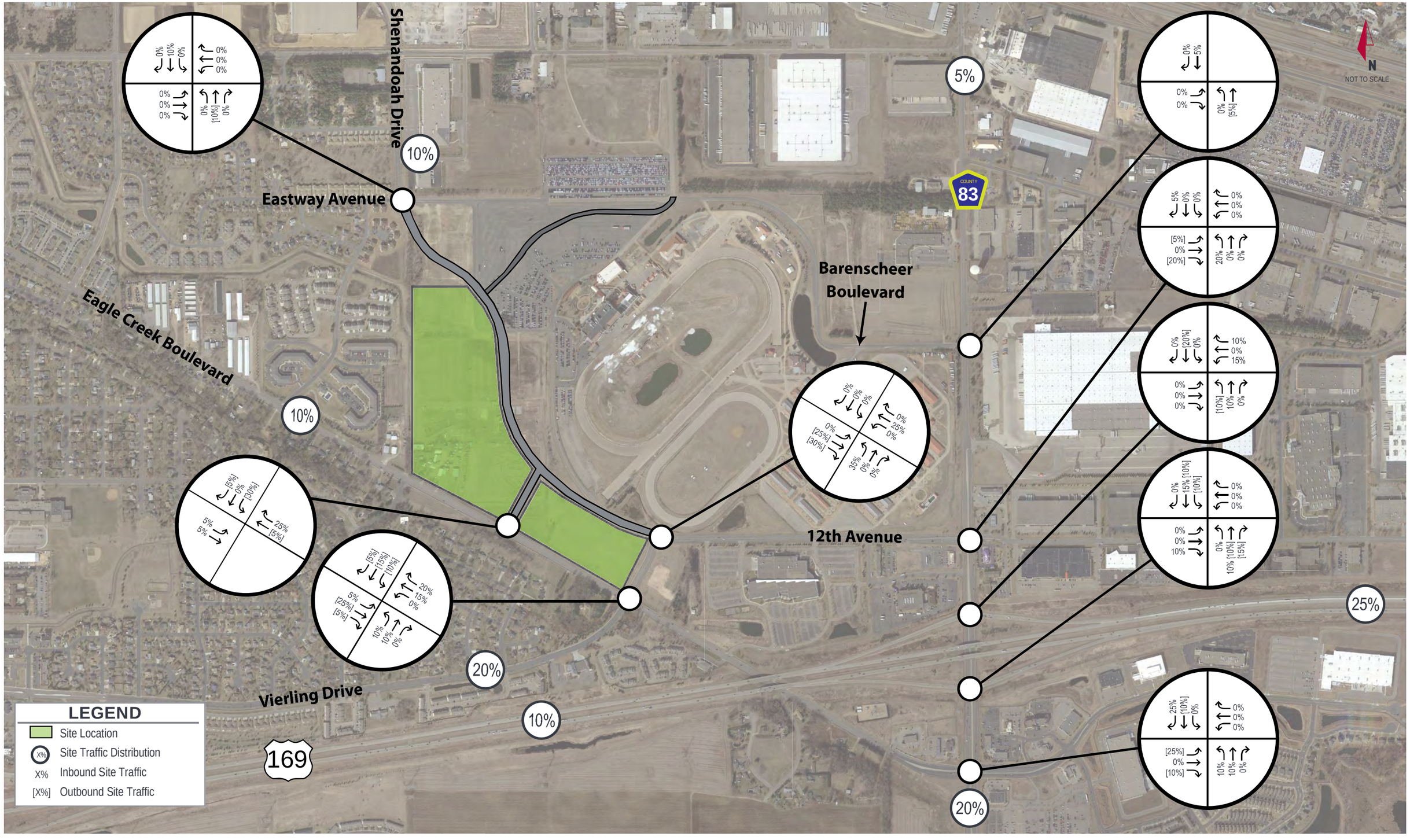

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EXHIBIT 5

COMMERCIAL SITE TRAFFIC DISTRIBUTION

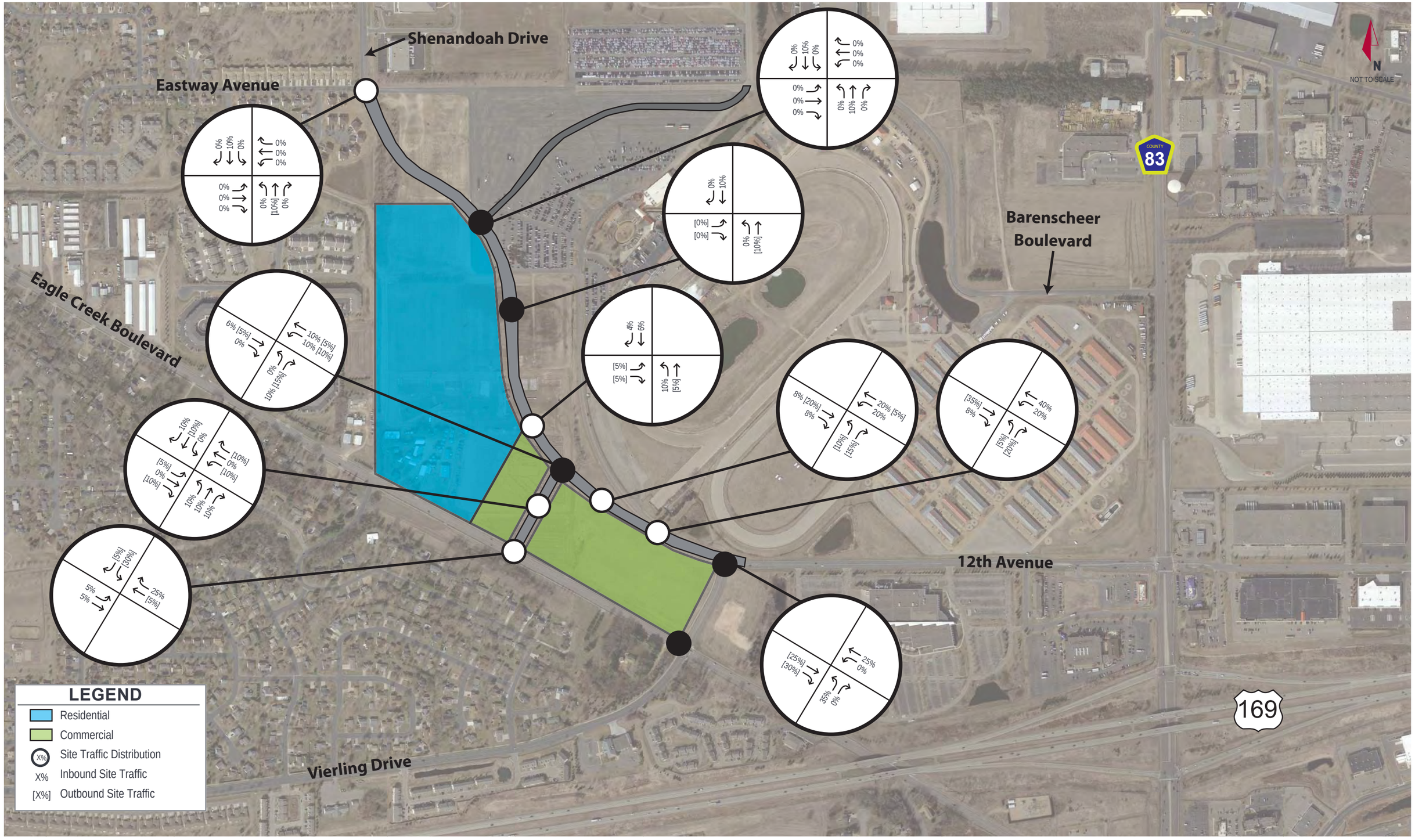

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EXHIBIT 6

DETAILED COMMERCIAL SITE TRAFFIC DISTRIBUTION

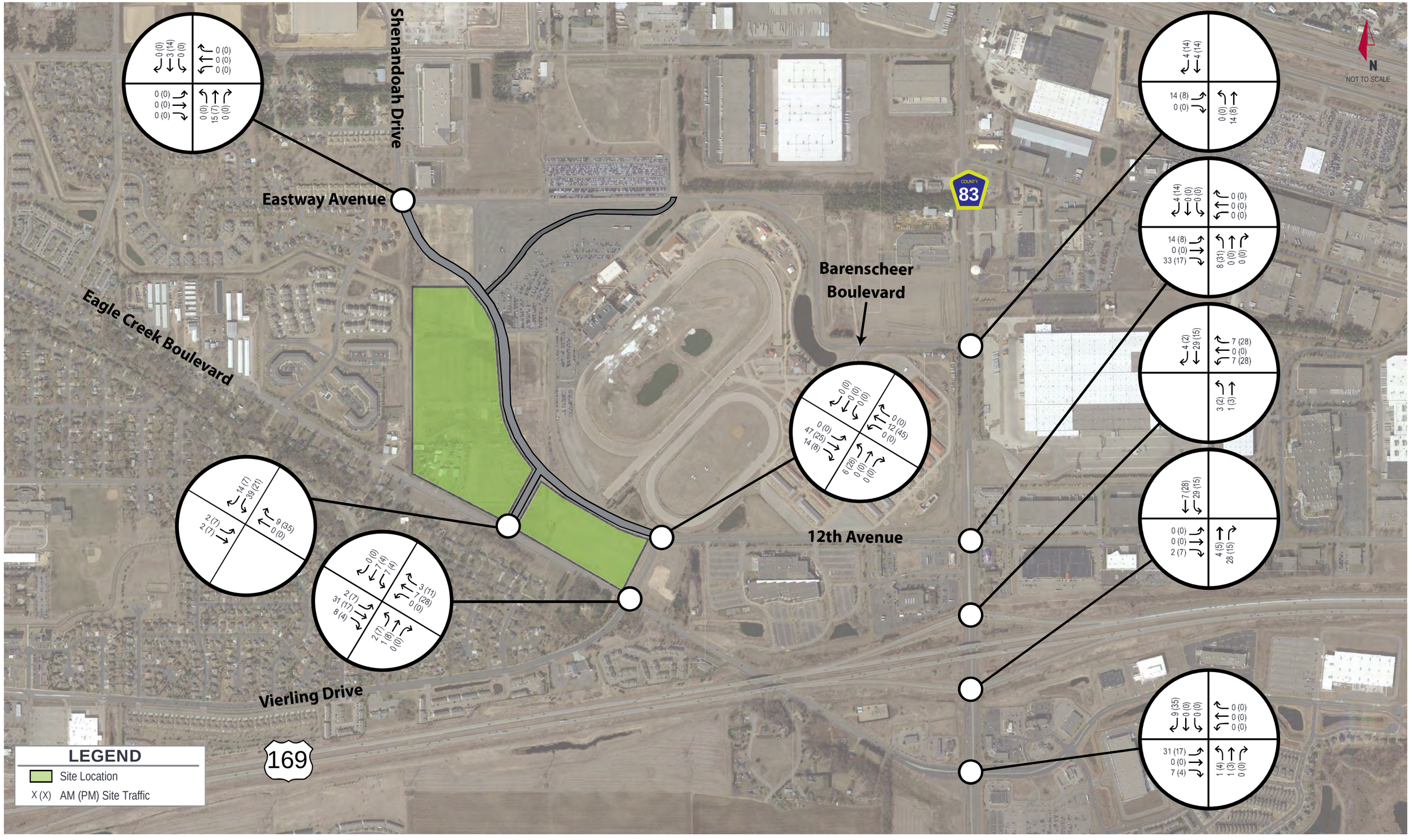

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EXHIBIT 7

PHASE 1 (2020) SITE TRAFFIC ASSIGNMENT

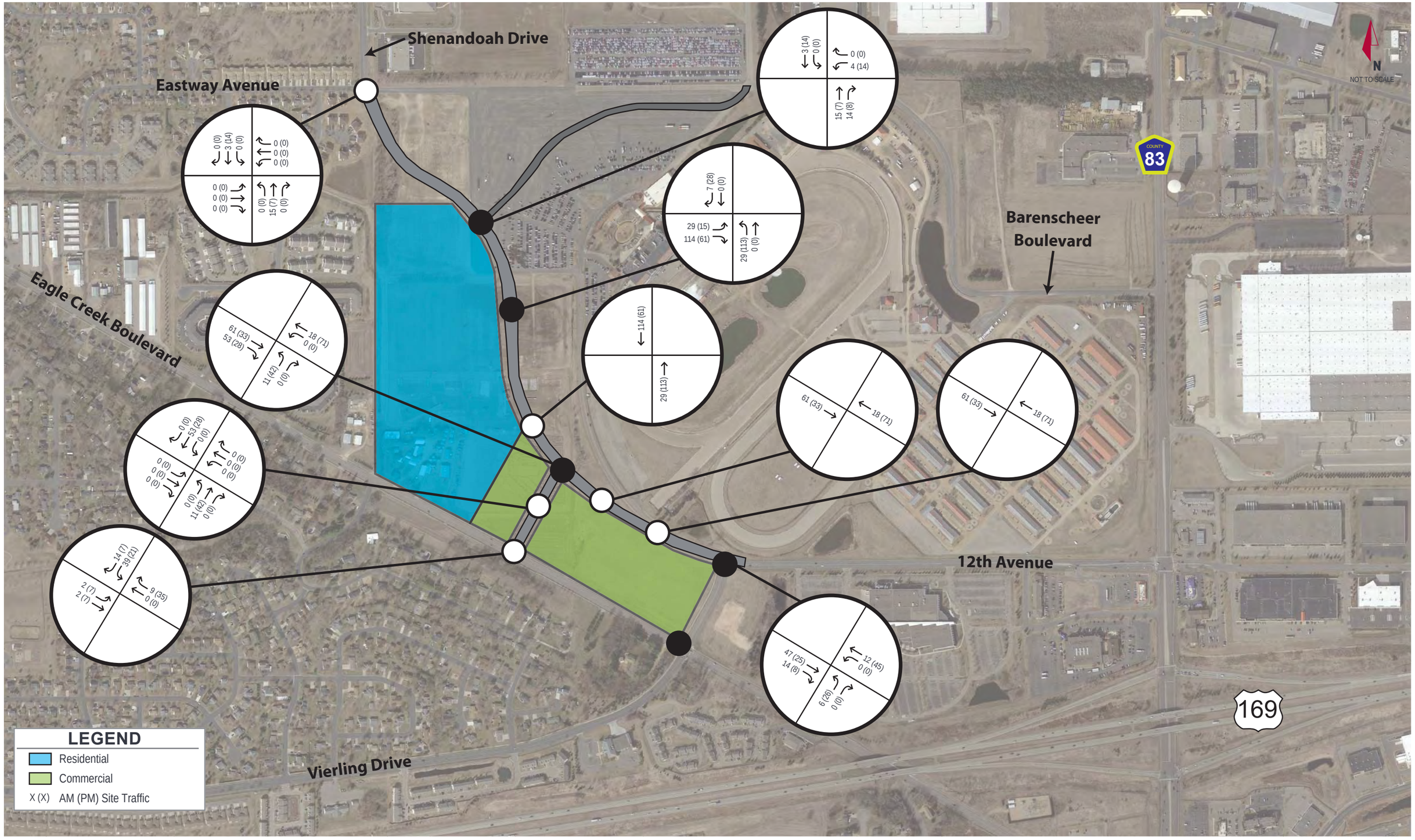

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EXHIBIT 8

PHASE 1 (2020) SITE DRIVEWAY TRAFFIC ASSIGNMENT

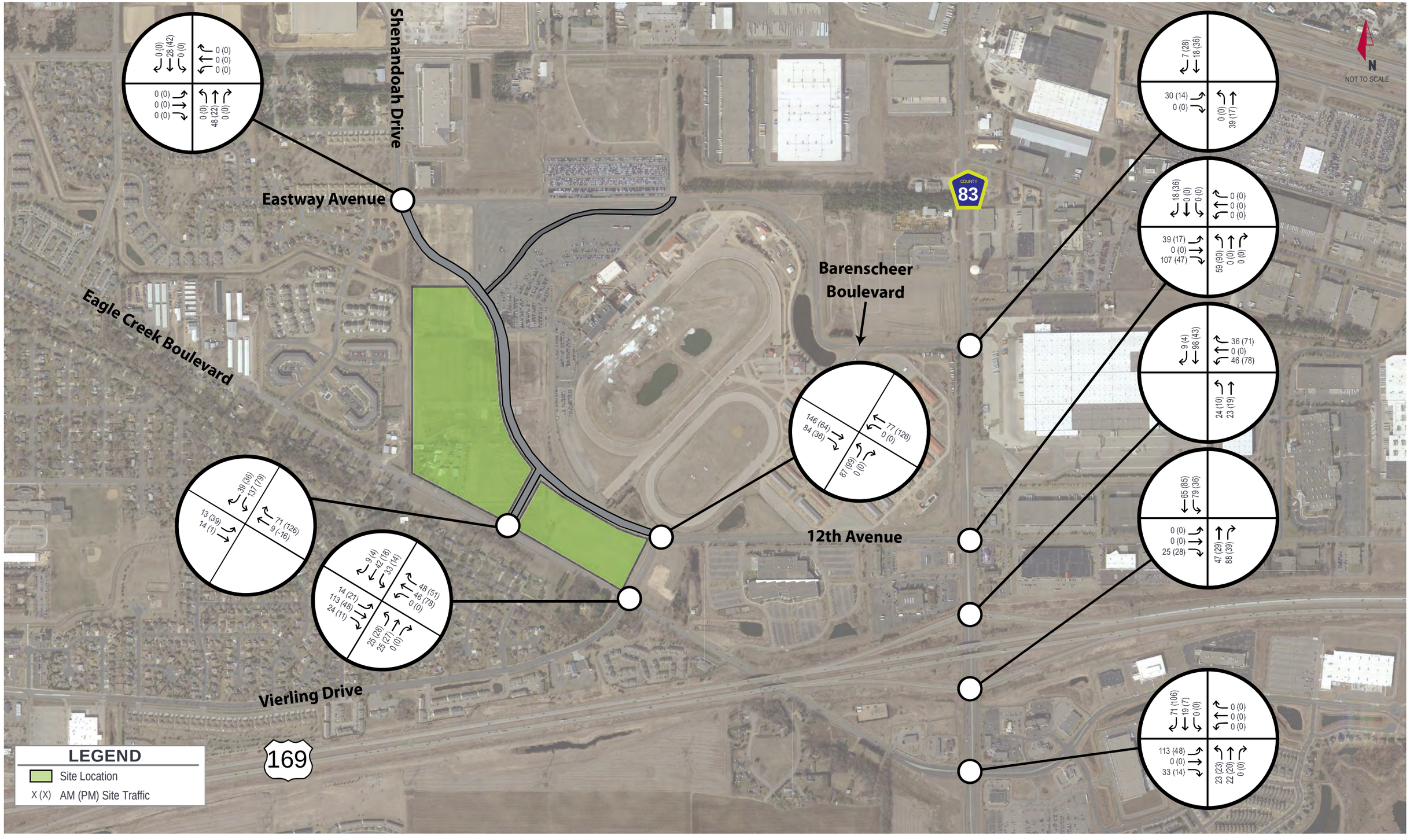

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EXHIBIT 9

FULL-BUILD (2025) SITE TRAFFIC ASSIGNMENT

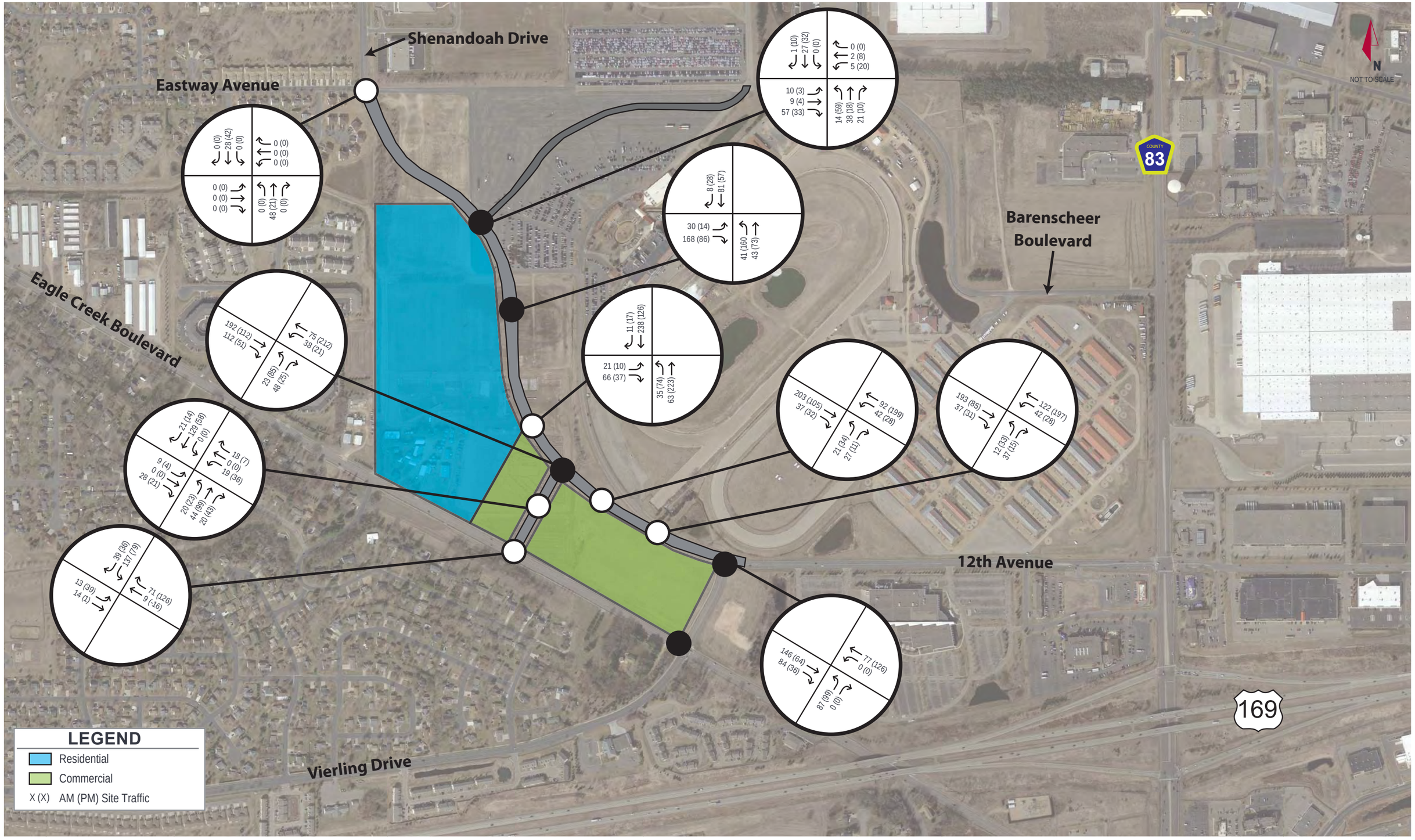

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EXHIBIT 10

FULL-BUILD (2025) SITE DRIVEWAY TRAFFIC ASSIGNMENT

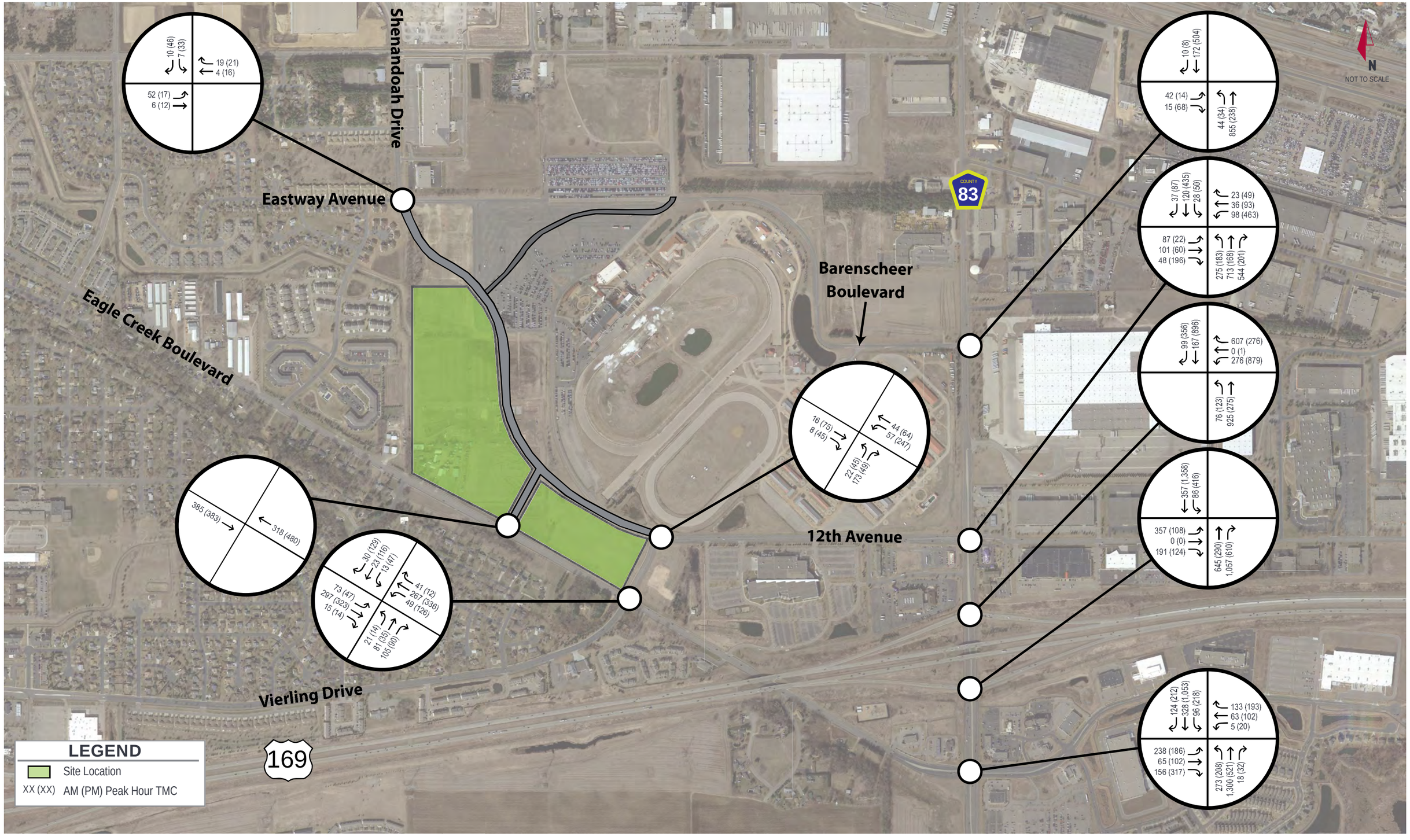

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EXHIBIT 11

PHASE 1 BACKGROUND (2020) TURNING MOVEMENT COUNTS

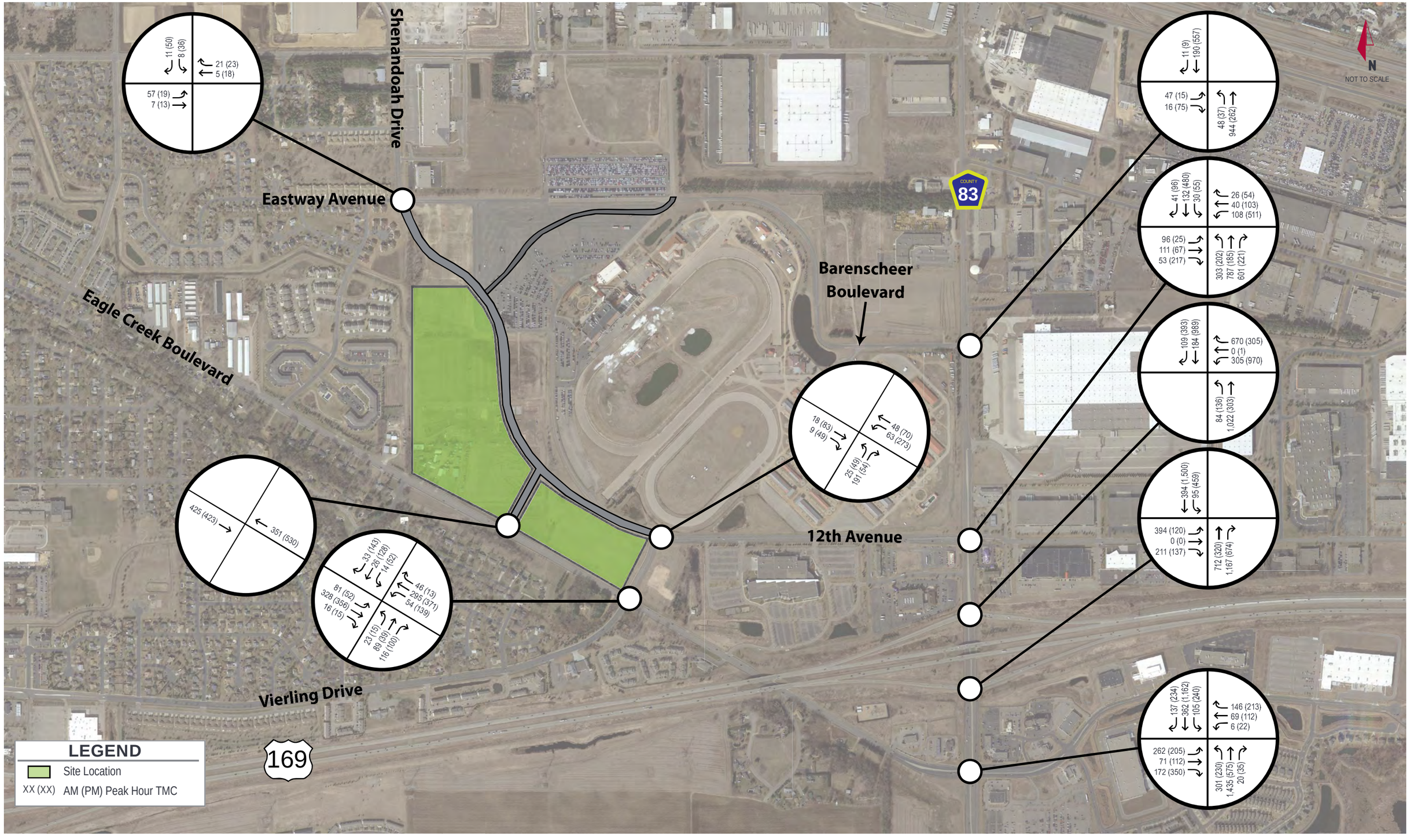

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EXHIBIT 12

FULL-BUILD BACKGROUND (2025) TURNING MOVEMENT COUNTS

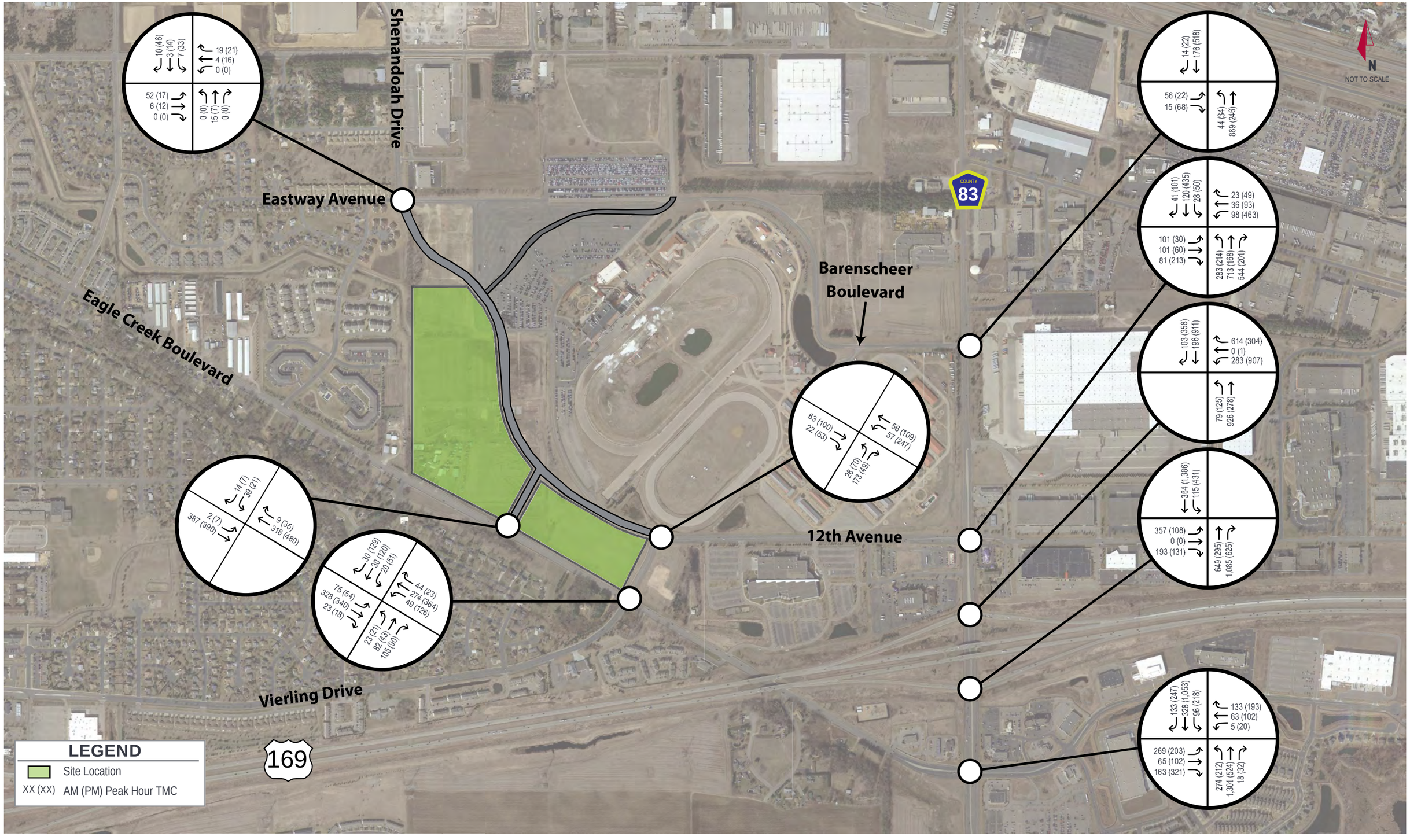

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EXHIBIT 13

PHASE 1 BUILD (2020) TURNING MOVEMENT COUNTS

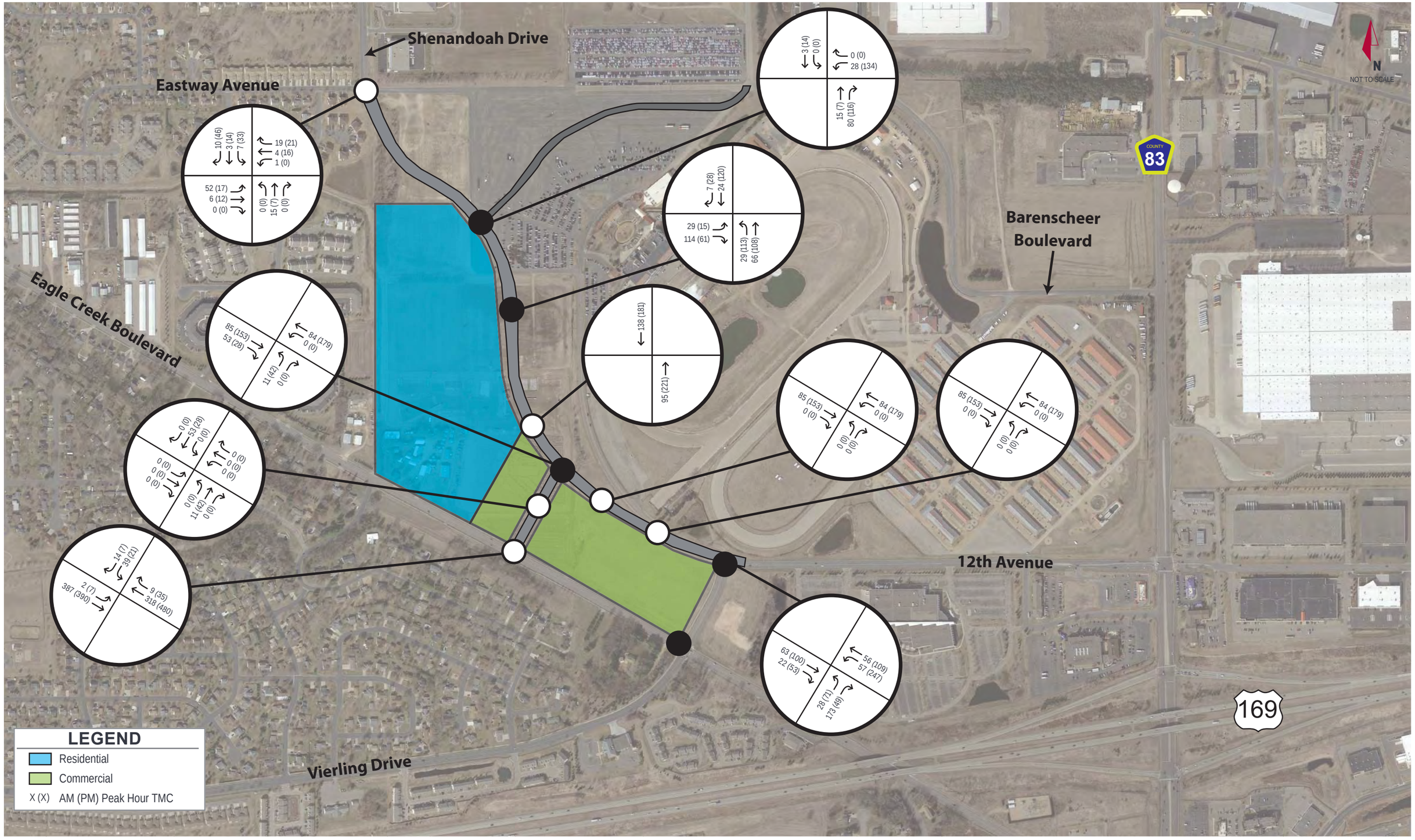

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EXHIBIT 14

DETAILED PHASE 1 BUILD (2020) TURNING MOVEMENT COUNTS

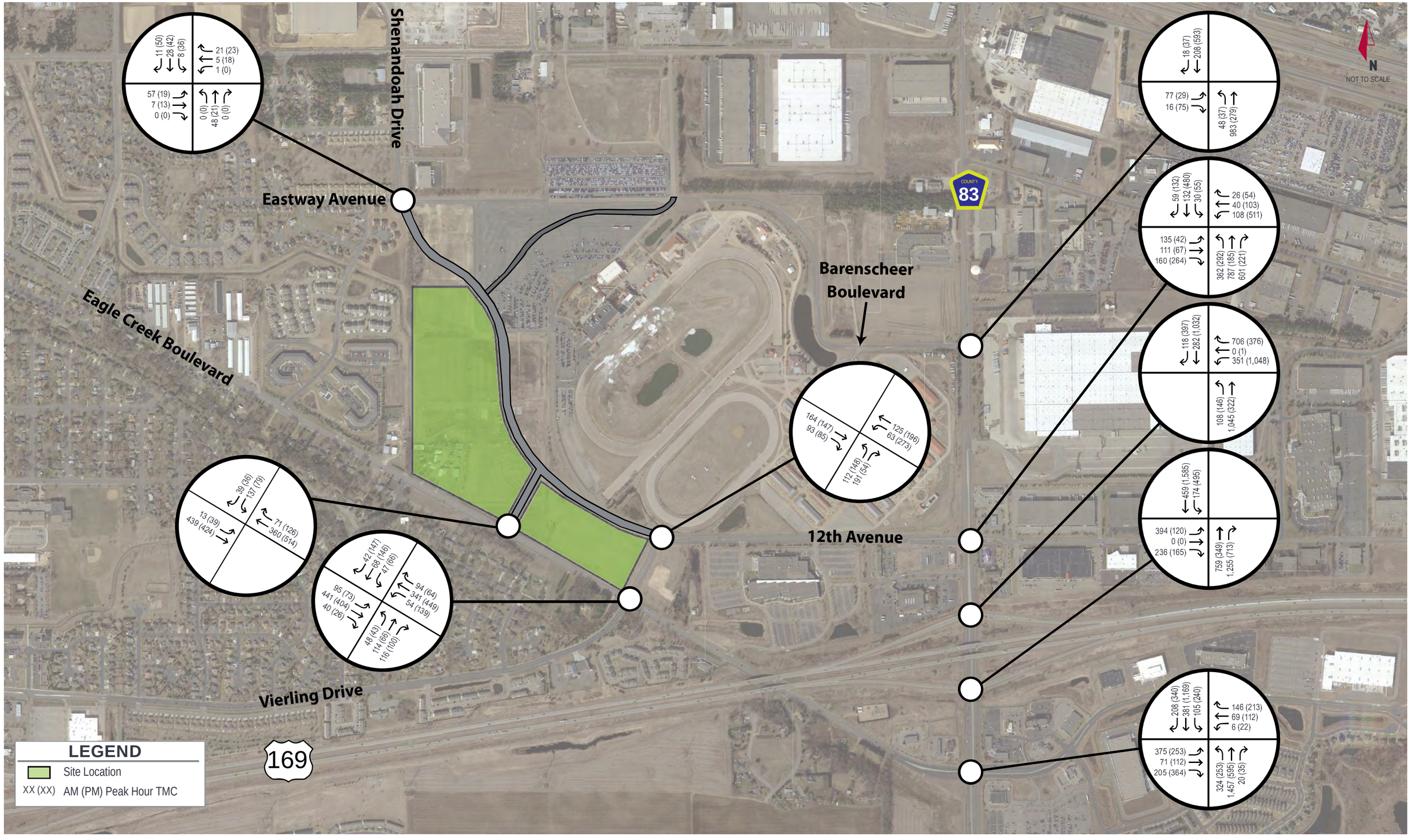

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EXHIBIT 15

FULL-BUILD (2025) TURNING MOVEMENT COUNTS

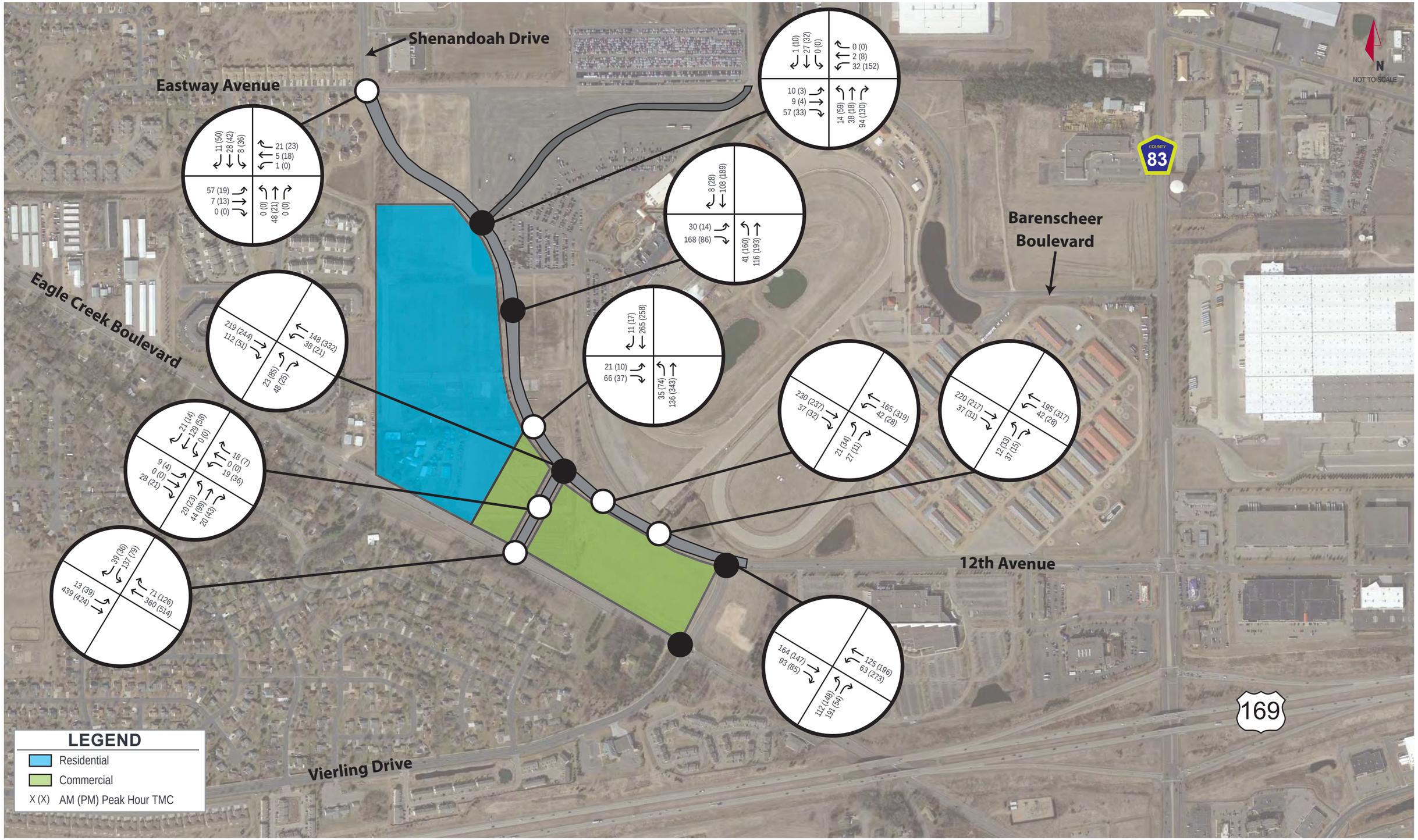

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EXHIBIT 16

DETAILED FULL-BUILD (2025) TURNING MOVEMENT COUNTS

Appendix C:
Site Trip Generation

CANTERBURY PARK MIXED USE DEVELOPMENT - Full Build									
Land Use Description	ITE	Intensity / Units	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Apartment	220	700 Dwelling Units	4,656	71	286	357	282	152	434
Residential Condominium/Townhouse	230	156 Dwelling Units	908	12	57	69	54	27	81
Hotel	310	120 Rooms	982	38	26	64	37	35	72
Shopping Center	820	62,000 Square Feet	2,648	37	23	60	110	120	230
High-Turnover (Sit-Down) Restaurant	932	31,000 Square Feet	3,942	184	151	335	183	122	305
TOTAL EXTERNAL TRIPS			13,136	342	543	885	666	456	1,122
Retail Internal Capture				*7*	*5*	*12*	*63*	*72*	*135*
Restaurant Internal Capture				*42*	*9*	*51*	*70*	*81*	*151*
Residential Internal Capture Reduction			-	*6*	*40*	*46*	*53*	*41*	*94*
Hotel Internal Capture Reduction			-	*2*	*3*	*5*	*19*	*11*	*30*
Total Internal Capture Reduction			-	*57*	*57*	*114*	*205*	*205*	*410*
TOTAL DRIVEWAY TRIPS			*13,136*	*285*	*486*	*771*	*461*	*251*	*712*
Peak Hour Pass-by Reduction Shopping Center (34%)			-	-	-	-	*16*	*16*	*32*
Peak Hour Pass-by Reduction Restaraunt (43%)			-	-	-	-	*26*	*26*	*52*
Peak Hour Pass-by Reduction			-	-	-	-	*42*	*42*	*84*
10% of Adjacent Street Traffic			-	-	-	-	*40*	*40*	*80*
Pass-by Reduction Applied (Minimum of Adjacent Street)			-	-	-	-	*40*	*40*	*80*
TOTAL NET NEW TRIPS			13,136	285	486	771	421	211	632

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY

GROSS TRIP GENERATION

	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
INPUT	Office						
	Retail	1,324	1,324	37	23	110	120
	Restaurant	1,971	1,971	184	151	183	122
	Cinema/Entertainment						
	Residential	2,782	2,782	83	343	336	179
	Hotel	491	246	38	26	37	35
		6,568	6,323	342	543	666	456

INTERNAL TRIPS

	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
OUTPUT	Office	0	0	0	0	0	0
	Retail	600	576	7	5	63	72
	Restaurant	708	700	42	9	70	81
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	482	543	6	40	53	41
	Hotel	161	132	2	3	19	11
		1,951	1,951	57	57	205	205
	% Reduction	30.3%		12.9%		36.5%	

EXTERNAL TRIPS

	Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
OUTPUT	Office	0	0	0	0	0	0
	Retail	724	748	30	18	47	48
	Restaurant	1,263	1,271	142	142	113	41
	Cinema/Entertainment	0	0	0	0	0	0
	Residential	2,300	2,239	77	303	283	138
	Hotel	330	114	36	23	18	24
		4,617	4,372	285	486	461	251

Appendix D:
SimTraffic Reports & Sidra Analysis

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.1	0.0	0.0	0.7	0.0	0.0	0.9
Total Del/Veh (s)	10.1	4.6	3.2	3.2	0.3	0.2	3.0
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.8	0.1	0.9	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.7	1.3	0.1	0.9	0.4	0.1	0.7	1.6	0.9	0.2	0.4	0.0
Total Del/Veh (s)	35.9	49.6	4.7	39.9	46.7	15.4	10.2	8.2	6.4	22.0	12.8	2.4
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.1
Total Delay (hr)	7.4
Total Del/Veh (s)	13.2
Denied Entry Before	0
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.2	0.5	0.0	0.0	0.0	0.0	0.6
Denied Del/Veh (s)	2.2	2.9	0.0	0.0	0.0	0.0	1.1
Total Delay (hr)	2.4	4.6	1.1	3.5	0.7	0.1	12.3
Total Del/Veh (s)	32.4	28.3	53.1	14.2	14.8	3.2	21.6
Denied Entry Before	0	1	0	0	0	0	1
Denied Entry After	0	1	0	0	0	0	1

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.1	0.0	0.0	0.0	0.0	0.2
Denied Del/Veh (s)	0.7	2.8	0.0	0.0	0.0	0.0	0.3
Total Delay (hr)	4.1	0.3	2.5	3.0	1.0	0.6	11.5
Total Del/Veh (s)	44.3	6.0	14.4	10.9	46.0	6.5	16.4
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	1	0	0	0	0	1

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.0	0.1	1.6	0.1	2.1	1.5	0.4	1.3	0.0	0.0	0.1
Total Delay (hr)	3.3	0.6	0.4	0.1	0.8	0.9	4.4	28.3	0.4	1.2	1.1	0.1
Total Del/Veh (s)	53.1	36.0	8.6	54.5	48.3	25.4	62.4	79.6	74.1	46.9	12.7	3.9
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.5
Total Delay (hr)	41.6
Total Del/Veh (s)	55.3
Denied Entry Before	0
Denied Entry After	0

6: Vierling Drive & 12th Ave E Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3
Total Del/Veh (s)	0.4	0.0	2.3	0.4	6.5	1.4	4.4	2.0
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

7: Vierling Drive & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0
Total Delay (hr)	0.1	0.6	0.0	0.1	0.8	0.1	0.0	0.2	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.5	7.7	4.0	8.8	8.1	9.5	5.7	7.8	4.3	5.8	6.4	3.2
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

7: Vierling Drive & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	2.2
Total Del/Veh (s)	7.4
Denied Entry Before	0
Denied Entry After	0

9: Eastway Avenue/Barenscheer Boulevard & Shenandoah Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.2	0.1	0.1
Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.6	6.0	5.8	2.5	0.1	0.1	3.5
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Denied Delay (hr)	1.3
Denied Del/Veh (s)	1.0
Total Delay (hr)	78.2
Total Del/Veh (s)	62.4
Denied Entry Before	1
Denied Entry After	2

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	69	44
Average Queue (ft)	31	7
95th Queue (ft)	55	31
Link Distance (ft)	1213	1753
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	121	129	57	119	100	162	108	119	137	48	53	75
Average Queue (ft)	46	60	15	52	32	63	50	66	55	13	15	24
95th Queue (ft)	95	110	35	97	74	123	102	111	102	35	42	60
Link Distance (ft)		843		1117	1117		609	609			1753	1753
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250			350			225	325		
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB
Directions Served	R
Maximum Queue (ft)	34
Average Queue (ft)	12
95th Queue (ft)	36
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	144	335	393	64	96	185	236	92	82	59
Average Queue (ft)	68	99	221	17	46	112	143	33	25	17
95th Queue (ft)	128	254	364	51	84	180	225	75	64	43
Link Distance (ft)		1243				649	649	609	609	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	400		400	300	300					550
Storage Blk Time (%)			2							
Queuing Penalty (veh)			4							

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	356	103	130	161	125	134	60	84	85	90
Average Queue (ft)	214	47	62	82	72	83	20	37	26	36
95th Queue (ft)	331	79	116	143	113	124	51	71	66	77
Link Distance (ft)	1219		646	646					649	649
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)		450			400	400	200	200		
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	R	L
Maximum Queue (ft)	218	236	146	61	93	5	30	68	50	66	105	142
Average Queue (ft)	48	128	22	28	46	0	4	31	14	19	46	63
95th Queue (ft)	122	208	80	60	78	4	20	59	39	49	86	119
Link Distance (ft)			3581	3581				1965	1965			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225	225			200	450	450			300	300	400
Storage Blk Time (%)	0	1										
Queuing Penalty (veh)	0	0										

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	421	1252	1272	264	60	79	77	83	32
Average Queue (ft)	141	664	760	30	14	38	25	36	8
95th Queue (ft)	341	1321	1335	173	42	72	63	75	24
Link Distance (ft)		2440	2440				646	646	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	400			300	550	550			300
Storage Blk Time (%)	0	5	42	0					
Queuing Penalty (veh)	0	13	7	0					

Intersection: 6: Vierling Drive & 12th Ave E

Movement	WB	NB	NB
Directions Served	L	L	R
Maximum Queue (ft)	30	31	70
Average Queue (ft)	2	13	34
95th Queue (ft)	14	37	50
Link Distance (ft)	1947	567	567
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Vierling Drive & Eagle Creek Boulevard

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	TR	LT	TR
Maximum Queue (ft)	74	87	87	106	43	73	34	47
Average Queue (ft)	49	44	46	54	18	40	18	22
95th Queue (ft)	71	70	71	84	41	65	42	47
Link Distance (ft)	1208	1208	3581	3581	1624	1624	567	567
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 9: Eastway Avenue/Barenscheer Boulevard & Shenandoah Drive

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	69	31
Average Queue (ft)	30	17
95th Queue (ft)	54	41
Link Distance (ft)	1556	2580
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 25

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.2	0.1	0.1
Total Delay (hr)	0.0	0.1	0.0	0.1	0.1	0.0	0.3
Total Del/Veh (s)	10.2	4.5	5.3	1.2	0.8	0.7	1.5
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.9	0.5	2.2	0.3	0.2	0.2	0.0	0.0	0.1	0.1	0.0	0.1
Total Delay (hr)	0.2	1.0	0.7	6.3	1.0	0.3	0.9	0.5	0.2	0.2	3.0	0.1
Total Del/Veh (s)	34.9	64.6	12.7	51.5	39.9	22.0	18.1	11.9	3.6	17.5	23.6	4.1
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.4
Total Delay (hr)	14.4
Total Del/Veh (s)	26.3
Denied Entry Before	0
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.5	0.0	0.2	0.0	0.0	0.0	0.0	0.7
Denied Del/Veh (s)	2.0	3.3	3.1	0.0	0.0	0.1	0.1	1.0
Total Delay (hr)	9.9	0.0	0.5	1.2	1.3	7.1	0.6	20.5
Total Del/Veh (s)	41.8	44.0	7.8	35.7	17.0	28.8	6.3	27.3
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.4	3.5	0.0	0.0	0.0	0.0	0.2
Total Delay (hr)	1.7	0.5	1.0	1.5	6.0	1.9	12.6
Total Del/Veh (s)	56.7	16.8	12.4	9.2	52.0	5.2	16.1
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.5	0.1	0.6	1.8	0.1	1.9	1.6	0.2	1.6	0.0	0.0	0.1
Total Delay (hr)	2.8	1.1	2.4	0.3	1.4	0.6	3.0	2.9	0.0	2.1	5.4	0.3
Total Del/Veh (s)	55.1	39.0	27.1	56.6	51.1	12.8	52.0	21.1	3.8	37.2	18.6	5.6
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.4
Total Delay (hr)	22.5
Total Del/Veh (s)	26.2
Denied Entry Before	0
Denied Entry After	0

6: Vierling Drive & 12th Ave E Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.4
Total Del/Veh (s)	0.8	0.4	3.6	0.4	9.4	1.4	3.9	2.8
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

7: Vierling Drive & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.0
Total Delay (hr)	0.1	0.8	0.0	0.4	1.1	0.0	0.0	0.1	0.1	0.1	0.3	0.2
Total Del/Veh (s)	9.0	9.1	5.5	11.7	10.3	10.2	6.7	8.8	4.3	7.3	7.9	5.2
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

7: Vierling Drive & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	3.2
Total Del/Veh (s)	8.8
Denied Entry Before	0
Denied Entry After	0

9: Eastway Avenue/Barenscheer Boulevard & Shenandoah Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.4	6.0	6.0	2.7	0.1	0.1	2.1
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Denied Delay (hr)	1.4
Denied Del/Veh (s)	1.1
Total Delay (hr)	78.2
Total Del/Veh (s)	56.0
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB	NB
Directions Served	LR	LT	T
Maximum Queue (ft)	74	53	10
Average Queue (ft)	35	13	0
95th Queue (ft)	60	43	7
Link Distance (ft)	1213	1753	1753
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	48	117	148	582	198	146	71	68	54	57	182	193
Average Queue (ft)	14	47	58	301	72	61	11	25	22	21	94	94
95th Queue (ft)	39	95	113	507	154	114	40	60	42	48	164	170
Link Distance (ft)		843		1117	1117		609	609			1753	1753
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250			350			225	325		
Storage Blk Time (%)												0
Queuing Penalty (veh)												0

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB
Directions Served	R
Maximum Queue (ft)	54
Average Queue (ft)	23
95th Queue (ft)	51
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	391	453	247	108	107	128	130	376	279	111
Average Queue (ft)	258	294	57	43	54	49	65	245	162	54
95th Queue (ft)	356	385	136	87	96	102	121	347	252	95
Link Distance (ft)		1243				649	649	609	609	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	400		400	300	300					550
Storage Blk Time (%)	0	0	0							
Queuing Penalty (veh)	0	2	0							

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	198	128	180	94	178	187	210	224	564	409
Average Queue (ft)	87	52	58	25	64	65	104	120	47	36
95th Queue (ft)	159	97	141	70	147	151	220	227	269	197
Link Distance (ft)	1219		646	646					649	649
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									1	
Storage Bay Dist (ft)		450			400	400	200	200		
Storage Blk Time (%)							3	4	0	
Queuing Penalty (veh)							17	24	1	

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	R	L
Maximum Queue (ft)	139	217	146	235	220	32	46	76	83	53	100	135
Average Queue (ft)	40	106	34	57	128	3	13	42	26	19	43	64
95th Queue (ft)	97	180	90	160	220	17	35	73	63	40	81	119
Link Distance (ft)			3581	3581				1965	1965			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225	225			200	450	450			300	300	400
Storage Blk Time (%)	0	0			3							
Queuing Penalty (veh)	0	0			2							

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	160	171	293	41	125	132	267	273	97
Average Queue (ft)	90	55	142	9	52	72	159	164	27
95th Queue (ft)	141	124	245	29	105	119	253	253	66
Link Distance (ft)		2440	2440				646	646	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	400			300	550	550			300
Storage Blk Time (%)			0					0	
Queuing Penalty (veh)			0					0	

Intersection: 6: Vierling Drive & 12th Ave E

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	27	88	56	52
Average Queue (ft)	1	22	23	25
95th Queue (ft)	11	63	51	47
Link Distance (ft)	1714	1947	567	567
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Vierling Drive & Eagle Creek Boulevard

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	TR	LT	TR
Maximum Queue (ft)	94	87	118	101	45	76	63	84
Average Queue (ft)	53	51	62	57	16	34	35	46
95th Queue (ft)	82	78	100	87	41	60	53	74
Link Distance (ft)	1239	1239	3581	3581	1625	1625	567	567
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 9: Eastway Avenue/Barenscheer Boulevard & Shenandoah Drive

Movement	EB	WB	SB
Directions Served	LT	TR	R
Maximum Queue (ft)	41	50	4
Average Queue (ft)	16	22	0
95th Queue (ft)	43	46	3
Link Distance (ft)	971	1609	1137
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 47

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.1	0.0	0.0	0.8	0.0	0.0	1.0
Total Del/Veh (s)	12.1	2.6	3.5	3.4	0.3	0.4	3.2
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.8	0.1	1.5	0.2	0.2	0.2	0.0	0.0	0.1	0.2	0.0	0.1
Total Delay (hr)	0.9	1.3	0.1	1.3	0.4	0.1	0.7	1.9	0.9	0.2	0.4	0.0
Total Del/Veh (s)	31.0	51.0	5.7	45.8	52.2	10.5	10.1	9.4	6.0	30.9	12.2	1.6
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	8.1
Total Del/Veh (s)	14.0
Denied Entry Before	0
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.2	0.5	0.0	0.0	0.0	0.0	0.6
Denied Del/Veh (s)	2.1	3.0	0.0	0.0	0.0	0.0	1.1
Total Delay (hr)	2.6	5.4	1.2	3.5	0.7	0.1	13.4
Total Del/Veh (s)	34.1	33.6	46.1	13.8	13.2	3.3	22.7
Denied Entry Before	0	1	0	0	0	0	1
Denied Entry After	1	0	0	0	0	0	1

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.1	0.0	0.0	0.0	0.0	0.2
Denied Del/Veh (s)	0.6	3.0	0.0	0.0	0.0	0.0	0.3
Total Delay (hr)	4.4	0.3	2.6	3.2	1.0	0.7	12.1
Total Del/Veh (s)	43.0	6.4	14.4	11.4	38.7	6.9	16.5
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.0	0.3	0.1	0.1	1.9	1.3	0.5	2.0	0.0	0.0	0.0
Total Delay (hr)	4.0	0.6	0.4	0.0	0.7	1.0	8.1	52.2	0.9	1.2	1.1	0.1
Total Del/Veh (s)	59.5	39.9	8.7	53.9	47.9	23.7	99.8	143.0	162.3	52.2	12.4	4.4
Denied Entry Before	0	0	0	0	0	1	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	1	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.5
Total Delay (hr)	70.4
Total Del/Veh (s)	89.8
Denied Entry Before	1
Denied Entry After	1

6: Vierling Drive & 12th Ave E Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.2	0.3
Total Del/Veh (s)	1.2	0.2	2.2	0.5	6.5	4.3	2.0
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

7: Vierling Drive & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0
Total Delay (hr)	0.2	0.6	0.0	0.1	0.8	0.1	0.0	0.2	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.1	7.8	4.0	9.3	8.3	9.8	5.3	8.1	4.4	5.4	6.8	2.6
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

7: Vierling Drive & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	2.3
Total Del/Veh (s)	7.5
Denied Entry Before	0
Denied Entry After	0

9: Eastway Avenue/Barenscheer Boulevard & Shenandoah Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.3	0.1	0.3	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.4	10.6	5.8	3.2	0.0	0.0	3.5
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Denied Delay (hr)	1.3
Denied Del/Veh (s)	1.1
Total Delay (hr)	109.9
Total Del/Veh (s)	84.5
Denied Entry Before	2
Denied Entry After	2

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	78	53
Average Queue (ft)	31	8
95th Queue (ft)	59	31
Link Distance (ft)	1213	1753
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	128	128	54	195	82	134	157	162	124	85	61	50
Average Queue (ft)	51	63	17	74	31	57	68	74	54	18	19	19
95th Queue (ft)	99	112	42	146	65	104	145	139	97	50	46	49
Link Distance (ft)		843		1117	1117		609	609			1753	1753
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250			350			225	325		
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB
Directions Served	R
Maximum Queue (ft)	30
Average Queue (ft)	12
95th Queue (ft)	34
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	179	624	425	52	94	287	246	101	88	52
Average Queue (ft)	76	126	244	22	48	115	147	36	28	18
95th Queue (ft)	151	335	400	51	88	210	239	79	68	37
Link Distance (ft)		1243				649	649	609	609	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	400		400	300	300					550
Storage Blk Time (%)			5			0				
Queuing Penalty (veh)			14			0				

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	351	95	150	156	157	145	78	65	111	101
Average Queue (ft)	223	47	68	87	76	95	23	33	27	41
95th Queue (ft)	319	82	132	153	127	133	59	62	71	84
Link Distance (ft)	1219		646	646					649	649
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)		450			400	400	200	200		
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	R	L	L
Maximum Queue (ft)	233	249	328	72	74	46	46	42	67	110	142	424
Average Queue (ft)	70	142	24	24	47	3	26	12	21	51	76	204
95th Queue (ft)	181	238	123	56	71	20	45	33	51	94	127	456
Link Distance (ft)			3581	3581			1965	1965				
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225	225			200	450			300	300	400	400
Storage Blk Time (%)	0	3										0
Queuing Penalty (veh)	0	1										0

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	1764	1837	325	66	63	108	118	73
Average Queue (ft)	1174	1255	39	16	39	21	34	11
95th Queue (ft)	1794	1792	203	46	71	65	81	39
Link Distance (ft)	2440	2440				646	646	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			300	550	550			300
Storage Blk Time (%)	9	54						
Queuing Penalty (veh)	25	10						

Intersection: 6: Vierling Drive & 12th Ave E

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	50	68
Average Queue (ft)	14	35
95th Queue (ft)	40	48
Link Distance (ft)	567	567
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Vierling Drive & Eagle Creek Boulevard

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	TR	LT	TR
Maximum Queue (ft)	97	101	118	101	52	102	30	31
Average Queue (ft)	48	50	50	55	23	41	17	22
95th Queue (ft)	72	76	83	85	48	70	41	43
Link Distance (ft)	1208	1208	3581	3581	1624	1624	567	567
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 9: Eastway Avenue/Barenscheer Boulevard & Shenandoah Drive

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	55	53
Average Queue (ft)	23	11
95th Queue (ft)	52	37
Link Distance (ft)	1556	2580
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 51

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.2	0.1	0.1
Total Delay (hr)	0.0	0.1	0.0	0.1	0.1	0.0	0.4
Total Del/Veh (s)	7.4	4.3	5.3	1.2	0.8	0.9	1.5
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	2.0	0.4	2.2	0.3	0.2	0.2	0.0	0.0	0.1	0.1	0.0	0.1
Total Delay (hr)	0.2	0.9	0.7	6.9	0.9	0.3	1.0	0.6	0.2	0.3	3.1	0.1
Total Del/Veh (s)	32.2	59.2	12.8	52.7	36.6	20.4	20.6	12.8	3.5	20.0	24.6	4.1
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	15.2
Total Del/Veh (s)	27.0
Denied Entry Before	0
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.5	0.0	0.2	0.0	0.0	0.0	0.0	0.8
Denied Del/Veh (s)	2.1	2.0	3.1	0.0	0.0	0.1	0.1	1.0
Total Delay (hr)	10.4	0.0	0.6	1.3	1.3	7.4	0.7	21.7
Total Del/Veh (s)	42.3	35.8	8.4	36.5	16.3	29.8	6.8	27.7
Denied Entry Before	1	0	0	0	0	0	0	1
Denied Entry After	0	0	0	0	0	0	0	0

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.5	3.4	0.0	0.0	0.0	0.0	0.2
Total Delay (hr)	1.7	0.6	1.0	1.6	5.8	1.9	12.7
Total Del/Veh (s)	55.9	18.1	11.9	9.4	49.6	5.1	15.6
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.4	0.1	0.5	2.0	0.1	1.9	1.6	0.3	1.6	0.0	0.0	0.1
Total Delay (hr)	2.9	1.3	2.7	0.4	1.6	0.7	3.3	3.2	0.0	2.4	5.5	0.4
Total Del/Veh (s)	57.3	43.6	29.0	59.3	51.5	13.0	55.0	21.3	5.5	38.9	18.8	6.5
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.4
Total Delay (hr)	24.5
Total Del/Veh (s)	27.1
Denied Entry Before	0
Denied Entry After	0

6: Vierling Drive & 12th Ave E Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.3	0.0	0.1	0.0	0.1	0.5
Total Del/Veh (s)	0.8	0.4	3.8	0.5	9.3	1.2	3.8	2.9
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

7: Vierling Drive & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0
Total Delay (hr)	0.1	0.9	0.0	0.4	1.2	0.0	0.0	0.1	0.1	0.1	0.3	0.2
Total Del/Veh (s)	8.3	9.7	6.8	12.0	10.8	8.6	7.2	8.7	4.6	7.9	8.4	5.6
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

7: Vierling Drive & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	3.5
Total Del/Veh (s)	9.2
Denied Entry Before	0
Denied Entry After	0

9: Eastway Avenue/Barenscheer Boulevard & Shenandoah Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.4	5.8	6.0	2.8	0.2	0.2	2.5
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

Total Network Performance

Denied Delay (hr)	1.5
Denied Del/Veh (s)	1.1
Total Delay (hr)	82.9
Total Del/Veh (s)	56.5
Denied Entry Before	1
Denied Entry After	0

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	59	53	4
Average Queue (ft)	34	13	0
95th Queue (ft)	54	42	3
Link Distance (ft)	1213	1753	1703
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	58	107	149	528	215	163	54	72	76	78	198	192
Average Queue (ft)	15	42	55	321	71	70	13	26	24	27	95	96
95th Queue (ft)	41	89	106	511	144	132	41	61	51	63	166	171
Link Distance (ft)		843		1117	1117		609	609			1753	1753
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250			350			225	325		
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB
Directions Served	R
Maximum Queue (ft)	59
Average Queue (ft)	25
95th Queue (ft)	53
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	388	494	302	105	112	143	144	368	268	130
Average Queue (ft)	265	308	66	48	57	57	64	253	166	58
95th Queue (ft)	370	428	183	91	98	112	118	356	252	102
Link Distance (ft)		1243				649	649	609	609	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	400		400	300	300					550
Storage Blk Time (%)	0	1	0							
Queuing Penalty (veh)	0	4	0							

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	220	117	163	94	178	181	211	222	424	239
Average Queue (ft)	90	57	58	24	65	66	93	111	47	26
95th Queue (ft)	173	101	130	71	149	156	212	222	260	142
Link Distance (ft)	1219		646	646					649	649
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									0	
Storage Bay Dist (ft)		450			400	400	200	200		
Storage Blk Time (%)							4	6	0	
Queuing Penalty (veh)							27	39	0	

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	R	L
Maximum Queue (ft)	150	219	132	348	224	31	52	83	86	61	97	142
Average Queue (ft)	41	103	39	65	138	4	17	45	33	23	44	68
95th Queue (ft)	96	179	89	203	221	19	44	75	70	45	81	122
Link Distance (ft)			3581	3581				1965	1965			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225	225			200	450	450			300	300	400
Storage Blk Time (%)	0	0		0	5							
Queuing Penalty (veh)	0	0		0	3							

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	163	144	309	98	130	137	279	298	142
Average Queue (ft)	93	57	153	10	55	76	160	164	34
95th Queue (ft)	144	123	261	58	107	127	254	266	94
Link Distance (ft)		2440	2440				646	646	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	400			300	550	550			300
Storage Blk Time (%)			0					0	
Queuing Penalty (veh)			0					0	

Intersection: 6: Vierling Drive & 12th Ave E

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	13	78	50	46
Average Queue (ft)	1	22	25	25
95th Queue (ft)	6	62	48	46
Link Distance (ft)	1714	1947	567	567
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Vierling Drive & Eagle Creek Boulevard

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	TR	LT	TR
Maximum Queue (ft)	94	98	113	109	44	63	69	86
Average Queue (ft)	56	54	62	59	17	35	36	48
95th Queue (ft)	81	83	98	89	42	57	57	76
Link Distance (ft)	1239	1239	3581	3581	1625	1625	567	567
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 9: Eastway Avenue/Barenscheer Boulevard & Shenandoah Drive

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	45	53
Average Queue (ft)	22	24
95th Queue (ft)	46	47
Link Distance (ft)	971	1609
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 74

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.2	0.0	0.0	0.8	0.0	0.0	1.0
Total Del/Veh (s)	12.1	4.7	3.1	3.3	0.3	0.1	3.2
Vehicles Entered	54	16	37	855	173	13	1148
Vehicles Exited	54	16	37	860	174	13	1154
Hourly Exit Rate	54	16	37	860	174	13	1154
Input Volume	56	15	44	869	176	14	1174
% of Volume	96	108	85	99	99	95	98
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.8	0.1	0.8	0.2	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.1
Total Delay (hr)	1.0	1.5	0.1	1.1	0.5	0.1	0.8	1.7	1.0	0.2	0.5	0.0
Total Del/Veh (s)	34.4	51.4	5.1	40.9	50.8	20.2	10.1	8.4	6.7	22.1	13.7	2.1
Vehicles Entered	99	103	80	92	32	24	278	721	540	31	119	42
Vehicles Exited	99	104	80	92	33	24	277	721	540	31	118	41
Hourly Exit Rate	99	104	80	92	33	24	277	721	540	31	118	41
Input Volume	101	101	81	98	36	23	283	737	544	28	123	41
% of Volume	98	103	99	94	92	104	98	98	99	110	96	100
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	8.4
Total Del/Veh (s)	13.8
Vehicles Entered	2161
Vehicles Exited	2160
Hourly Exit Rate	2160
Input Volume	2196
% of Volume	98
Denied Entry Before	0
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.1	0.5	0.0	0.0	0.0	0.0	0.6
Denied Del/Veh (s)	1.7	2.8	0.0	0.0	0.0	0.0	1.0
Total Delay (hr)	2.6	6.2	0.7	3.9	0.9	0.1	14.5
Total Del/Veh (s)	33.8	36.2	39.6	15.3	17.2	3.3	24.0
Vehicles Entered	274	603	64	910	192	102	2145
Vehicles Exited	277	611	64	906	190	101	2149
Hourly Exit Rate	277	611	64	906	190	101	2149
Input Volume	283	614	79	927	200	103	2206
% of Volume	98	100	81	98	95	98	97
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.1	0.0	0.0	0.0	0.0	0.2
Denied Del/Veh (s)	0.6	2.3	0.0	0.0	0.0	0.0	0.3
Total Delay (hr)	4.7	0.4	2.7	3.3	2.1	0.8	14.0
Total Del/Veh (s)	47.3	7.1	15.6	11.5	68.1	7.7	18.7
Vehicles Entered	350	188	627	1027	107	358	2657
Vehicles Exited	354	189	621	1024	109	356	2653
Hourly Exit Rate	354	189	621	1024	109	356	2653
Input Volume	357	193	649	1085	115	365	2764
% of Volume	99	98	96	94	95	98	96
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.7	3.3	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.0	0.2	1.3	0.1	2.1	9.1	9.2	7.5	0.0	0.0	0.1
Total Delay (hr)	5.2	0.7	0.5	0.1	0.8	0.9	11.1	74.8	1.3	1.0	1.3	0.2
Total Del/Veh (s)	65.1	36.1	9.9	56.0	44.9	25.2	147.7	200.2	239.7	43.8	13.8	4.5
Vehicles Entered	280	67	169	6	64	131	264	1291	19	82	333	133
Vehicles Exited	276	67	171	5	65	132	249	1216	18	81	332	133
Hourly Exit Rate	276	67	171	5	65	132	249	1216	18	81	332	133
Input Volume	269	65	163	5	63	133	274	1301	18	96	333	133
% of Volume	103	103	105	100	103	99	91	93	99	85	100	100
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	3	15	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	4.1
Denied Del/Veh (s)	5.2
Total Delay (hr)	97.9
Total Del/Veh (s)	120.6
Vehicles Entered	2839
Vehicles Exited	2745
Hourly Exit Rate	2745
Input Volume	2852
% of Volume	96
Denied Entry Before	0
Denied Entry After	18

8: Eagle Creek Boulevard & Site Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0		0.0	0.1
Total Delay (hr)	0.0	1.0	0.7	0.0	0.1	0.0	0.0	1.8
Total Del/Veh (s)	12.6	8.5	8.3	5.8	4.8		3.0	8.1
Vehicles Entered	2	409	312	9	39	0	12	783
Vehicles Exited	2	407	312	9	40	0	12	782
Hourly Exit Rate	2	407	312	9	40	0	12	782
Input Volume	2	387	320	9	39	0	14	772
% of Volume	100	105	98	97	103	0	84	101
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1		0.1	0.1	0.0	0.1	0.1	0.1	0.1
Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.5	6.0		5.9	2.2	0.2	1.5	0.0	0.1	2.9
Vehicles Entered	56	7	0	4	21	19	6	4	12	129
Vehicles Exited	56	7	0	4	21	19	6	4	12	129
Hourly Exit Rate	56	7	0	4	21	19	6	4	12	129
Input Volume	52	6	1	4	19	16	7	3	10	119
% of Volume	108	122	0	94	109	117	89	123	117	109
Denied Entry Before	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0

Total Zone Performance

Denied Delay (hr)	5.0
Denied Del/Veh (s)	4.1
Total Delay (hr)	137.7
Total Del/Veh (s)	1573.7
Vehicles Entered	4355
Vehicles Exited	42
Hourly Exit Rate	42
Input Volume	12083
% of Volume	0
Denied Entry Before	0
Denied Entry After	18

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	74	41
Average Queue (ft)	36	5
95th Queue (ft)	62	25
Link Distance (ft)	1213	1753
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	139	168	55	132	92	146	118	126	153	60	56	100
Average Queue (ft)	61	74	22	58	36	62	57	65	59	16	18	24
95th Queue (ft)	113	141	44	109	79	118	108	112	112	42	48	65
Link Distance (ft)		843		1117	1117		609	609			1753	1753
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250			350			225	325		
Storage Blk Time (%)									0			
Queuing Penalty (veh)									0			

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB
Directions Served	R
Maximum Queue (ft)	39
Average Queue (ft)	15
95th Queue (ft)	39
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	150	662	425	53	73	199	244	142	78	57
Average Queue (ft)	59	165	269	12	38	131	156	53	24	20
95th Queue (ft)	118	451	436	40	68	197	232	104	61	44
Link Distance (ft)		1243				649	649	609	609	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	400		400	300	300					550
Storage Blk Time (%)		0	6							
Queuing Penalty (veh)		0	16							

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	458	189	160	170	130	131	86	89	93	97
Average Queue (ft)	232	57	72	89	76	91	37	50	39	45
95th Queue (ft)	380	147	134	152	114	123	72	84	80	88
Link Distance (ft)	1635		647	647					649	649
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)		450			400	400	200	200		
Storage Blk Time (%)	1	0								
Queuing Penalty (veh)	1	0								

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	R	L
Maximum Queue (ft)	234	246	374	68	111	6	26	65	53	64	114	140
Average Queue (ft)	87	162	53	28	52	0	5	29	15	20	46	66
95th Queue (ft)	201	251	213	63	91	4	22	57	44	49	91	125
Link Distance (ft)			3581	3581				1965	1965			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225	225			200	450	450			300	300	400
Storage Blk Time (%)	0	7	0									
Queuing Penalty (veh)	0	2	0									

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	424	2436	2453	325	48	84	107	109	46
Average Queue (ft)	165	1558	1591	50	11	31	29	40	9
95th Queue (ft)	404	2601	2606	234	35	65	73	87	28
Link Distance (ft)		2440	2440				647	647	
Upstream Blk Time (%)		12	13						
Queuing Penalty (veh)		0	0						
Storage Bay Dist (ft)	400			300	550	550			300
Storage Blk Time (%)	0	9	54	0					
Queuing Penalty (veh)	0	23	10	0					

Intersection: 8: Eagle Creek Boulevard & Site Road

Movement	EB	EB	WB	WB	SB	SB
Directions Served	LT	T	T	TR	L	R
Maximum Queue (ft)	81	76	61	75	57	31
Average Queue (ft)	47	45	34	42	25	10
95th Queue (ft)	70	68	52	64	51	34
Link Distance (ft)	4608	4608	1221	1221	213	213
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard

Movement	EB	WB	SB
Directions Served	LTR	LTR	R
Maximum Queue (ft)	45	25	4
Average Queue (ft)	18	11	0
95th Queue (ft)	36	27	3
Link Distance (ft)	961	1598	1137
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 53

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.2	0.1	0.1
Total Delay (hr)	0.1	0.1	0.0	0.1	0.1	0.0	0.4
Total Del/Veh (s)	10.4	4.7	4.3	2.2	0.8	0.5	1.7
Vehicles Entered	19	64	33	243	525	19	903
Vehicles Exited	19	64	32	243	523	19	900
Hourly Exit Rate	19	64	32	243	523	19	900
Input Volume	22	68	34	246	518	22	910
% of Volume	86	94	93	99	101	86	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	2.2	0.4	2.1	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.3	1.0	0.9	6.9	0.8	0.2	1.3	0.7	0.2	0.3	3.1	0.1
Total Del/Veh (s)	32.9	59.3	14.8	52.9	33.9	15.3	21.1	12.9	3.6	18.8	25.5	4.5
Vehicles Entered	28	59	213	464	88	44	214	180	202	52	434	104
Vehicles Exited	27	57	212	460	88	44	215	181	202	52	436	104
Hourly Exit Rate	27	57	212	460	88	44	215	181	202	52	436	104
Input Volume	30	60	213	463	93	49	214	176	201	50	439	101
% of Volume	89	95	100	99	95	89	101	103	100	103	99	103
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	15.7
Total Del/Veh (s)	26.9
Vehicles Entered	2082
Vehicles Exited	2078
Hourly Exit Rate	2078
Input Volume	2089
% of Volume	99
Denied Entry Before	0
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.6	0.0	0.3	0.0	0.0	0.0	0.0	0.9
Denied Del/Veh (s)	2.4	0.1	3.3	0.0	0.0	0.2	0.1	1.2
Total Delay (hr)	11.8	0.0	0.9	1.3	1.4	7.9	0.6	24.0
Total Del/Veh (s)	45.8	16.6	10.2	35.3	17.4	30.7	6.5	29.3
Vehicles Entered	920	1	301	126	287	913	350	2898
Vehicles Exited	906	1	300	130	288	921	353	2899
Hourly Exit Rate	906	1	300	130	288	921	353	2899
Input Volume	907	1	304	125	279	911	358	2885
% of Volume	100	100	99	104	103	101	99	100
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	2	0	0	0	0	0	0	2

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.4	2.4	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	1.7	0.8	1.2	1.7	6.1	2.1	13.7
Total Del/Veh (s)	53.1	20.3	13.8	9.9	50.1	5.5	16.2
Vehicles Entered	109	139	310	634	436	1391	3019
Vehicles Exited	112	142	307	629	437	1386	3013
Hourly Exit Rate	112	142	307	629	437	1386	3013
Input Volume	108	131	303	625	431	1387	2985
% of Volume	104	109	101	101	101	100	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.5	0.1	0.5	2.2	0.1	1.9	1.7	0.3	1.4	0.0	0.0	0.0
Total Delay (hr)	3.3	1.1	2.7	0.3	1.6	0.9	3.4	3.4	0.1	2.4	6.3	0.5
Total Del/Veh (s)	58.4	39.6	28.7	56.8	54.0	15.9	55.3	22.8	5.5	38.4	21.2	6.8
Vehicles Entered	197	97	331	19	104	198	213	535	36	222	1065	254
Vehicles Exited	201	96	331	19	107	197	216	536	36	221	1064	257
Hourly Exit Rate	201	96	331	19	107	197	216	536	36	221	1064	257
Input Volume	203	102	321	20	102	193	212	524	32	218	1066	247
% of Volume	99	94	103	94	105	102	102	102	113	101	100	104
Denied Entry Before	0	0	0	0	0	1	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.4
Total Delay (hr)	26.0
Total Del/Veh (s)	28.2
Vehicles Entered	3271
Vehicles Exited	3281
Hourly Exit Rate	3281
Input Volume	3240
% of Volume	101
Denied Entry Before	1
Denied Entry After	0

8: Eagle Creek Boulevard & Site Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.3	0.3	0.0	0.1	0.0	0.0	0.7
Total Del/Veh (s)	6.5	2.7	2.3	2.6	10.5	0.0	3.6	2.7
Vehicles Entered	6	393	486	33	19	2	9	948
Vehicles Exited	6	390	488	33	20	2	9	948
Hourly Exit Rate	6	390	488	33	20	2	9	948
Input Volume	7	390	482	35	21	1	7	944
% of Volume	83	100	101	94	96	200	124	100
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard Performance by movement

Movement	EBL	EBT	WBT	WBR	NBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.7	5.7	6.3	2.3	0.0	1.9	0.6	0.3	2.2
Vehicles Entered	17	11	12	21	7	33	15	42	158
Vehicles Exited	17	11	12	22	7	33	15	43	160
Hourly Exit Rate	17	11	12	22	7	33	15	43	160
Input Volume	17	12	16	21	8	33	14	46	167
% of Volume	100	90	75	104	93	100	109	93	96
Denied Entry Before	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0

Total Zone Performance

Denied Delay (hr)	1.6
Denied Del/Veh (s)	1.2
Total Delay (hr)	80.7
Total Del/Veh (s)	1279.5
Vehicles Entered	4888
Vehicles Exited	49
Hourly Exit Rate	49
Input Volume	13220
% of Volume	0
Denied Entry Before	1
Denied Entry After	2

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	67	53
Average Queue (ft)	34	10
95th Queue (ft)	57	36
Link Distance (ft)	1213	1753
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	58	118	138	569	247	157	72	76	56	78	198	213
Average Queue (ft)	19	46	67	319	69	78	16	30	24	25	99	97
95th Queue (ft)	49	93	122	512	159	133	48	66	46	61	173	175
Link Distance (ft)		843		1117	1117		609	609			1753	1753
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250			350			225	325		
Storage Blk Time (%)												0
Queuing Penalty (veh)												0

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB
Directions Served	R
Maximum Queue (ft)	66
Average Queue (ft)	29
95th Queue (ft)	58
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	424	620	364	111	111	137	137	447	367	131
Average Queue (ft)	292	346	93	51	58	62	63	271	175	54
95th Queue (ft)	401	514	263	99	101	119	117	391	286	99
Link Distance (ft)		1243				649	649	609	609	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	400		400	300	300					550
Storage Blk Time (%)	0	2	0							
Queuing Penalty (veh)	1	18	0							

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	170	137	195	104	198	200	212	223	597	380
Average Queue (ft)	90	66	67	30	74	75	99	117	61	39
95th Queue (ft)	153	116	157	79	167	168	218	229	324	208
Link Distance (ft)	1635		647	647					649	649
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									1	
Storage Bay Dist (ft)		450			400	400	200	200		
Storage Blk Time (%)							4	7	0	
Queuing Penalty (veh)							26	50	2	

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	R	L
Maximum Queue (ft)	181	226	193	274	223	27	51	92	87	78	119	148
Average Queue (ft)	47	119	42	63	140	3	15	47	34	24	53	68
95th Queue (ft)	124	193	132	192	227	17	41	80	73	59	101	130
Link Distance (ft)			3581	3581				1965	1965			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225	225			200	450	450			300	300	400
Storage Blk Time (%)	0	2			5							
Queuing Penalty (veh)	0	1			3							

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	161	170	268	46	128	143	284	303	198
Average Queue (ft)	95	61	156	9	55	77	180	187	43
95th Queue (ft)	147	136	257	29	106	122	261	276	115
Link Distance (ft)		2440	2440				647	647	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	400			300	550	550			300
Storage Blk Time (%)			0					0	
Queuing Penalty (veh)			0					1	

Intersection: 8: Eagle Creek Boulevard & Site Road

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	35	44	31
Average Queue (ft)	2	16	7
95th Queue (ft)	16	43	28
Link Distance (ft)	4608	213	213
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	23	50	12
Average Queue (ft)	12	15	0
95th Queue (ft)	27	35	6
Link Distance (ft)	961	1598	1137
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 102

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.2	0.0	0.0	0.9	0.0	0.0	1.1
Total Del/Veh (s)	11.6	4.0	3.7	3.5	0.4	0.2	3.4
Vehicles Entered	59	18	39	881	187	15	1199
Vehicles Exited	58	18	40	886	187	15	1204
Hourly Exit Rate	58	18	40	886	187	15	1204
Input Volume	56	15	44	869	176	14	1174
% of Volume	103	122	91	102	106	109	103
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.9	0.1	0.6	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1
Total Delay (hr)	1.0	1.6	0.1	1.1	0.6	0.2	0.9	2.0	1.1	0.2	0.5	0.0
Total Del/Veh (s)	34.5	52.8	4.9	39.5	52.7	21.9	11.0	9.4	7.2	21.0	12.8	2.1
Vehicles Entered	100	108	80	100	36	25	277	750	543	30	130	47
Vehicles Exited	101	109	80	100	38	25	276	748	545	29	131	47
Hourly Exit Rate	101	109	80	100	38	25	276	748	545	29	131	47
Input Volume	101	101	81	98	36	23	283	737	544	28	123	41
% of Volume	100	108	99	102	106	109	98	102	100	103	107	115
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	9.1
Total Del/Veh (s)	14.6
Vehicles Entered	2226
Vehicles Exited	2229
Hourly Exit Rate	2229
Input Volume	2196
% of Volume	102
Denied Entry Before	0
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.1	0.5	0.0	0.0	0.0	0.0	0.7
Denied Del/Veh (s)	1.9	2.9	0.0	0.0	0.0	0.0	1.1
Total Delay (hr)	2.8	7.8	0.8	4.1	0.9	0.1	16.6
Total Del/Veh (s)	35.8	43.9	39.9	16.0	16.6	3.6	26.6
Vehicles Entered	280	624	72	927	203	109	2215
Vehicles Exited	285	628	73	921	202	109	2218
Hourly Exit Rate	285	628	73	921	202	109	2218
Input Volume	283	614	79	927	200	103	2206
% of Volume	101	102	92	99	101	106	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.1	0.0	0.0	0.0	0.0	0.2
Denied Del/Veh (s)	0.7	2.2	0.0	0.0	0.0	0.0	0.2
Total Delay (hr)	4.9	0.4	2.2	3.7	2.0	0.8	14.0
Total Del/Veh (s)	48.3	7.4	12.2	12.4	68.0	7.7	18.2
Vehicles Entered	356	196	645	1078	105	377	2757
Vehicles Exited	358	196	641	1076	105	371	2747
Hourly Exit Rate	358	196	641	1076	105	371	2747
Input Volume	357	193	649	1085	115	365	2764
% of Volume	100	102	99	99	91	102	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.0	0.1	1.7	0.1	1.7	1.2	0.2	0.2	0.0	0.0	0.0
Total Delay (hr)	4.5	0.7	0.5	0.1	0.8	0.6	3.1	7.7	0.1	1.3	1.3	0.2
Total Del/Veh (s)	60.1	37.2	9.8	44.0	43.9	17.4	40.5	21.0	19.6	47.4	14.0	4.2
Vehicles Entered	260	66	165	5	61	128	270	1297	17	99	338	134
Vehicles Exited	261	65	164	5	60	127	273	1302	17	97	334	135
Hourly Exit Rate	261	65	164	5	60	127	273	1302	17	97	334	135
Input Volume	269	65	163	5	63	133	274	1301	18	96	333	133
% of Volume	97	100	101	100	95	95	100	100	93	101	100	101
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.3
Total Delay (hr)	20.8
Total Del/Veh (s)	25.9
Vehicles Entered	2840
Vehicles Exited	2840
Hourly Exit Rate	2840
Input Volume	2852
% of Volume	100
Denied Entry Before	0
Denied Entry After	0

8: Eagle Creek Boulevard & Site Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.0	1.0	0.8	0.0	0.1	0.0	1.8
Total Del/Veh (s)	8.4	8.7	8.4	5.8	5.3	2.9	8.3
Vehicles Entered	2	384	329	11	38	12	776
Vehicles Exited	2	382	330	10	38	12	774
Hourly Exit Rate	2	382	330	10	38	12	774
Input Volume	2	387	320	9	39	14	772
% of Volume	100	99	103	108	97	84	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1		0.1	0.1	0.0	0.1	0.1	0.1	0.1
Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.4	6.4		5.7	2.1	0.2	1.7	0.1	0.2	2.8
Vehicles Entered	48	4	0	5	19	16	5	3	12	112
Vehicles Exited	48	4	0	5	19	17	5	3	12	113
Hourly Exit Rate	48	4	0	5	19	17	5	3	12	113
Input Volume	52	6	1	4	19	16	7	3	10	119
% of Volume	92	70	0	118	99	105	74	92	117	95
Denied Entry Before	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0

Total Zone Performance

Denied Delay (hr)	1.2
Denied Del/Veh (s)	1.0
Total Delay (hr)	63.7
Total Del/Veh (s)	1163.4
Vehicles Entered	4384
Vehicles Exited	45
Hourly Exit Rate	45
Input Volume	12083
% of Volume	0
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	71	64
Average Queue (ft)	35	8
95th Queue (ft)	60	36
Link Distance (ft)	1213	1753
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	118	157	57	145	97	156	149	145	165	54	63	82
Average Queue (ft)	60	75	22	61	40	69	65	75	66	16	20	24
95th Queue (ft)	111	131	45	115	83	130	123	126	121	41	50	64
Link Distance (ft)		843		1117	1117		609	609			1753	1753
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250			350			225	325		
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB
Directions Served	R
Maximum Queue (ft)	55
Average Queue (ft)	14
95th Queue (ft)	40
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	147	712	424	67	86	220	256	132	74	57
Average Queue (ft)	57	216	295	15	39	138	170	55	24	21
95th Queue (ft)	124	606	462	45	72	205	245	106	60	45
Link Distance (ft)		1243				649	649	609	609	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	400		400	300	300					550
Storage Blk Time (%)		0	11							
Queuing Penalty (veh)		0	31							

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	412	246	122	148	193	212	103	106	89	99
Average Queue (ft)	234	59	57	72	88	107	37	48	38	45
95th Queue (ft)	369	147	109	126	155	181	78	89	84	89
Link Distance (ft)	1635		649	649	649				649	649
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)		450				400	200	200		
Storage Blk Time (%)	0	0								
Queuing Penalty (veh)	0	0								

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	R	L
Maximum Queue (ft)	212	247	240	138	112	5	26	76	45	75	63	155
Average Queue (ft)	70	147	47	33	50	0	5	30	12	28	27	72
95th Queue (ft)	177	241	205	96	87	4	20	60	36	58	53	130
Link Distance (ft)			3581	3581				1965	1965			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225	225			200	450	450			300	300	400
Storage Blk Time (%)	0	5										
Queuing Penalty (veh)	0	2										

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	TR	L	L	T	T	R
Maximum Queue (ft)	170	210	306	306	59	78	92	108	47
Average Queue (ft)	97	92	172	198	17	36	29	40	10
95th Queue (ft)	148	173	272	291	45	69	73	84	33
Link Distance (ft)		2440	2440	2440			649	649	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	400				550	550			300
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 8: Eagle Creek Boulevard & Site Road

Movement	EB	EB	WB	WB	SB	SB
Directions Served	LT	T	T	TR	L	R
Maximum Queue (ft)	82	92	64	74	60	31
Average Queue (ft)	48	49	37	43	23	10
95th Queue (ft)	71	76	56	66	52	33
Link Distance (ft)	4608	4608	1221	1221	213	213
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	42	29
Average Queue (ft)	18	11
95th Queue (ft)	34	29
Link Distance (ft)	961	1598
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 33

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.2	0.1	0.1
Total Delay (hr)	0.1	0.1	0.0	0.2	0.1	0.0	0.4
Total Del/Veh (s)	9.8	4.9	4.1	2.2	0.8	0.6	1.8
Vehicles Entered	19	68	29	246	510	21	893
Vehicles Exited	19	68	29	246	510	21	893
Hourly Exit Rate	19	68	29	246	510	21	893
Input Volume	22	68	34	246	518	22	910
% of Volume	86	100	85	100	98	95	98
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.8	0.3	2.0	0.3	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.3	1.0	0.9	6.6	1.0	0.3	1.2	0.6	0.2	0.2	3.3	0.1
Total Del/Veh (s)	35.3	58.2	14.9	50.6	35.0	20.5	20.0	12.8	3.7	18.4	26.8	4.7
Vehicles Entered	28	63	218	463	97	43	207	177	195	47	436	99
Vehicles Exited	28	61	218	460	96	43	209	178	195	47	444	99
Hourly Exit Rate	28	61	218	460	96	43	209	178	195	47	444	99
Input Volume	30	60	213	463	93	49	214	176	201	50	439	101
% of Volume	93	102	102	99	104	87	98	101	97	94	101	98
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	15.7
Total Del/Veh (s)	26.9
Vehicles Entered	2073
Vehicles Exited	2078
Hourly Exit Rate	2078
Input Volume	2089
% of Volume	99
Denied Entry Before	0
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.6	0.0	0.3	0.0	0.0	0.0	0.0	0.9
Denied Del/Veh (s)	2.5	1.2	3.4	0.0	0.0	0.1	0.1	1.2
Total Delay (hr)	12.1	0.0	0.8	1.1	1.3	8.0	0.7	24.1
Total Del/Veh (s)	47.3	44.6	10.3	34.4	16.3	30.3	6.6	29.5
Vehicles Entered	912	3	288	116	283	931	358	2891
Vehicles Exited	901	3	290	116	280	943	358	2891
Hourly Exit Rate	901	3	290	116	280	943	358	2891
Input Volume	907	1	304	125	279	911	358	2885
% of Volume	99	300	95	93	100	103	100	100
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.4	2.4	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	1.7	0.7	1.2	1.9	6.3	2.0	13.9
Total Del/Veh (s)	56.1	20.5	14.3	10.8	50.3	5.2	16.5
Vehicles Entered	109	124	299	640	446	1398	3016
Vehicles Exited	109	125	295	633	446	1393	3001
Hourly Exit Rate	109	125	295	633	446	1393	3001
Input Volume	108	131	303	625	431	1387	2985
% of Volume	101	96	97	101	103	100	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.5	0.1	0.5	1.9	0.1	1.9	1.7	0.2	0.1	0.0	0.0	0.0
Total Delay (hr)	3.5	1.3	2.8	0.4	1.5	0.6	3.2	3.0	0.1	2.3	6.2	0.5
Total Del/Veh (s)	58.2	44.8	28.5	59.4	50.8	11.1	55.4	20.1	14.6	39.4	20.8	7.0
Vehicles Entered	205	102	335	25	106	198	204	524	31	210	1073	248
Vehicles Exited	208	101	338	26	107	195	204	527	31	211	1072	249
Hourly Exit Rate	208	101	338	26	107	195	204	527	31	211	1072	249
Input Volume	203	102	321	20	102	193	212	524	32	218	1066	247
% of Volume	103	99	105	128	105	101	96	101	98	97	101	101
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.4
Total Delay (hr)	25.5
Total Del/Veh (s)	27.7
Vehicles Entered	3261
Vehicles Exited	3269
Hourly Exit Rate	3269
Input Volume	3240
% of Volume	101
Denied Entry Before	0
Denied Entry After	0

8: Eagle Creek Boulevard & Site Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0		0.0	0.0
Total Delay (hr)	0.0	0.3	0.3	0.0	0.1	0.0	0.0	0.8
Total Del/Veh (s)	6.8	2.9	2.3	2.2	12.2		4.4	2.9
Vehicles Entered	6	410	488	33	23	0	8	968
Vehicles Exited	6	410	488	33	23	0	8	968
Hourly Exit Rate	6	410	488	33	23	0	8	968
Input Volume	7	390	482	35	21	1	7	944
% of Volume	83	105	101	94	111	0	110	103
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard Performance by movement

Movement	EBL	EBT	WBT	WBR	NBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.4	5.9	6.5	2.1	0.4	1.9	0.4	0.2	2.2
Vehicles Entered	16	14	13	21	6	29	14	49	162
Vehicles Exited	16	14	13	22	6	29	14	49	163
Hourly Exit Rate	16	14	13	22	6	29	14	49	163
Input Volume	17	12	16	21	8	33	14	46	167
% of Volume	94	114	81	104	80	88	102	106	98
Denied Entry Before	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0

Total Zone Performance

Denied Delay (hr)	1.6
Denied Del/Veh (s)	1.2
Total Delay (hr)	80.5
Total Del/Veh (s)	1361.1
Vehicles Entered	4863
Vehicles Exited	39
Hourly Exit Rate	39
Input Volume	13220
% of Volume	0
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	72	43
Average Queue (ft)	35	10
95th Queue (ft)	61	34
Link Distance (ft)	1213	1753
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	50	110	152	502	174	150	64	77	63	74	203	223
Average Queue (ft)	19	47	67	317	71	72	15	31	24	23	98	108
95th Queue (ft)	46	94	124	474	142	128	47	66	46	56	169	191
Link Distance (ft)		843		1117	1117		609	609			1753	1753
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250			350			225	325		
Storage Blk Time (%)												0
Queuing Penalty (veh)												0

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB
Directions Served	R
Maximum Queue (ft)	71
Average Queue (ft)	28
95th Queue (ft)	56
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	422	595	373	106	100	112	145	396	300	138
Average Queue (ft)	290	338	89	46	53	54	63	273	172	55
95th Queue (ft)	402	497	261	93	92	102	118	385	265	106
Link Distance (ft)		1243				649	649	609	609	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	400		400	300	300					550
Storage Blk Time (%)	0	2	0							
Queuing Penalty (veh)	0	12	0							

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	189	149	155	113	200	197	211	224	479	375
Average Queue (ft)	92	62	67	31	79	83	105	123	50	28
95th Queue (ft)	166	116	147	81	181	187	221	232	253	178
Link Distance (ft)	1635		649	649	649				649	649
Upstream Blk Time (%)									0	0
Queuing Penalty (veh)									0	0
Storage Bay Dist (ft)		450				400	200	200		
Storage Blk Time (%)							3	7	0	
Queuing Penalty (veh)							23	47	0	

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	R	L
Maximum Queue (ft)	210	229	97	273	224	31	52	89	86	84	80	150
Average Queue (ft)	48	125	34	60	144	6	18	43	33	31	35	66
95th Queue (ft)	125	204	73	171	232	23	43	78	71	62	65	124
Link Distance (ft)			3581	3581				1965	1965			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225	225			200	450	450			300	300	400
Storage Blk Time (%)	0	1		0	4							
Queuing Penalty (veh)	0	0		0	2							

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	TR	L	L	T	T	R
Maximum Queue (ft)	159	137	175	195	115	146	284	288	210
Average Queue (ft)	91	50	70	103	50	73	177	180	43
95th Queue (ft)	147	108	142	178	101	124	266	276	126
Link Distance (ft)		2440	2440	2440			649	649	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	400				550	550			300
Storage Blk Time (%)								0	0
Queuing Penalty (veh)								0	0

Intersection: 8: Eagle Creek Boulevard & Site Road

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	32	52	31
Average Queue (ft)	2	19	6
95th Queue (ft)	18	46	26
Link Distance (ft)	4608	213	213
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	23	30	12
Average Queue (ft)	13	14	0
95th Queue (ft)	27	31	6
Link Distance (ft)	961	1598	1137
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 86

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.1	0.2	0.0
Total Delay (hr)	0.2	0.0	0.0	1.0	0.0	0.0	1.3
Total Del/Veh (s)	14.8	4.0	3.2	3.8	0.3	0.2	3.6
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.9	0.1	0.8	0.1	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	1.0	1.6	0.1	1.2	0.6	0.1	1.1	2.2	1.3	0.2	0.5	0.0
Total Del/Veh (s)	37.2	54.0	4.9	37.9	50.1	19.2	12.4	9.8	7.8	27.3	14.2	2.1
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	9.9
Total Del/Veh (s)	15.1
Denied Entry Before	0
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.2	0.6	0.0	0.0	0.0	0.0	0.9
Denied Del/Veh (s)	2.6	3.5	0.0	0.0	0.0	0.0	1.3
Total Delay (hr)	4.2	12.5	0.8	5.1	1.0	0.1	23.7
Total Del/Veh (s)	48.9	67.2	39.2	17.5	18.2	3.6	35.4
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.1	0.0	0.0	0.0	0.0	0.2
Denied Del/Veh (s)	0.7	2.2	0.0	0.0	0.0	0.0	0.2
Total Delay (hr)	6.7	0.4	2.7	4.7	1.7	0.9	17.2
Total Del/Veh (s)	57.8	7.8	13.9	14.5	67.7	8.1	20.7
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.0	0.2	1.1	0.1	1.6	1.3	0.2	0.2	0.0	0.0	0.0
Total Delay (hr)	3.8	0.7	0.4	0.1	0.9	0.8	3.6	9.6	0.1	1.3	1.5	0.2
Total Del/Veh (s)	51.5	33.9	9.3	33.2	44.1	20.0	41.1	23.7	21.8	46.2	14.4	4.5
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.3
Total Delay (hr)	23.0
Total Del/Veh (s)	26.3
Denied Entry Before	0
Denied Entry After	0

6: Vierling Drive & 12th Ave E Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4
Total Del/Veh (s)	0.2	0.1	2.4	0.5	6.5	2.8	4.5	2.1
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

7: Vierling Drive & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0
Total Delay (hr)	0.2	0.8	0.0	0.2	1.0	0.1	0.0	0.2	0.2	0.0	0.1	0.0
Total Del/Veh (s)	8.3	8.6	4.9	9.9	9.0	10.5	6.2	8.2	5.3	6.4	7.3	3.4
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

7: Vierling Drive & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	2.9
Total Del/Veh (s)	8.2
Denied Entry Before	0
Denied Entry After	0

9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard Performance by movement

Movement	EBL	EBT	WBT	WBR	NBT	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.5	6.3	5.0	2.6	0.3	1.8	0.0	2.3
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

Total Network Performance

Denied Delay (hr)	1.4
Denied Del/Veh (s)	1.0
Total Delay (hr)	81.4
Total Del/Veh (s)	55.7
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB	NB
Directions Served	LR	LT	T
Maximum Queue (ft)	61	62	9
Average Queue (ft)	32	9	0
95th Queue (ft)	59	34	0
Link Distance (ft)	1213	1748	1748
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	L	TR	L	T	T	R	L	T
Maximum Queue (ft)	127	180	46	109	90	99	170	136	144	186	60	74
Average Queue (ft)	54	71	18	42	31	38	80	68	78	66	17	21
95th Queue (ft)	104	143	37	84	73	85	141	125	128	126	43	55
Link Distance (ft)		844		1117	1117	1117		604	604			1748
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250				350			225	325	
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	92	54
Average Queue (ft)	30	14
95th Queue (ft)	73	42
Link Distance (ft)	1748	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	241	1108	425	58	84	245	274	127	90	56
Average Queue (ft)	73	423	359	15	42	163	195	56	27	22
95th Queue (ft)	160	1067	489	45	74	228	267	106	64	45
Link Distance (ft)		1243				649	649	604	604	
Upstream Blk Time (%)		2								
Queuing Penalty (veh)		0								
Storage Bay Dist (ft)	400		400	300	300					550
Storage Blk Time (%)		0	24							
Queuing Penalty (veh)		1	75							

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	493	326	158	172	202	220	67	83	93	99
Average Queue (ft)	291	67	75	83	108	126	27	45	45	53
95th Queue (ft)	447	200	134	145	185	202	62	78	88	91
Link Distance (ft)	1635		649	649	649				649	649
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)		450				400	200	200		
Storage Blk Time (%)	1	0								
Queuing Penalty (veh)	3	0								

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	R	L
Maximum Queue (ft)	228	245	166	72	96	11	38	71	59	81	68	152
Average Queue (ft)	51	143	23	30	48	1	4	29	16	33	32	84
95th Queue (ft)	126	221	91	64	82	7	22	55	43	64	60	144
Link Distance (ft)			3581	3581				1965	1965			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225	225			200	450	450			300	300	400
Storage Blk Time (%)	0	2										
Queuing Penalty (veh)	0	1										

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	TR	L	L	T	T	R
Maximum Queue (ft)	168	245	338	383	57	86	103	111	36
Average Queue (ft)	109	110	203	230	18	36	32	43	9
95th Queue (ft)	159	194	308	326	47	72	75	91	27
Link Distance (ft)		2440	2440	2440			649	649	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	400				550	550			300
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 6: Vierling Drive & 12th Ave E

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	4	42	35	65
Average Queue (ft)	0	3	16	35
95th Queue (ft)	3	20	42	50
Link Distance (ft)	1179	1947	566	566
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Vierling Drive & Eagle Creek Boulevard

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	TR	LT	TR
Maximum Queue (ft)	101	88	114	115	46	73	42	60
Average Queue (ft)	56	49	53	60	21	46	21	23
95th Queue (ft)	86	75	85	91	45	71	45	50
Link Distance (ft)	1239	1239	3581	3581	1625	1625	566	566
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	44	39
Average Queue (ft)	20	15
95th Queue (ft)	38	39
Link Distance (ft)	963	1613
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 79

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.2	0.2	0.1
Total Delay (hr)	0.0	0.1	0.1	0.1	0.1	0.0	0.4
Total Del/Veh (s)	9.6	4.5	5.1	1.2	0.8	0.5	1.5
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	2.3	0.4	2.3	0.2	0.2	0.2	0.0	0.0	0.1	0.1	0.0	0.1
Total Delay (hr)	0.3	1.1	0.8	5.5	1.1	0.3	1.4	0.6	0.2	0.3	3.2	0.1
Total Del/Veh (s)	35.6	57.0	13.3	38.1	36.7	22.3	23.0	11.4	3.9	18.9	22.9	4.5
Denied Entry Before	0	0	1	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	15.0
Total Del/Veh (s)	23.5
Denied Entry Before	1
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.9	0.0	0.3	0.0	0.0	0.1	0.0	1.3
Denied Del/Veh (s)	3.2		3.9	0.0	0.0	0.4	0.2	1.5
Total Delay (hr)	14.2	0.0	1.2	1.2	1.5	10.1	0.8	29.1
Total Del/Veh (s)	51.8		13.7	34.0	16.6	35.9	7.8	33.3
Denied Entry Before	1	0	0	0	0	0	0	1
Denied Entry After	0	0	0	0	0	0	0	0

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.4	3.4	0.0	0.0	0.0	0.0	0.2
Total Delay (hr)	1.9	0.8	1.4	2.3	6.0	2.4	14.9
Total Del/Veh (s)	55.7	21.4	14.4	12.4	45.8	5.8	16.5
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.5	0.0	0.6	1.9	0.1	1.9	1.6	0.2	0.2	0.0	0.0	0.0
Total Delay (hr)	3.5	1.4	3.5	0.4	1.7	0.7	3.8	3.3	0.2	2.8	7.6	0.5
Total Del/Veh (s)	59.3	43.6	33.6	58.1	52.9	11.5	56.6	20.5	17.6	40.8	22.8	7.4
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.4
Total Delay (hr)	29.4
Total Del/Veh (s)	29.4
Denied Entry Before	0
Denied Entry After	0

6: Vierling Drive & 12th Ave E Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.3	0.0	0.2	0.0	0.1	0.6
Total Del/Veh (s)	0.6	0.3	4.2	0.6	12.0	1.8	3.8	3.2
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

7: Vierling Drive & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0
Total Delay (hr)	0.1	1.0	0.0	0.6	1.5	0.0	0.0	0.1	0.1	0.1	0.4	0.3
Total Del/Veh (s)	9.4	10.3	6.5	13.2	12.4	10.2	8.2	9.9	4.9	8.3	9.1	6.7
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

7: Vierling Drive & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	4.3
Total Del/Veh (s)	10.2
Denied Entry Before	0
Denied Entry After	0

9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard Performance by movement

Movement	EBL	EBT	WBT	WBR	NBT	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.2	5.9	6.7	2.2	0.6	1.8	0.2	1.6
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

Total Network Performance

Denied Delay (hr)	2.1
Denied Del/Veh (s)	1.4
Total Delay (hr)	99.2
Total Del/Veh (s)	60.8
Denied Entry Before	2
Denied Entry After	0

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	79	45
Average Queue (ft)	36	15
95th Queue (ft)	61	44
Link Distance (ft)	1213	1748
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	L	TR	L	T	T	R	L	T
Maximum Queue (ft)	61	119	141	287	239	184	196	57	79	67	78	203
Average Queue (ft)	19	52	58	174	143	82	85	15	28	25	26	102
95th Queue (ft)	48	99	108	251	226	159	158	44	60	52	58	174
Link Distance (ft)		844		1117	1117	1117		604	604			1748
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250				350			225	325	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	225	108
Average Queue (ft)	106	31
95th Queue (ft)	180	75
Link Distance (ft)	1748	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)	0	0
Queuing Penalty (veh)	0	0

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	424	1086	425	125	109	138	143	487	407	143
Average Queue (ft)	318	408	129	54	56	63	77	311	205	67
95th Queue (ft)	435	740	367	103	97	126	137	437	337	120
Link Distance (ft)		1243				649	649	604	604	
Upstream Blk Time (%)		1						0	0	
Queuing Penalty (veh)		0						1	0	
Storage Bay Dist (ft)	400		400	300	300					550
Storage Blk Time (%)	1	4	0							
Queuing Penalty (veh)	5	33	0							

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	188	132	185	139	242	247	211	224	579	422
Average Queue (ft)	98	64	82	37	98	104	95	111	54	36
95th Queue (ft)	164	110	172	95	210	221	210	227	301	205
Link Distance (ft)	1219		648	648	648				649	649
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									1	
Storage Bay Dist (ft)		450				400	200	200		
Storage Blk Time (%)							2	6	0	
Queuing Penalty (veh)							15	45	2	

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	R	L
Maximum Queue (ft)	180	218	135	332	225	31	51	85	88	80	73	164
Average Queue (ft)	49	127	44	85	163	4	17	46	34	34	35	81
95th Queue (ft)	124	212	98	241	252	21	41	76	71	67	66	147
Link Distance (ft)			3581	3581				1965	1965			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225	225			200	450	450			300	300	400
Storage Blk Time (%)	0	1			8							
Queuing Penalty (veh)	0	0			5							

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	TR	L	L	T	T	R
Maximum Queue (ft)	183	124	180	212	130	145	352	370	285
Average Queue (ft)	104	52	79	115	64	86	208	217	48
95th Queue (ft)	160	103	151	186	117	135	315	323	157
Link Distance (ft)		2440	2440	2440			648	648	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	400				550	550			300
Storage Blk Time (%)								1	0
Queuing Penalty (veh)								3	0

Intersection: 6: Vierling Drive & 12th Ave E

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	12	96	66	49
Average Queue (ft)	1	31	28	25
95th Queue (ft)	9	73	53	46
Link Distance (ft)		1947	566	566
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Vierling Drive & Eagle Creek Boulevard

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	TR	LT	TR
Maximum Queue (ft)	112	98	136	143	51	71	83	100
Average Queue (ft)	58	56	75	70	20	38	41	57
95th Queue (ft)	88	84	117	109	45	63	67	91
Link Distance (ft)	1239	1239	3581	3581	1625	1625	566	566
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	38	45
Average Queue (ft)	13	14
95th Queue (ft)	30	32
Link Distance (ft)	961	1596
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 110

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.2	0.2	0.1
Total Delay (hr)	0.3	0.0	0.0	1.0	0.0	0.0	1.4
Total Del/Veh (s)	14.5	5.2	3.8	3.7	0.4	0.1	3.8
Vehicles Entered	77	16	45	972	207	18	1335
Vehicles Exited	76	16	46	978	208	18	1342
Hourly Exit Rate	76	16	46	978	208	18	1342
Input Volume	77	16	48	983	208	18	1350
% of Volume	98	102	96	99	100	101	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.5	0.1	0.6	0.2	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	1.4	1.8	0.3	1.3	0.5	0.1	1.2	2.2	1.2	0.2	0.6	0.0
Total Del/Veh (s)	36.1	52.9	6.2	42.5	49.9	19.0	12.1	10.0	7.8	21.5	15.4	2.7
Vehicles Entered	133	119	166	107	34	27	353	805	573	30	133	62
Vehicles Exited	134	119	165	108	35	27	353	800	575	31	133	61
Hourly Exit Rate	134	119	165	108	35	27	353	800	575	31	133	61
Input Volume	135	111	160	108	40	26	362	816	601	30	136	59
% of Volume	99	107	103	100	88	103	98	98	96	102	98	103
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	10.8
Total Del/Veh (s)	15.2
Vehicles Entered	2542
Vehicles Exited	2541
Hourly Exit Rate	2541
Input Volume	2584
% of Volume	98
Denied Entry Before	0
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	5.9	11.9	0.0	0.0	0.0	0.0	17.8
Denied Del/Veh (s)	60.9	60.2	0.0	0.0	0.0	0.0	24.4
Total Delay (hr)	9.5	24.8	1.4	5.3	1.5	0.1	42.6
Total Del/Veh (s)	99.8	126.7	42.6	18.2	19.0	3.8	58.5
Vehicles Entered	338	685	112	1040	287	120	2582
Vehicles Exited	332	671	115	1033	283	119	2553
Hourly Exit Rate	332	671	115	1033	283	119	2553
Input Volume	351	706	108	1046	289	118	2619
% of Volume	95	95	106	99	98	101	97
Denied Entry Before	0	1	0	0	0	0	1
Denied Entry After	10	25	0	0	0	0	35

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.2	0.0	0.0	0.0	0.0	0.3
Denied Del/Veh (s)	0.9	2.2	0.0	0.0	0.0	0.0	0.3
Total Delay (hr)	6.9	0.7	3.3	6.0	3.1	1.1	21.1
Total Del/Veh (s)	59.5	10.0	15.8	16.7	69.2	8.9	22.9
Vehicles Entered	408	252	750	1278	161	445	3294
Vehicles Exited	408	253	744	1270	161	438	3274
Hourly Exit Rate	408	253	744	1270	161	438	3274
Input Volume	394	236	759	1255	174	460	3278
% of Volume	103	107	98	101	93	95	100
Denied Entry Before	1	0	0	0	0	0	1
Denied Entry After	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.0	0.3	1.8	0.1	1.7	1.2	0.2	0.2	0.0	0.0	0.0
Total Delay (hr)	29.7	0.7	0.7	0.1	0.8	0.9	3.9	11.8	0.2	1.2	1.8	0.3
Total Del/Veh (s)	264.3	34.8	11.5	59.4	43.2	21.5	42.8	27.8	28.2	44.1	16.7	5.4
Vehicles Entered	384	74	199	5	61	145	320	1490	23	101	381	214
Vehicles Exited	347	74	197	5	63	147	323	1499	23	100	378	214
Hourly Exit Rate	347	74	197	5	63	147	323	1499	23	100	378	214
Input Volume	375	71	205	6	69	146	324	1457	20	105	388	208
% of Volume	93	104	96	83	91	101	100	103	114	95	97	103
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.3
Total Delay (hr)	52.0
Total Del/Veh (s)	53.8
Vehicles Entered	3397
Vehicles Exited	3370
Hourly Exit Rate	3370
Input Volume	3373
% of Volume	100
Denied Entry Before	0
Denied Entry After	0

8: Eagle Creek Boulevard & Site Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	1.2	0.9	0.1	0.2	0.0	2.5
Total Del/Veh (s)	11.8	9.5	9.0	6.5	5.9	3.3	8.4
Vehicles Entered	14	432	364	76	137	42	1065
Vehicles Exited	14	436	365	76	138	42	1071
Hourly Exit Rate	14	436	365	76	138	42	1071
Input Volume	13	439	362	71	137	39	1062
% of Volume	106	99	101	107	101	108	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1		0.1	0.1	0.0	0.1	0.1	0.1	0.1
Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.6	6.4		6.3	2.4	0.4	2.1	0.1	0.1	2.2
Vehicles Entered	53	7	0	5	22	55	7	27	12	188
Vehicles Exited	54	8	0	5	22	55	7	28	12	191
Hourly Exit Rate	54	8	0	5	22	55	7	28	12	191
Input Volume	57	7	1	5	21	52	8	28	11	190
% of Volume	95	119	0	105	104	107	88	99	107	101
Denied Entry Before	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0

12: Shenandoah Drive & South Townhomes Driveway Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	7.6	4.0	2.9	0.4	0.7	0.2	1.3
Vehicles Entered	16	69	30	138	268	13	534
Vehicles Exited	16	69	30	138	268	13	534
Hourly Exit Rate	16	69	30	138	268	13	534
Input Volume	21	66	35	137	265	11	534
% of Volume	77	105	86	101	101	116	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

14: Retail Driveway 3 & Shenandoah Drive Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	0.5	0.2	3.1	0.6	7.7	3.5	1.2
Vehicles Entered	237	36	39	163	20	28	523
Vehicles Exited	236	37	39	163	20	28	523
Hourly Exit Rate	236	37	39	163	20	28	523
Input Volume	230	37	42	165	21	27	522
% of Volume	102	100	92	99	96	105	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

15: Retail Driveway 4 & Shenandoah Drive Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	0.6	0.2	3.0	0.7	5.8	3.4	1.1
Vehicles Entered	229	34	40	197	8	36	544
Vehicles Exited	230	34	40	196	7	36	543
Hourly Exit Rate	230	34	40	196	7	36	543
Input Volume	220	37	42	196	12	37	544
% of Volume	104	92	95	100	57	97	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

16: Site Road & Retail Driveway 1/Retail Driveway 2 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	5.3	2.7	5.7	2.7	2.3	0.5	0.3	0.2	0.1	1.2
Vehicles Entered	6	31	17	19	22	50	21	132	20	318
Vehicles Exited	6	31	17	19	21	50	21	132	20	317
Hourly Exit Rate	6	31	17	19	21	50	21	132	20	317
Input Volume	9	28	19	18	20	45	20	130	21	308
% of Volume	65	112	91	107	106	110	106	102	96	103
Denied Entry Before	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0

Total Zone Performance

Denied Delay (hr)	18.5
Denied Del/Veh (s)	12.4
Total Delay (hr)	131.2
Total Del/Veh (s)	1373.4
Vehicles Entered	5321
Vehicles Exited	68
Hourly Exit Rate	68
Input Volume	16364
% of Volume	0
Denied Entry Before	2
Denied Entry After	35

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	100	44
Average Queue (ft)	42	10
95th Queue (ft)	77	37
Link Distance (ft)	1213	1753
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	165	183	79	147	105	179	167	155	145	57	76	78
Average Queue (ft)	76	86	35	68	34	86	70	76	67	17	26	25
95th Queue (ft)	135	158	62	126	77	151	131	131	125	42	59	59
Link Distance (ft)		843		1117	1117		609	609			1753	1753
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250			350			225	325		
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB
Directions Served	R
Maximum Queue (ft)	67
Average Queue (ft)	20
95th Queue (ft)	47
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	235	1304	425	87	108	230	262	180	98	54
Average Queue (ft)	85	1035	412	35	53	169	194	83	35	22
95th Queue (ft)	171	1688	485	76	90	233	266	147	77	44
Link Distance (ft)		1243				649	649	609	609	
Upstream Blk Time (%)		42								
Queuing Penalty (veh)		0								
Storage Bay Dist (ft)	400		400	300	300					550
Storage Blk Time (%)		1	53							
Queuing Penalty (veh)		5	185							

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	554	334	178	187	324	258	120	126	110	101
Average Queue (ft)	296	79	88	96	134	150	61	73	50	59
95th Queue (ft)	468	211	157	168	240	231	106	118	94	99
Link Distance (ft)	1635		649	649	649				649	649
Upstream Blk Time (%)					0					
Queuing Penalty (veh)					0					
Storage Bay Dist (ft)		450				400	200	200		
Storage Blk Time (%)	2	0								
Queuing Penalty (veh)	4	0								

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	R	L
Maximum Queue (ft)	237	250	1238	1052	136	15	34	68	54	88	76	166
Average Queue (ft)	193	241	719	144	56	1	5	28	14	34	33	88
95th Queue (ft)	314	282	1606	729	100	7	23	57	41	68	65	151
Link Distance (ft)			3581	3581				1965	1965			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225	225			200	450	450			300	300	400
Storage Blk Time (%)	1	66	0		0							
Queuing Penalty (veh)	0	23	0		0							

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	TR	L	L	T	T	R
Maximum Queue (ft)	200	316	416	432	55	78	110	112	59
Average Queue (ft)	110	148	236	259	16	38	42	52	17
95th Queue (ft)	167	269	364	378	43	68	91	95	43
Link Distance (ft)		2440	2440	2440			649	649	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	400				550	550			300
Storage Blk Time (%)		0							
Queuing Penalty (veh)		0							

Intersection: 8: Eagle Creek Boulevard & Site Road

Movement	EB	EB	WB	WB	SB	SB
Directions Served	LT	T	T	TR	L	R
Maximum Queue (ft)	80	73	60	79	70	57
Average Queue (ft)	52	51	40	49	39	25
95th Queue (ft)	73	72	59	72	61	53
Link Distance (ft)	4608	4608	1221	1221	213	213
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	44	25	12
Average Queue (ft)	18	12	0
95th Queue (ft)	37	28	6
Link Distance (ft)	961	1598	1137
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: Shenandoah Drive & South Townhomes Driveway

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	60	57
Average Queue (ft)	32	7
95th Queue (ft)	50	35
Link Distance (ft)	568	472
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Retail Driveway 3 & Shenandoah Drive

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	52	47
Average Queue (ft)	10	24
95th Queue (ft)	38	48
Link Distance (ft)	458	424
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Retail Driveway 4 & Shenandoah Drive

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	52	63
Average Queue (ft)	9	26
95th Queue (ft)	35	51
Link Distance (ft)	281	394
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: Site Road & Retail Driveway 1/Retail Driveway 2

Movement	EB	WB	NB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	46	36	30
Average Queue (ft)	22	22	4
95th Queue (ft)	44	45	20
Link Distance (ft)	501	254	213
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 219

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.1	0.0	0.2	0.2	0.1
Total Delay (hr)	0.1	0.1	0.1	0.2	0.2	0.0	0.6
Total Del/Veh (s)	11.3	5.8	5.6	2.3	1.0	0.9	2.2
Vehicles Entered	30	75	36	276	593	39	1049
Vehicles Exited	30	75	36	275	593	38	1047
Hourly Exit Rate	30	75	36	275	593	38	1047
Input Volume	29	75	37	279	593	37	1050
% of Volume	103	100	98	98	100	103	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	2.1	0.4	1.8	0.3	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.4	1.1	1.9	11.0	1.0	0.3	2.5	0.7	0.3	0.4	5.0	0.2
Total Del/Veh (s)	33.7	60.2	23.9	76.6	35.6	22.6	30.2	13.2	4.2	24.0	35.7	6.1
Vehicles Entered	42	64	280	512	100	48	293	200	223	58	490	125
Vehicles Exited	43	62	280	504	101	48	292	201	224	58	496	125
Hourly Exit Rate	43	62	280	504	101	48	292	201	224	58	496	125
Input Volume	42	67	264	511	103	54	292	197	221	55	487	132
% of Volume	102	92	106	99	98	89	100	102	101	106	102	95
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	24.8
Total Del/Veh (s)	36.1
Vehicles Entered	2435
Vehicles Exited	2434
Hourly Exit Rate	2434
Input Volume	2424
% of Volume	100
Denied Entry Before	0
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	2.4	0.0	0.9	0.0	0.0	0.1	0.0	3.5
Denied Del/Veh (s)	8.2	2.1	9.0	0.0	0.0	0.4	0.3	3.8
Total Delay (hr)	18.5	0.0	2.3	1.3	1.6	10.2	0.9	34.8
Total Del/Veh (s)	62.1	69.2	21.8	31.0	16.9	34.4	7.8	36.8
Vehicles Entered	1059	1	376	147	328	1050	398	3359
Vehicles Exited	1046	1	374	147	331	1062	398	3359
Hourly Exit Rate	1046	1	374	147	331	1062	398	3359
Input Volume	1048	1	376	146	323	1032	397	3324
% of Volume	100	100	99	101	102	103	100	101
Denied Entry Before	1	0	1	0	0	0	0	2
Denied Entry After	4	0	2	0	0	0	0	6

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.4	2.4	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	2.0	1.3	1.5	2.6	6.7	2.8	17.0
Total Del/Veh (s)	57.6	27.8	15.4	13.0	46.6	6.2	17.4
Vehicles Entered	121	168	361	721	507	1601	3479
Vehicles Exited	126	172	358	712	507	1601	3476
Hourly Exit Rate	126	172	358	712	507	1601	3476
Input Volume	120	165	358	713	495	1586	3437
% of Volume	105	104	100	100	102	101	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.5	0.0	0.5	2.0	0.1	1.9	1.6	0.2	0.2	0.0	0.0	0.0
Total Delay (hr)	4.7	1.4	3.3	0.4	1.7	0.8	3.8	3.7	0.2	2.7	8.6	1.0
Total Del/Veh (s)	64.5	41.9	32.1	58.3	51.2	13.7	54.4	21.7	16.2	41.7	25.5	10.2
Vehicles Entered	251	116	351	21	115	213	242	607	36	227	1197	362
Vehicles Exited	253	117	356	20	116	212	247	606	36	225	1195	364
Hourly Exit Rate	253	117	356	20	116	212	247	606	36	225	1195	364
Input Volume	253	112	364	22	112	213	253	595	35	240	1184	340
% of Volume	100	104	98	90	104	100	98	102	104	94	101	107
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.3
Total Delay (hr)	32.2
Total Del/Veh (s)	30.4
Vehicles Entered	3738
Vehicles Exited	3747
Hourly Exit Rate	3747
Input Volume	3724
% of Volume	101
Denied Entry Before	0
Denied Entry After	0

8: Eagle Creek Boulevard & Site Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.1	0.4	0.4	0.1	0.4	0.0	0.0	1.5
Total Del/Veh (s)	9.5	3.2	2.7	2.9	18.3	0.2	4.3	4.2
Vehicles Entered	43	421	514	138	83	1	31	1231
Vehicles Exited	43	422	514	139	82	1	31	1232
Hourly Exit Rate	43	422	514	139	82	1	31	1232
Input Volume	39	424	517	126	79	0	36	1222
% of Volume	110	99	99	111	103	400	86	101
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0

9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard Performance by movement

Movement	EBL	EBT	WBT	WBR	NBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.5	6.2	6.8	2.4	0.6	2.0	0.5	0.3	2.0
Vehicles Entered	19	13	18	22	24	42	42	55	235
Vehicles Exited	19	13	18	22	24	43	43	54	236
Hourly Exit Rate	19	13	18	22	24	43	43	54	236
Input Volume	19	13	18	23	22	36	42	50	223
% of Volume	99	102	100	97	109	119	102	108	106
Denied Entry Before	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0

12: Shenandoah Drive & South Townhomes Driveway Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.1	0.1	0.1	0.0	0.3
Total Del/Veh (s)	10.2	4.1	3.2	1.0	0.7	0.6	1.4
Vehicles Entered	11	39	70	350	256	19	745
Vehicles Exited	11	39	71	349	255	19	744
Hourly Exit Rate	11	39	71	349	255	19	744
Input Volume	10	37	74	343	259	17	740
% of Volume	107	105	96	102	98	110	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

14: Retail Driveway 3 & Shenandoah Drive Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.1	0.1	0.0	0.2
Total Del/Veh (s)	0.4	0.2	2.9	0.6	7.6	3.3	1.0
Vehicles Entered	238	31	22	320	33	12	656
Vehicles Exited	237	31	22	321	33	12	656
Hourly Exit Rate	237	31	22	321	33	12	656
Input Volume	238	32	28	322	34	11	665
% of Volume	100	97	79	100	97	107	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

15: Retail Driveway 4 & Shenandoah Drive Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.1	0.1	0.0	0.2
Total Del/Veh (s)	0.5	0.3	3.1	0.7	8.4	4.3	1.2
Vehicles Entered	219	30	27	310	33	14	633
Vehicles Exited	220	29	27	310	33	14	633
Hourly Exit Rate	220	29	27	310	33	14	633
Input Volume	218	31	28	317	33	15	642
% of Volume	101	94	97	98	100	92	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

16: Site Road & Retail Driveway 1/Retail Driveway 2 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.6	2.6	5.4	2.5	1.9	0.4	0.3	0.2	0.1	1.2
Vehicles Entered	4	24	34	9	21	108	53	57	17	327
Vehicles Exited	4	24	34	9	21	107	53	57	17	326
Hourly Exit Rate	4	24	34	9	21	107	53	57	17	326
Input Volume	4	21	36	7	23	99	43	58	14	305
% of Volume	100	116	94	124	92	108	123	99	119	107
Denied Entry Before	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0

Total Zone Performance

Denied Delay (hr)	4.3
Denied Del/Veh (s)	2.7
Total Delay (hr)	111.8
Total Del/Veh (s)	1397.9
Vehicles Entered	5829
Vehicles Exited	59
Hourly Exit Rate	59
Input Volume	17756
% of Volume	0
Denied Entry Before	2
Denied Entry After	6

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	84	56	4
Average Queue (ft)	41	14	0
95th Queue (ft)	73	44	0
Link Distance (ft)	1213	1753	1703
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	63	202	250	802	281	274	61	78	65	65	266	301
Average Queue (ft)	27	55	107	450	88	124	17	33	29	28	131	137
95th Queue (ft)	56	134	200	748	219	219	47	71	55	56	230	235
Link Distance (ft)		843		1117	1117		609	609			1753	1753
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250			350			225	325		
Storage Blk Time (%)			1								0	1
Queuing Penalty (veh)			1								0	1

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB
Directions Served	R
Maximum Queue (ft)	193
Average Queue (ft)	42
95th Queue (ft)	111
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	425	1032	425	116	111	166	161	517	476	141
Average Queue (ft)	367	516	203	55	63	75	71	315	216	65
95th Queue (ft)	466	898	480	104	107	134	136	450	361	119
Link Distance (ft)		1243				649	649	609	609	
Upstream Blk Time (%)		1						0	0	
Queuing Penalty (veh)		0						2	1	
Storage Bay Dist (ft)	400		400	300	300					550
Storage Blk Time (%)	1	8	0						0	
Queuing Penalty (veh)	9	74	1						0	

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	218	211	201	130	246	257	211	223	498	394
Average Queue (ft)	101	87	92	42	110	111	110	120	69	39
95th Queue (ft)	175	165	185	107	228	230	228	236	312	209
Link Distance (ft)	1635		649	649	649				649	649
Upstream Blk Time (%)									0	
Queuing Penalty (veh)									1	
Storage Bay Dist (ft)		450				400	200	200		
Storage Blk Time (%)							3	7	0	
Queuing Penalty (veh)							24	55	0	

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	R	L
Maximum Queue (ft)	236	248	295	311	225	27	47	89	87	96	86	162
Average Queue (ft)	65	155	60	83	164	3	16	48	34	36	39	83
95th Queue (ft)	167	248	191	227	248	17	40	84	75	71	73	144
Link Distance (ft)			3581	3581				1965	1965			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225	225			200	450	450			300	300	400
Storage Blk Time (%)	0	5			8							
Queuing Penalty (veh)	0	3			4							

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	TR	L	L	T	T	R
Maximum Queue (ft)	167	126	180	213	127	149	343	359	279
Average Queue (ft)	103	56	87	117	58	83	230	230	85
95th Queue (ft)	158	111	159	187	110	130	323	322	211
Link Distance (ft)		2440	2440	2440			649	649	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	400				550	550			300
Storage Blk Time (%)								1	0
Queuing Penalty (veh)								3	0

Intersection: 8: Eagle Creek Boulevard & Site Road

Movement	EB	WB	SB	SB
Directions Served	LT	TR	L	R
Maximum Queue (ft)	61	10	99	48
Average Queue (ft)	20	0	44	20
95th Queue (ft)	56	7	83	47
Link Distance (ft)	4608	1221	213	213
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard

Movement	EB	WB	SB	SB
Directions Served	LTR	LTR	LT	R
Maximum Queue (ft)	27	43	18	4
Average Queue (ft)	12	15	1	0
95th Queue (ft)	27	34	10	3
Link Distance (ft)	961	1598	1137	1137
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: Shenandoah Drive & South Townhomes Driveway

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	69	72
Average Queue (ft)	28	19
95th Queue (ft)	57	55
Link Distance (ft)	568	472
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Retail Driveway 3 & Shenandoah Drive

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	48	53
Average Queue (ft)	6	25
95th Queue (ft)	27	48
Link Distance (ft)	458	424
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Retail Driveway 4 & Shenandoah Drive

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	48	54
Average Queue (ft)	7	27
95th Queue (ft)	33	50
Link Distance (ft)	281	394
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: Site Road & Retail Driveway 1/Retail Driveway 2

Movement	EB	WB	NB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	29	59	29
Average Queue (ft)	17	24	2
95th Queue (ft)	39	51	15
Link Distance (ft)	501	254	213
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 180

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.4	0.0	0.1	1.1	0.0	0.0	1.6
Total Del/Veh (s)	16.6	7.1	4.2	4.1	0.4	0.2	4.2
Vehicles Entered	75	13	55	982	218	18	1361
Vehicles Exited	75	13	55	989	217	18	1367
Hourly Exit Rate	75	13	55	989	217	18	1367
Input Volume	77	16	48	983	208	18	1350
% of Volume	97	83	115	101	104	101	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.6	0.0	0.7	0.2	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	1.4	1.3	0.2	1.5	0.6	0.2	1.3	2.3	1.5	0.2	0.5	0.0
Total Del/Veh (s)	40.7	43.4	5.6	50.8	51.8	20.4	12.6	10.0	8.9	25.3	13.1	2.8
Vehicles Entered	126	108	145	105	41	30	361	836	595	33	139	59
Vehicles Exited	127	108	144	105	41	29	360	837	595	33	140	59
Hourly Exit Rate	127	108	144	105	41	29	360	837	595	33	140	59
Input Volume	135	111	160	108	40	26	362	816	601	30	136	59
% of Volume	94	98	90	97	102	110	99	103	99	109	103	100
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	11.2
Total Del/Veh (s)	15.4
Vehicles Entered	2578
Vehicles Exited	2578
Hourly Exit Rate	2578
Input Volume	2584
% of Volume	100
Denied Entry Before	0
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.2	0.1	0.0	0.0	0.0	0.0	0.3
Denied Del/Veh (s)	2.2	0.5	0.0	0.0	0.0	0.0	0.4
Total Delay (hr)	3.4	3.8	1.1	5.2	1.4	0.1	14.9
Total Del/Veh (s)	33.7	18.3	35.6	18.0	17.9	3.2	20.3
Vehicles Entered	354	725	106	1039	280	113	2617
Vehicles Exited	357	733	107	1034	277	114	2622
Hourly Exit Rate	357	733	107	1034	277	114	2622
Input Volume	351	706	108	1046	289	118	2619
% of Volume	102	104	99	99	96	96	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.1	0.1	0.0	0.0	0.0	0.0	0.2
Denied Del/Veh (s)	0.8	2.2	0.0	0.0	0.0	0.0	0.3
Total Delay (hr)	4.3	0.5	5.7	6.8	3.2	0.9	21.4
Total Del/Veh (s)	38.2	8.1	27.2	19.1	66.7	6.9	23.3
Vehicles Entered	401	234	750	1267	168	461	3281
Vehicles Exited	403	233	741	1262	171	456	3266
Hourly Exit Rate	403	233	741	1262	171	456	3266
Input Volume	394	236	759	1255	174	460	3278
% of Volume	102	99	98	101	98	99	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.0	0.2	2.0	0.1	1.7	1.2	0.2	0.3	0.0	0.0	0.0
Total Delay (hr)	7.3	0.8	0.7	0.1	0.8	0.9	4.0	12.0	0.2	1.2	1.9	0.3
Total Del/Veh (s)	67.5	36.0	10.9	55.3	46.3	21.1	44.7	29.0	31.8	42.6	17.3	5.5
Vehicles Entered	376	75	209	6	64	150	316	1452	18	99	389	207
Vehicles Exited	369	77	210	6	64	149	318	1463	19	95	386	207
Hourly Exit Rate	369	77	210	6	64	149	318	1463	19	95	386	207
Input Volume	375	71	205	6	69	146	324	1457	20	105	388	208
% of Volume	98	108	103	100	92	102	98	100	94	90	100	100
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.3
Total Delay (hr)	30.1
Total Del/Veh (s)	31.5
Vehicles Entered	3361
Vehicles Exited	3363
Hourly Exit Rate	3363
Input Volume	3373
% of Volume	100
Denied Entry Before	0
Denied Entry After	0

8: Eagle Creek Boulevard & Site Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.0	1.2	0.9	0.1	0.2	0.0	2.5
Total Del/Veh (s)	10.9	9.5	8.8	6.5	5.8	3.7	8.4
Vehicles Entered	13	450	349	73	129	38	1052
Vehicles Exited	13	452	348	73	130	38	1054
Hourly Exit Rate	13	452	348	73	130	38	1054
Input Volume	13	439	362	71	137	39	1062
% of Volume	98	103	96	103	95	97	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.7	6.1	2.3	5.9	2.5	0.4	1.7	0.1	0.0	2.3
Vehicles Entered	55	7	1	5	20	46	8	30	9	181
Vehicles Exited	54	7	1	5	20	45	8	30	9	179
Hourly Exit Rate	54	7	1	5	20	45	8	30	9	179
Input Volume	57	7	1	5	21	52	8	28	11	190
% of Volume	95	104	100	105	94	87	100	106	80	94
Denied Entry Before	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0

12: Shenandoah Drive & South Townhomes Driveway Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	7.8	4.1	2.9	0.5	0.6	0.5	1.5
Vehicles Entered	21	64	35	132	252	12	516
Vehicles Exited	21	64	36	130	253	12	516
Hourly Exit Rate	21	64	36	130	253	12	516
Input Volume	21	66	35	137	265	11	534
% of Volume	101	97	103	95	96	107	97
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

14: Retail Driveway 3 & Shenandoah Drive Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	0.5	0.2	3.2	0.7	7.3	3.4	1.1
Vehicles Entered	225	38	39	164	18	22	506
Vehicles Exited	225	38	39	163	18	22	505
Hourly Exit Rate	225	38	39	163	18	22	505
Input Volume	230	37	42	165	21	27	522
% of Volume	98	103	92	99	87	82	97
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

15: Retail Driveway 4 & Shenandoah Drive Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	0.6	0.3	3.2	0.8	7.0	3.1	1.1
Vehicles Entered	205	41	38	195	9	34	522
Vehicles Exited	206	41	38	194	9	34	522
Hourly Exit Rate	206	41	38	194	9	34	522
Input Volume	220	37	42	196	12	37	544
% of Volume	94	111	90	99	73	92	96
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

16: Site Road & Retail Driveway 1/Retail Driveway 2 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	5.1	2.8	4.9	2.7	2.0	0.5	0.3	0.2	0.1	1.2
Vehicles Entered	8	27	19	21	16	46	25	122	22	306
Vehicles Exited	8	27	18	21	15	47	25	122	22	305
Hourly Exit Rate	8	27	18	21	15	47	25	122	22	305
Input Volume	9	28	19	18	20	45	20	130	21	308
% of Volume	86	97	96	118	76	104	127	94	106	99
Denied Entry Before	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0

Total Zone Performance

Denied Delay (hr)	1.0
Denied Del/Veh (s)	0.7
Total Delay (hr)	82.4
Total Del/Veh (s)	1172.6
Vehicles Entered	5319
Vehicles Exited	61
Hourly Exit Rate	61
Input Volume	16364
% of Volume	0
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	101	49
Average Queue (ft)	43	12
95th Queue (ft)	78	40
Link Distance (ft)	1213	1753
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	172	153	81	167	134	209	179	196	203	56	74	66
Average Queue (ft)	77	69	32	72	42	94	79	88	90	17	26	22
95th Queue (ft)	138	124	64	141	96	164	148	164	172	44	61	54
Link Distance (ft)		843		1117	1117		609	609			1753	1753
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250			350			225	325		
Storage Blk Time (%)									0			
Queuing Penalty (veh)									1			

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB
Directions Served	R
Maximum Queue (ft)	67
Average Queue (ft)	18
95th Queue (ft)	48
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	R	L	L	T	T	T	T	R
Maximum Queue (ft)	346	239	261	80	101	231	265	140	115	61
Average Queue (ft)	194	121	137	30	49	140	170	75	32	19
95th Queue (ft)	308	207	228	70	85	216	249	135	77	42
Link Distance (ft)		1243	1243			649	649	609	609	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	400			300	300					550
Storage Blk Time (%)	0									
Queuing Penalty (veh)	0									

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	392	108	266	264	271	274	146	158	89	127
Average Queue (ft)	233	56	143	151	157	171	63	74	32	42
95th Queue (ft)	344	91	233	239	254	254	113	121	79	97
Link Distance (ft)	1635		649	649	649				649	649
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)		450				400	200	200		
Storage Blk Time (%)							0			
Queuing Penalty (veh)							0			

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	R	L
Maximum Queue (ft)	311	352	203	72	134	16	29	71	56	89	83	173
Average Queue (ft)	97	225	50	33	59	1	5	31	16	35	32	92
95th Queue (ft)	241	351	264	66	105	7	22	62	44	72	65	153
Link Distance (ft)			3581	3581				1965	1965			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	350	350			200	450	450			300	300	400
Storage Blk Time (%)	0	4	0									
Queuing Penalty (veh)	0	2	0									

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	TR	L	L	T	T	R
Maximum Queue (ft)	180	329	389	430	60	83	124	133	76
Average Queue (ft)	115	151	239	266	18	40	56	64	21
95th Queue (ft)	165	273	363	388	49	75	109	114	51
Link Distance (ft)		2440	2440	2440			649	649	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	400				550	550			300
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 8: Eagle Creek Boulevard & Site Road

Movement	EB	EB	WB	WB	SB	SB
Directions Served	LT	T	T	TR	L	R
Maximum Queue (ft)	87	106	78	82	71	48
Average Queue (ft)	53	53	39	49	39	24
95th Queue (ft)	75	81	60	71	59	46
Link Distance (ft)	4608	4608	1221	1221	213	213
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard

Movement	EB	WB	SB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	46	33	18
Average Queue (ft)	18	11	0
95th Queue (ft)	35	29	6
Link Distance (ft)	961	1598	1137
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: Shenandoah Drive & South Townhomes Driveway

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	77	48
Average Queue (ft)	33	11
95th Queue (ft)	56	37
Link Distance (ft)	568	472
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Retail Driveway 3 & Shenandoah Drive

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	8	67	57
Average Queue (ft)	0	13	24
95th Queue (ft)	6	45	49
Link Distance (ft)	299	458	424
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: Retail Driveway 4 & Shenandoah Drive

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	66	53
Average Queue (ft)	12	25
95th Queue (ft)	42	49
Link Distance (ft)	281	394
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: Site Road & Retail Driveway 1/Retail Driveway 2

Movement	EB	WB	NB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	51	40	25
Average Queue (ft)	20	23	2
95th Queue (ft)	45	46	14
Link Distance (ft)	501	254	213
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 3

1: CSAH 83 & Barenscheer Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.2	0.2	0.1
Total Delay (hr)	0.1	0.1	0.0	0.2	0.2	0.0	0.7
Total Del/Veh (s)	14.3	5.7	5.0	2.3	1.1	0.7	2.2
Vehicles Entered	31	80	35	275	606	37	1064
Vehicles Exited	30	80	35	274	606	37	1062
Hourly Exit Rate	30	80	35	274	606	37	1062
Input Volume	29	75	37	279	593	37	1050
% of Volume	103	107	95	98	102	101	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.8	0.3	1.8	0.3	0.2	0.2	0.0	0.0	0.1	0.1	0.0	0.0
Total Delay (hr)	0.3	1.0	1.3	7.7	1.1	0.3	2.6	0.7	0.3	0.4	5.1	0.2
Total Del/Veh (s)	29.2	55.8	18.2	53.8	36.2	19.0	32.0	13.8	4.2	25.0	36.7	6.3
Vehicles Entered	41	62	254	511	107	55	291	192	230	58	491	140
Vehicles Exited	41	61	252	507	108	55	291	192	229	59	494	139
Hourly Exit Rate	41	61	252	507	108	55	291	192	229	59	494	139
Input Volume	42	67	264	511	103	54	292	197	221	55	487	132
% of Volume	98	91	95	99	105	102	100	97	104	108	101	106
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

2: CSAH 83 & 12th Ave E Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	21.1
Total Del/Veh (s)	30.9
Vehicles Entered	2432
Vehicles Exited	2428
Hourly Exit Rate	2428
Input Volume	2424
% of Volume	100
Denied Entry Before	0
Denied Entry After	0

3: CSAH 83 & WB 169 Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	1.2	0.5	0.0	0.0	0.2	0.0	1.9
Denied Del/Veh (s)	4.2	4.7	0.0	0.0	0.6	0.3	2.1
Total Delay (hr)	14.2	1.7	1.8	2.1	10.8	0.9	31.5
Total Del/Veh (s)	48.4	15.9	43.2	22.6	36.9	8.3	33.7
Vehicles Entered	1045	372	147	330	1037	391	3322
Vehicles Exited	1035	373	148	330	1045	391	3322
Hourly Exit Rate	1035	373	148	330	1045	391	3322
Input Volume	1048	376	146	323	1032	397	3322
% of Volume	99	99	101	102	101	99	100
Denied Entry Before	1	0	0	0	0	0	1
Denied Entry After	0	0	0	0	0	0	0

4: CSAH 83 & EB 169 Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.4	2.3	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	1.7	1.3	1.0	1.3	8.8	3.4	17.5
Total Del/Veh (s)	48.9	25.4	9.7	6.6	61.3	7.8	18.0
Vehicles Entered	120	178	365	712	506	1577	3458
Vehicles Exited	121	178	363	708	504	1570	3444
Hourly Exit Rate	121	178	363	708	504	1570	3444
Input Volume	120	165	358	713	495	1586	3437
% of Volume	101	108	101	99	102	99	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.4	0.0	0.5	1.5	0.1	1.9	1.6	0.2	0.1	0.0	0.0	0.0
Total Delay (hr)	5.4	1.4	3.4	0.4	1.6	0.8	4.7	3.4	0.2	3.0	6.1	0.8
Total Del/Veh (s)	74.4	42.5	33.2	63.4	52.7	13.5	64.5	20.0	16.7	42.7	18.4	8.8
Vehicles Entered	249	107	356	20	107	215	253	601	35	242	1181	340
Vehicles Exited	251	111	357	21	107	214	256	602	35	245	1176	342
Hourly Exit Rate	251	111	357	21	107	214	256	602	35	245	1176	342
Input Volume	253	112	364	22	112	213	253	595	35	240	1184	340
% of Volume	99	99	98	94	96	101	101	101	101	102	99	101
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0

5: CSAH 83 & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.3
Total Delay (hr)	31.0
Total Del/Veh (s)	29.6
Vehicles Entered	3706
Vehicles Exited	3717
Hourly Exit Rate	3717
Input Volume	3724
% of Volume	100
Denied Entry Before	0
Denied Entry After	0

8: Eagle Creek Boulevard & Site Road Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.1	0.4	0.4	0.1	0.4	0.0	1.4
Total Del/Veh (s)	8.9	3.3	2.7	2.8	17.9	4.7	4.2
Vehicles Entered	40	421	523	120	77	37	1218
Vehicles Exited	39	422	523	121	77	37	1219
Hourly Exit Rate	39	422	523	121	77	37	1219
Input Volume	39	424	517	126	79	36	1222
% of Volume	100	99	101	96	97	103	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard Performance by movement

Movement	EBL	EBT	WBT	WBR	NBT	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.9	6.1	6.6	2.3	0.4	2.1	0.4	0.2	2.0
Vehicles Entered	19	14	15	26	18	38	46	53	229
Vehicles Exited	19	14	15	26	18	38	46	53	229
Hourly Exit Rate	19	14	15	26	18	38	46	53	229
Input Volume	19	13	18	23	22	36	42	50	223
% of Volume	99	110	83	114	82	105	110	106	103
Denied Entry Before	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0

12: Shenandoah Drive & South Townhomes Driveway Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.1	0.1	0.0	0.0	0.3
Total Del/Veh (s)	8.9	3.9	3.2	1.0	0.6	0.6	1.3
Vehicles Entered	13	35	70	342	251	17	728
Vehicles Exited	13	35	70	344	251	17	730
Hourly Exit Rate	13	35	70	344	251	17	730
Input Volume	10	37	74	343	259	17	740
% of Volume	127	95	95	100	97	99	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

14: Retail Driveway 3 & Shenandoah Drive Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.1	0.1	0.0	0.2
Total Del/Veh (s)	0.4	0.2	2.9	0.7	7.1	3.3	1.0
Vehicles Entered	227	34	27	326	31	12	657
Vehicles Exited	227	33	27	326	31	12	656
Hourly Exit Rate	227	33	27	326	31	12	656
Input Volume	238	32	28	322	34	11	665
% of Volume	95	103	97	101	91	107	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

15: Retail Driveway 4 & Shenandoah Drive Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.1	0.1	0.0	0.2
Total Del/Veh (s)	0.5	0.3	2.6	0.7	7.5	4.0	1.1
Vehicles Entered	210	29	27	319	34	15	634
Vehicles Exited	210	29	27	319	34	15	634
Hourly Exit Rate	210	29	27	319	34	15	634
Input Volume	218	31	28	317	33	15	642
% of Volume	97	94	97	101	103	98	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0

16: Site Road & Retail Driveway 1/Retail Driveway 2 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.1	2.5	5.1	2.7	1.7	0.4	0.2	0.2	0.1	1.3
Vehicles Entered	3	22	36	9	24	92	44	55	13	298
Vehicles Exited	3	22	35	9	23	92	45	56	13	298
Hourly Exit Rate	3	22	35	9	23	92	45	56	13	298
Input Volume	4	21	36	7	23	99	43	58	14	305
% of Volume	75	106	97	124	101	93	104	97	91	98
Denied Entry Before	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0

Total Zone Performance

Denied Delay (hr)	2.7
Denied Del/Veh (s)	1.7
Total Delay (hr)	104.1
Total Del/Veh (s)	1441.3
Vehicles Entered	5833
Vehicles Exited	51
Hourly Exit Rate	51
Input Volume	17755
% of Volume	0
Denied Entry Before	1
Denied Entry After	0

Intersection: 1: CSAH 83 & Barenscheer Boulevard

Movement	EB	NB	NB	SB
Directions Served	LR	LT	T	TR
Maximum Queue (ft)	112	53	13	8
Average Queue (ft)	43	13	0	0
95th Queue (ft)	75	38	10	6
Link Distance (ft)	1213	1753	1753	1703
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: CSAH 83 & 12th Ave E

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	T	T	R	L	T	T
Maximum Queue (ft)	76	116	181	598	291	273	69	78	70	90	254	257
Average Queue (ft)	25	47	81	355	87	127	15	30	29	30	134	136
95th Queue (ft)	62	94	147	581	192	221	45	64	54	68	219	222
Link Distance (ft)		843		1117	1117		614	614			1753	1753
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250		250			350			225	325		
Storage Blk Time (%)			0									1
Queuing Penalty (veh)			0									1

Intersection: 2: CSAH 83 & 12th Ave E

Movement	SB
Directions Served	R
Maximum Queue (ft)	199
Average Queue (ft)	43
95th Queue (ft)	105
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	250
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 3: CSAH 83 & WB 169 Ramp

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	L	L	T	T	T	T	R
Maximum Queue (ft)	424	754	424	133	135	163	150	494	388	176
Average Queue (ft)	325	407	140	54	62	75	81	337	216	73
95th Queue (ft)	445	632	367	107	107	141	139	480	336	132
Link Distance (ft)		1243				643	643	614	614	
Upstream Blk Time (%)								0		
Queuing Penalty (veh)								0		
Storage Bay Dist (ft)	400		400	300	300					550
Storage Blk Time (%)	0	3	0							
Queuing Penalty (veh)	2	31	1							

Intersection: 4: CSAH 83 & EB 169 Ramp

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	T	T	R	R	L	L	T	T
Maximum Queue (ft)	209	168	159	76	101	108	212	224	575	477
Average Queue (ft)	91	86	51	18	36	38	132	147	92	84
95th Queue (ft)	167	144	122	55	79	84	217	226	305	245
Link Distance (ft)	1635		649	649	649				643	643
Upstream Blk Time (%)									0	0
Queuing Penalty (veh)									1	0
Storage Bay Dist (ft)		450				400	200	200		
Storage Blk Time (%)							4	6	0	
Queuing Penalty (veh)							30	49	0	

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	R	L
Maximum Queue (ft)	185	300	92	320	225	27	49	93	87	82	89	197
Average Queue (ft)	61	171	42	80	161	4	16	47	33	34	37	100
95th Queue (ft)	156	291	81	232	245	19	40	81	68	70	69	174
Link Distance (ft)			3581	3581				1965	1965			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	350	350			200	450	450			300	300	400
Storage Blk Time (%)	0	1		0	8							
Queuing Penalty (veh)	0	0		0	5							

Intersection: 5: CSAH 83 & Eagle Creek Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	TR	L	L	T	T	R
Maximum Queue (ft)	200	142	191	190	144	155	292	286	176
Average Queue (ft)	115	54	76	114	73	92	189	186	63
95th Queue (ft)	184	114	155	178	132	145	274	269	138
Link Distance (ft)		2440	2440	2440			649	649	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	400				550	550			300
Storage Blk Time (%)								0	0
Queuing Penalty (veh)								0	0

Intersection: 8: Eagle Creek Boulevard & Site Road

Movement	EB	WB	WB	SB	SB
Directions Served	LT	T	TR	L	R
Maximum Queue (ft)	72	15	18	95	57
Average Queue (ft)	19	1	1	42	26
95th Queue (ft)	55	8	7	76	53
Link Distance (ft)	4608	1221	1221	213	213
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 9: Shenandoah Drive & Eastway Avenue/Barenscheer Boulevard

Movement	EB	WB	SB	SB
Directions Served	LTR	LTR	LT	R
Maximum Queue (ft)	32	38	18	4
Average Queue (ft)	13	15	1	0
95th Queue (ft)	29	33	11	3
Link Distance (ft)	961	1598	1137	1137
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: Shenandoah Drive & South Townhomes Driveway

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	60	77
Average Queue (ft)	27	20
95th Queue (ft)	51	58
Link Distance (ft)	568	472
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Retail Driveway 3 & Shenandoah Drive

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	66	55
Average Queue (ft)	9	24
95th Queue (ft)	40	47
Link Distance (ft)	458	424
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Retail Driveway 4 & Shenandoah Drive

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	46	67
Average Queue (ft)	5	27
95th Queue (ft)	26	55
Link Distance (ft)	281	394
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: Site Road & Retail Driveway 1/Retail Driveway 2

Movement	EB	WB	NB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	34	54	32
Average Queue (ft)	16	25	3
95th Queue (ft)	39	51	19
Link Distance (ft)	501	254	213
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 122

MOVEMENT SUMMARY

Site: 101 [Intersection 6_AM_2020]

Vierling Drive & Shenandoah Drive/12th Ave E
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Vierling Drive											
3	L2	30	3.0	0.030	3.8	LOS A	0.1	2.6	0.17	0.07	26.8
18	R2	188	3.0	0.184	5.2	LOS A	0.7	18.4	0.20	0.09	26.8
Approach		218	3.0	0.184	5.0	LOS A	0.7	18.4	0.19	0.09	26.8
East: 12th Ave E											
1	L2	62	3.0	0.034	0.0	LOS A	0.0	0.0	0.00	0.00	28.0
6	T1	61	3.0	0.032	0.0	LOS A	0.0	0.0	0.00	0.00	29.5
Approach		123	3.0	0.034	0.0	LOS A	0.0	0.0	0.00	0.00	28.7
West: Shenandoah Drive											
2	T1	68	3.0	0.090	4.3	LOS A	0.3	8.2	0.17	0.07	27.9
12	R2	24	3.0	0.090	4.3	LOS A	0.3	8.2	0.17	0.07	27.4
Approach		92	3.0	0.090	4.3	LOS A	0.3	8.2	0.17	0.07	27.8
All Vehicles		434	3.0	0.184	3.4	LOS A	0.7	18.4	0.13	0.06	27.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Intersection 6_PM_2020]

Vierling Drive & Shenandoah Drive/12th Ave E
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Vierling Drive											
3	L2	77	3.0	0.079	4.4	LOS A	0.3	7.0	0.23	0.12	26.6
18	R2	53	3.0	0.054	4.2	LOS A	0.2	4.7	0.22	0.11	27.2
Approach		130	3.0	0.079	4.3	LOS A	0.3	7.0	0.23	0.12	26.8
East: 12th Ave E											
1	L2	268	3.0	0.147	0.0	LOS A	0.0	0.0	0.00	0.00	28.0
6	T1	118	3.0	0.062	0.0	LOS A	0.0	0.0	0.00	0.00	29.5
Approach		387	3.0	0.147	0.0	LOS A	0.0	0.0	0.00	0.00	28.5
West: Shenandoah Drive											
2	T1	109	3.0	0.200	6.4	LOS A	0.8	19.2	0.41	0.32	27.2
12	R2	58	3.0	0.200	6.4	LOS A	0.8	19.2	0.41	0.32	26.7
Approach		166	3.0	0.200	6.4	LOS A	0.8	19.2	0.41	0.32	27.0
All Vehicles		684	3.0	0.200	2.4	LOS A	0.8	19.2	0.14	0.10	27.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Intersection 6_AM_2025]

Vierling Drive & Shenandoah Drive/12th Ave E
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Vierling Drive											
3	L2	122	3.0	0.133	5.2	LOS A	0.5	12.4	0.31	0.21	26.3
18	R2	208	3.0	0.227	6.2	LOS A	0.9	23.0	0.34	0.24	26.5
Approach		329	3.0	0.227	5.9	LOS A	0.9	23.0	0.33	0.23	26.4
East: 12th Ave E											
1	L2	68	3.0	0.037	0.0	LOS A	0.0	0.0	0.00	0.00	28.0
6	T1	136	3.0	0.071	0.0	LOS A	0.0	0.0	0.00	0.00	29.5
Approach		204	3.0	0.071	0.0	LOS A	0.0	0.0	0.00	0.00	29.0
West: Shenandoah Drive											
2	T1	178	3.0	0.273	6.2	LOS A	1.2	30.3	0.22	0.11	27.3
12	R2	101	3.0	0.273	6.2	LOS A	1.2	30.3	0.22	0.11	26.7
Approach		279	3.0	0.273	6.2	LOS A	1.2	30.3	0.22	0.11	27.1
All Vehicles		813	3.0	0.273	4.5	LOS A	1.2	30.3	0.21	0.13	27.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Intersection 6_PM_2025]

Vierling Drive & Shenandoah Drive/12th Ave E
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Vierling Drive											
3	L2	161	3.0	0.173	5.5	LOS A	0.7	16.7	0.31	0.20	26.2
18	R2	59	3.0	0.063	4.4	LOS A	0.2	5.5	0.28	0.16	27.1
Approach		220	3.0	0.173	5.2	LOS A	0.7	16.7	0.30	0.19	26.4
East: 12th Ave E											
1	L2	297	3.0	0.162	0.0	LOS A	0.0	0.0	0.00	0.00	28.0
6	T1	213	3.0	0.111	0.0	LOS A	0.0	0.0	0.00	0.00	29.5
Approach		510	3.0	0.162	0.0	LOS A	0.0	0.0	0.00	0.00	28.6
West: Shenandoah Drive											
2	T1	160	3.0	0.312	8.0	LOS A	1.3	32.9	0.47	0.40	26.7
12	R2	92	3.0	0.312	8.0	LOS A	1.3	32.9	0.47	0.40	26.2
Approach		252	3.0	0.312	8.0	LOS A	1.3	32.9	0.47	0.40	26.5
All Vehicles		982	3.0	0.312	3.2	LOS A	1.3	32.9	0.19	0.15	27.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [Intersection 7_AM_2020]

Eagle Creek Boulevard and Vierling Drive
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Vierling Drive											
3	L2	25	3.0	0.147	6.2	LOS A	0.4	10.4	0.40	0.37	34.1
8	T1	89	3.0	0.147	6.2	LOS A	0.4	10.4	0.40	0.37	34.0
18	R2	114	3.0	0.147	6.1	LOS A	0.4	9.9	0.37	0.35	33.5
Approach		228	3.0	0.147	6.2	LOS A	0.4	10.4	0.39	0.36	33.7
East: Eagle Creek Boulevard											
1	L2	53	3.0	0.210	5.9	LOS A	0.6	16.2	0.27	0.20	34.1
6	T1	298	3.0	0.210	5.9	LOS A	0.6	16.2	0.27	0.19	34.4
16	R2	48	3.0	0.210	5.8	LOS A	0.6	15.2	0.26	0.18	33.7
Approach		399	3.0	0.210	5.9	LOS A	0.6	16.2	0.27	0.19	34.3
North: Vierling Drive											
7	L2	22	3.0	0.052	4.9	LOS A	0.1	3.5	0.33	0.26	34.0
4	T1	33	3.0	0.052	4.9	LOS A	0.1	3.5	0.33	0.26	34.4
14	R2	33	3.0	0.052	4.8	LOS A	0.1	3.3	0.32	0.25	34.1
Approach		87	3.0	0.052	4.8	LOS A	0.1	3.5	0.32	0.25	34.2
West: Eagle Creek Boulevard											
5	L2	82	3.0	0.229	5.8	LOS A	0.7	18.2	0.20	0.12	34.0
2	T1	357	3.0	0.229	5.7	LOS A	0.7	18.2	0.19	0.11	34.4
12	R2	25	3.0	0.229	5.7	LOS A	0.7	17.0	0.19	0.11	33.8
Approach		463	3.0	0.229	5.8	LOS A	0.7	18.2	0.20	0.11	34.3
All Vehicles		1177	3.0	0.229	5.8	LOS A	0.7	18.2	0.27	0.20	34.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [Intersection 7_PM_2020]

Eagle Creek Boulevard and Vierling Drive
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Vierling Drive											
3	L2	23	3.0	0.092	5.7	LOS A	0.2	6.3	0.39	0.35	34.1
8	T1	47	3.0	0.092	5.7	LOS A	0.2	6.3	0.39	0.35	34.0
18	R2	98	3.0	0.126	6.0	LOS A	0.3	8.4	0.38	0.35	33.5
Approach		167	3.0	0.126	5.9	LOS A	0.3	8.4	0.38	0.35	33.7
East: Eagle Creek Boulevard											
1	L2	137	3.0	0.280	6.4	LOS A	0.9	23.5	0.24	0.15	33.3
6	T1	396	3.0	0.280	6.4	LOS A	0.9	23.5	0.23	0.14	34.0
16	R2	25	3.0	0.280	6.4	LOS A	0.9	22.0	0.22	0.14	33.4
Approach		558	3.0	0.280	6.4	LOS A	0.9	23.5	0.23	0.14	33.8
North: Vierling Drive											
7	L2	55	3.0	0.225	7.6	LOS A	0.7	16.8	0.46	0.46	33.1
4	T1	130	3.0	0.225	7.6	LOS A	0.7	16.8	0.45	0.45	33.2
14	R2	140	3.0	0.225	7.4	LOS A	0.6	16.0	0.43	0.43	32.8
Approach		326	3.0	0.225	7.5	LOS A	0.7	16.8	0.44	0.44	33.0
West: Eagle Creek Boulevard											
5	L2	59	3.0	0.260	7.0	LOS A	0.8	20.6	0.37	0.32	33.6
2	T1	370	3.0	0.260	6.9	LOS A	0.8	20.6	0.36	0.31	33.9
12	R2	20	3.0	0.260	6.9	LOS A	0.8	19.5	0.35	0.30	33.2
Approach		448	3.0	0.260	6.9	LOS A	0.8	20.6	0.36	0.31	33.9
All Vehicles		1499	3.0	0.280	6.7	LOS A	0.9	23.5	0.33	0.28	33.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [Intersection 7_AM_2025]

Eagle Creek Boulevard and Vierling Drive
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Vierling Drive											
3	L2	52	3.0	0.221	8.0	LOS A	0.6	16.3	0.48	0.48	32.9
8	T1	124	3.0	0.221	7.9	LOS A	0.6	16.3	0.47	0.47	33.0
18	R2	126	3.0	0.221	7.8	LOS A	0.6	15.5	0.46	0.46	32.7
Approach		302	3.0	0.221	7.9	LOS A	0.6	16.3	0.47	0.47	32.8
East: Eagle Creek Boulevard											
1	L2	59	3.0	0.298	7.3	LOS A	1.0	24.8	0.36	0.30	33.6
6	T1	371	3.0	0.298	7.2	LOS A	1.0	24.8	0.35	0.29	33.7
16	R2	102	3.0	0.298	7.2	LOS A	0.9	23.4	0.34	0.28	33.0
Approach		532	3.0	0.298	7.2	LOS A	1.0	24.8	0.35	0.29	33.6
North: Vierling Drive											
7	L2	51	3.0	0.111	5.9	LOS A	0.3	7.7	0.39	0.36	33.2
4	T1	74	3.0	0.111	5.8	LOS A	0.3	7.7	0.38	0.35	34.0
14	R2	46	3.0	0.111	5.8	LOS A	0.3	7.3	0.37	0.34	33.7
Approach		171	3.0	0.111	5.8	LOS A	0.3	7.7	0.38	0.35	33.7
West: Eagle Creek Boulevard											
5	L2	103	3.0	0.327	7.2	LOS A	1.1	28.7	0.30	0.22	33.3
2	T1	479	3.0	0.327	7.2	LOS A	1.1	28.7	0.29	0.21	33.7
12	R2	43	3.0	0.327	7.2	LOS A	1.1	27.0	0.28	0.21	33.0
Approach		626	3.0	0.327	7.2	LOS A	1.1	28.7	0.29	0.21	33.6
All Vehicles		1630	3.0	0.327	7.2	LOS A	1.1	28.7	0.35	0.30	33.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [Intersection 7_PM_2025]

Eagle Creek Boulevard and Vierling Drive
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Vierling Drive											
3	L2	47	3.0	0.161	7.0	LOS A	0.4	11.4	0.45	0.45	33.2
8	T1	72	3.0	0.161	7.0	LOS A	0.4	11.4	0.44	0.44	33.2
18	R2	109	3.0	0.161	6.8	LOS A	0.4	10.9	0.42	0.42	33.1
Approach		227	3.0	0.161	6.9	LOS A	0.4	11.4	0.44	0.44	33.2
East: Eagle Creek Boulevard											
1	L2	151	3.0	0.374	8.0	LOS A	1.4	34.6	0.33	0.25	32.7
6	T1	488	3.0	0.374	7.9	LOS A	1.4	34.6	0.32	0.24	33.3
16	R2	70	3.0	0.374	7.9	LOS A	1.3	32.6	0.31	0.24	32.7
Approach		709	3.0	0.374	7.9	LOS A	1.4	34.6	0.32	0.24	33.1
North: Vierling Drive											
7	L2	72	3.0	0.297	9.4	LOS A	0.9	23.2	0.52	0.52	32.2
4	T1	159	3.0	0.297	9.3	LOS A	0.9	23.2	0.51	0.52	32.3
14	R2	160	3.0	0.297	9.1	LOS A	0.9	22.1	0.50	0.50	32.0
Approach		390	3.0	0.297	9.3	LOS A	0.9	23.2	0.51	0.51	32.2
West: Eagle Creek Boulevard											
5	L2	79	3.0	0.331	8.2	LOS A	1.1	27.8	0.43	0.40	32.9
2	T1	439	3.0	0.331	8.2	LOS A	1.1	27.8	0.41	0.39	33.3
12	R2	28	3.0	0.331	8.1	LOS A	1.0	26.4	0.40	0.38	32.6
Approach		547	3.0	0.331	8.2	LOS A	1.1	27.8	0.41	0.39	33.2
All Vehicles		1873	3.0	0.374	8.1	LOS A	1.4	34.6	0.40	0.37	32.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 10 [Intersection 10_AM_2025]

Shenandoah Drive and North Townhomes Driveway/Parking Lot Site Road
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Shenandoah Drive											
3	L2	15	3.0	0.148	4.7	LOS A	0.6	14.4	0.10	0.03	27.7
8	T1	41	3.0	0.148	4.7	LOS A	0.6	14.4	0.10	0.03	27.7
18	R2	102	3.0	0.148	4.7	LOS A	0.6	14.4	0.10	0.03	27.0
Approach		159	3.0	0.148	4.7	LOS A	0.6	14.4	0.10	0.03	27.3
East: Parking Lot Site Road											
1	L2	35	3.0	0.037	3.8	LOS A	0.1	3.2	0.17	0.07	26.9
6	T1	2	3.0	0.037	3.8	LOS A	0.1	3.2	0.17	0.07	26.9
16	R2	1	3.0	0.037	3.8	LOS A	0.1	3.2	0.17	0.07	26.4
Approach		38	3.0	0.037	3.8	LOS A	0.1	3.2	0.17	0.07	26.9
North: Shenandoah Drive											
7	L2	1	3.0	0.030	3.7	LOS A	0.1	2.6	0.14	0.05	28.2
4	T1	29	3.0	0.030	3.7	LOS A	0.1	2.6	0.14	0.05	28.1
14	R2	1	3.0	0.030	3.7	LOS A	0.1	2.6	0.14	0.05	27.5
Approach		32	3.0	0.030	3.7	LOS A	0.1	2.6	0.14	0.05	28.1
West: North Townhomes Driveway											
5	L2	11	3.0	0.081	4.2	LOS A	0.3	7.2	0.17	0.07	27.8
2	T1	10	3.0	0.081	4.2	LOS A	0.3	7.2	0.17	0.07	27.7
12	R2	62	3.0	0.081	4.2	LOS A	0.3	7.2	0.17	0.07	27.1
Approach		83	3.0	0.081	4.2	LOS A	0.3	7.2	0.17	0.07	27.3
All Vehicles		311	3.0	0.148	4.4	LOS A	0.6	14.4	0.13	0.05	27.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 10 [Intersection 10_PM_2025]

Shenandoah Drive and North Townhomes Driveway/Parking Lot Site Road
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Shenandoah Drive											
3	L2	64	3.0	0.207	5.2	LOS A	0.8	21.6	0.06	0.01	27.3
8	T1	20	3.0	0.207	5.2	LOS A	0.8	21.6	0.06	0.01	27.2
18	R2	141	3.0	0.207	5.2	LOS A	0.8	21.6	0.06	0.01	26.6
Approach		225	3.0	0.207	5.2	LOS A	0.8	21.6	0.06	0.01	26.9
East: Parking Lot Site Road											
1	L2	165	3.0	0.174	5.2	LOS A	0.7	17.2	0.22	0.11	26.4
6	T1	9	3.0	0.174	5.2	LOS A	0.7	17.2	0.22	0.11	26.4
16	R2	1	3.0	0.174	5.2	LOS A	0.7	17.2	0.22	0.11	25.9
Approach		175	3.0	0.174	5.2	LOS A	0.7	17.2	0.22	0.11	26.4
North: Shenandoah Drive											
7	L2	1	3.0	0.054	4.7	LOS A	0.2	4.7	0.34	0.23	27.8
4	T1	35	3.0	0.054	4.7	LOS A	0.2	4.7	0.34	0.23	27.7
14	R2	11	3.0	0.054	4.7	LOS A	0.2	4.7	0.34	0.23	27.2
Approach		47	3.0	0.054	4.7	LOS A	0.2	4.7	0.34	0.23	27.6
West: North Townhomes Driveway											
5	L2	3	3.0	0.049	4.5	LOS A	0.2	4.2	0.31	0.19	27.8
2	T1	4	3.0	0.049	4.5	LOS A	0.2	4.2	0.31	0.19	27.7
12	R2	36	3.0	0.049	4.5	LOS A	0.2	4.2	0.31	0.19	27.1
Approach		43	3.0	0.049	4.5	LOS A	0.2	4.2	0.31	0.19	27.2
All Vehicles		490	3.0	0.207	5.1	LOS A	0.8	21.6	0.17	0.09	26.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 10 [Intersection 11_AM_2020]

Shenandoah Drive and Apartment Driveway
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Shenandoah Drive											
3	L2	32	3.0	0.097	4.2	LOS A	0.3	8.9	0.11	0.04	27.6
8	T1	72	3.0	0.097	4.2	LOS A	0.3	8.9	0.11	0.04	27.5
Approach		103	3.0	0.097	4.2	LOS A	0.3	8.9	0.11	0.04	27.5
North: Shenandoah Drive											
4	T1	26	3.0	0.032	3.7	LOS A	0.1	2.7	0.11	0.03	28.1
14	R2	8	3.0	0.032	3.7	LOS A	0.1	2.7	0.11	0.03	27.6
Approach		34	3.0	0.032	3.7	LOS A	0.1	2.7	0.11	0.03	28.0
West: Apartment Driveway											
5	L2	32	3.0	0.146	4.7	LOS A	0.6	14.1	0.11	0.03	27.5
12	R2	124	3.0	0.146	4.7	LOS A	0.6	14.1	0.11	0.03	26.9
Approach		155	3.0	0.146	4.7	LOS A	0.6	14.1	0.11	0.03	27.0
All Vehicles		292	3.0	0.146	4.4	LOS A	0.6	14.1	0.11	0.03	27.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 10 [Intersection 11_PM_2020]

Shenandoah Drive and Apartment Driveway
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Shenandoah Drive											
3	L2	123	3.0	0.223	5.4	LOS A	0.9	23.7	0.09	0.02	26.9
8	T1	117	3.0	0.223	5.4	LOS A	0.9	23.7	0.09	0.02	26.9
Approach		240	3.0	0.223	5.4	LOS A	0.9	23.7	0.09	0.02	26.9
North: Shenandoah Drive											
4	T1	130	3.0	0.166	5.3	LOS A	0.6	16.1	0.27	0.16	27.6
14	R2	30	3.0	0.166	5.3	LOS A	0.6	16.1	0.27	0.16	27.0
Approach		161	3.0	0.166	5.3	LOS A	0.6	16.1	0.27	0.16	27.5
West: Apartment Driveway											
5	L2	16	3.0	0.086	4.5	LOS A	0.3	7.7	0.25	0.14	27.5
12	R2	66	3.0	0.086	4.5	LOS A	0.3	7.7	0.25	0.14	26.9
Approach		83	3.0	0.086	4.5	LOS A	0.3	7.7	0.25	0.14	27.1
All Vehicles		484	3.0	0.223	5.2	LOS A	0.9	23.7	0.18	0.09	27.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 10 [Intersection 11_AM_2025]

Shenandoah Drive and Apartment Driveway
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Shenandoah Drive											
3	L2	45	3.0	0.161	4.8	LOS A	0.6	15.8	0.12	0.04	27.4
8	T1	126	3.0	0.161	4.8	LOS A	0.6	15.8	0.12	0.04	27.4
Approach		171	3.0	0.161	4.8	LOS A	0.6	15.8	0.12	0.04	27.4
North: Shenandoah Drive											
4	T1	117	3.0	0.120	4.5	LOS A	0.4	11.3	0.14	0.05	27.9
14	R2	9	3.0	0.120	4.5	LOS A	0.4	11.3	0.14	0.05	27.3
Approach		126	3.0	0.120	4.5	LOS A	0.4	11.3	0.14	0.05	27.8
West: Apartment Driveway											
5	L2	33	3.0	0.221	5.9	LOS A	0.9	22.7	0.27	0.16	27.2
12	R2	183	3.0	0.221	5.9	LOS A	0.9	22.7	0.27	0.16	26.6
Approach		215	3.0	0.221	5.9	LOS A	0.9	22.7	0.27	0.16	26.7
All Vehicles		512	3.0	0.221	5.2	LOS A	0.9	22.7	0.19	0.10	27.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 10 [Intersection 11_PM_2025]

Shenandoah Drive and Apartment Driveway
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Shenandoah Drive											
3	L2	174	3.0	0.355	6.9	LOS A	1.8	45.0	0.10	0.03	26.5
8	T1	210	3.0	0.355	6.9	LOS A	1.8	45.0	0.10	0.03	26.4
Approach		384	3.0	0.355	6.9	LOS A	1.8	45.0	0.10	0.03	26.5
North: Shenandoah Drive											
4	T1	205	3.0	0.257	6.6	LOS A	1.1	26.9	0.35	0.24	27.2
14	R2	30	3.0	0.257	6.6	LOS A	1.1	26.9	0.35	0.24	26.6
Approach		236	3.0	0.257	6.6	LOS A	1.1	26.9	0.35	0.24	27.1
West: Apartment Driveway											
5	L2	15	3.0	0.122	5.2	LOS A	0.4	11.2	0.33	0.23	27.4
12	R2	93	3.0	0.122	5.2	LOS A	0.4	11.2	0.33	0.23	26.8
Approach		109	3.0	0.122	5.2	LOS A	0.4	11.2	0.33	0.23	26.9
All Vehicles		728	3.0	0.355	6.6	LOS A	1.8	45.0	0.22	0.13	26.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 13 [Intersection 13_AM_2020]

Shenandoah Drive/12th Ave S and Site Road
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Site Road											
3	L2	12	3.0	0.013	3.7	LOS A	0.0	1.1	0.20	0.08	26.9
18	R2	1	3.0	0.013	3.7	LOS A	0.0	1.1	0.20	0.08	26.3
Approach		13	3.0	0.013	3.7	LOS A	0.0	1.1	0.20	0.08	26.8
East: 12th Ave S											
1	L2	1	3.0	0.085	4.1	LOS A	0.3	7.8	0.06	0.01	34.3
6	T1	91	3.0	0.085	4.1	LOS A	0.3	7.8	0.06	0.01	34.5
Approach		92	3.0	0.085	4.1	LOS A	0.3	7.8	0.06	0.01	34.5
West: Shenandoah Drive											
2	T1	92	3.0	0.137	4.5	LOS A	0.5	13.2	0.02	0.00	34.3
12	R2	58	3.0	0.137	4.5	LOS A	0.5	13.2	0.02	0.00	33.5
Approach		150	3.0	0.137	4.5	LOS A	0.5	13.2	0.02	0.00	34.0
All Vehicles		255	3.0	0.137	4.3	LOS A	0.5	13.2	0.04	0.01	33.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 13 [Intersection 13_PM_2020]

Shenandoah Drive/12th Ave S and Site Road
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Site Road											
3	L2	46	3.0	0.051	4.4	LOS A	0.2	4.4	0.28	0.16	26.6
18	R2	1	3.0	0.051	4.4	LOS A	0.2	4.4	0.28	0.16	26.1
Approach		47	3.0	0.051	4.4	LOS A	0.2	4.4	0.28	0.16	26.6
East: 12th Ave S											
1	L2	1	3.0	0.187	5.2	LOS A	0.7	18.9	0.16	0.06	33.8
6	T1	195	3.0	0.187	5.2	LOS A	0.7	18.9	0.16	0.06	33.9
Approach		196	3.0	0.187	5.2	LOS A	0.7	18.9	0.16	0.06	33.9
West: Shenandoah Drive											
2	T1	166	3.0	0.180	4.9	LOS A	0.7	18.2	0.02	0.00	34.1
12	R2	30	3.0	0.180	4.9	LOS A	0.7	18.2	0.02	0.00	33.3
Approach		197	3.0	0.180	4.9	LOS A	0.7	18.2	0.02	0.00	34.0
All Vehicles		439	3.0	0.187	5.0	LOS A	0.7	18.9	0.11	0.05	33.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 13 [Intersection 13_AM_2025]

Shenandoah Drive/12th Ave S and Site Road
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Site Road											
3	L2	25	3.0	0.090	5.1	LOS A	0.3	7.9	0.35	0.25	27.2
18	R2	52	3.0	0.090	5.1	LOS A	0.3	7.9	0.35	0.25	26.6
Approach		77	3.0	0.090	5.1	LOS A	0.3	7.9	0.35	0.25	26.8
East: 12th Ave S											
1	L2	41	3.0	0.189	5.1	LOS A	0.8	19.3	0.11	0.04	33.4
6	T1	161	3.0	0.189	5.1	LOS A	0.8	19.3	0.11	0.04	33.5
Approach		202	3.0	0.189	5.1	LOS A	0.8	19.3	0.11	0.04	33.5
West: Shenandoah Drive											
2	T1	238	3.0	0.342	6.9	LOS A	1.6	41.9	0.18	0.07	33.1
12	R2	122	3.0	0.342	6.9	LOS A	1.6	41.9	0.18	0.07	32.4
Approach		360	3.0	0.342	6.9	LOS A	1.6	41.9	0.18	0.07	32.8
All Vehicles		639	3.0	0.342	6.1	LOS A	1.6	41.9	0.18	0.08	32.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 13 [Intersection 13_PM_2025]

Shenandoah Drive/12th Ave S and Site Road
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Site Road											
3	L2	92	3.0	0.143	5.7	LOS A	0.5	13.2	0.39	0.30	26.4
18	R2	27	3.0	0.143	5.7	LOS A	0.5	13.2	0.39	0.30	25.9
Approach		120	3.0	0.143	5.7	LOS A	0.5	13.2	0.39	0.30	26.3
East: 12th Ave S											
1	L2	23	3.0	0.385	7.8	LOS A	1.9	48.5	0.29	0.17	32.4
6	T1	361	3.0	0.385	7.8	LOS A	1.9	48.5	0.29	0.17	32.5
Approach		384	3.0	0.385	7.8	LOS A	1.9	48.5	0.29	0.17	32.5
West: Shenandoah Drive											
2	T1	265	3.0	0.299	6.3	LOS A	1.4	34.9	0.12	0.04	33.4
12	R2	55	3.0	0.299	6.3	LOS A	1.4	34.9	0.12	0.04	32.7
Approach		321	3.0	0.299	6.3	LOS A	1.4	34.9	0.12	0.04	33.3
All Vehicles		824	3.0	0.385	6.9	LOS A	1.9	48.5	0.24	0.14	31.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Appendix E:

Level of Service and Queue Summary Tables

Existing (2017) Intersection Level of Service Summary (AM Peak Hour)										
Intersection	Type of Control	Approach	Left		Through		Right		Overall Intersection	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	10.1	B	--	--	4.6	A	3.0	A
		WB	--	--	--	--	--	--		
		NB	3.2	A	3.2	A	--	--		
		SB	--	--	0.3	A	0.2	A		
CSAH 83 & 12th Avenue	Signalized	EB	35.9	D	49.6	D	4.7	A	13.2	B
		WB	39.9	D	46.7	D	15.4	B		
		NB	10.2	B	8.2	A	6.4	A		
		SB	22.0	C	12.8	B	2.4	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	21.6	C
		WB	32.4	C	--	--	28.3	C		
		NB	53.1	D	14.2	B	--	--		
		SB	--	--	14.8	B	3.2	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	44.3	D	--	--	6.0	A	16.4	B
		WB	--	--	--	--	--	--		
		NB	--	--	14.4	B	10.9	B		
		SB	45.0	D	6.5	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	53.1	D	36.0	D	8.6	A	55.3	E
		WB	54.5	D	48.3	D	25.4	C		
		NB	62.4	E	79.6	E	74.1	E		
		SB	46.9	D	12.7	B	3.9	A		
Vierling Drive & 12th Avenue	Unsignalized	EB	--	--	0.4	A	0.0	A	2.0	A
		WB	2.3	A	0.4	A	--	--		
		NB	6.5	A	--	--	4.4	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Unsignalized	EB	7.5	A	7.7	A	4.0	A	7.4	A
		WB	8.8	A	8.1	A	9.5	A		
		NB	5.7	A	7.8	A	4.3	A		
		SB	5.8	A	6.4	A	3.2	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah Drive	Unsignalized	EB	4.6	A	6.0	A	--	--	3.5	A
		WB	--	--	5.8	A	2.5	A		
		NB	--	--	--	--	--	--		
		SB	0.1	A	--	--	0.1	A		

Existing (2017) Intersection Level of Service Summary (PM Peak Hour)										
Intersection	Type of Control	Approach	Left		Through		Right		Overall Intersection	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	10.2	B	--	--	4.5	A	1.5	A
		WB	--	--	--	--	--	--		
		NB	5.3	A	1.2	A	--	--		
		SB	--	--	0.8	A	0.7	A		
CSAH 83 & 12th Avenue	Signalized	EB	34.9	C	64.6	E	12.7	B	26.3	C
		WB	51.5	D	39.9	D	22.0	C		
		NB	18.1	B	11.9	B	3.6	A		
		SB	17.5	B	23.6	C	4.1	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	27.3	C
		WB	41.8	D	44.0	D	7.8	A		
		NB	35.7	D	17.0	B	--	--		
		SB	--	--	28.8	C	6.3	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	56.7	E	--	--	16.8	B	16.1	B
		WB	--	--	--	--	--	--		
		NB	--	--	12.4	B	9.2	A		
		SB	52.0	D	5.2	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	55.1	E	39.0	D	27.1	C	26.2	C
		WB	56.6	E	51.1	D	12.8	B		
		NB	52.0	D	21.1	C	3.8	A		
		SB	37.2	D	18.6	B	5.6	A		
Vierling Drive & 12th Avenue	Unsignalized	EB	--	--	0.8	A	0.4	A	2.8	A
		WB	3.6	A	0.4	A	--	--		
		NB	9.4	A	1.4	A	3.9	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Unsignalized	EB	9.0	A	9.1	A	5.5	A	8.8	A
		WB	11.7	B	10.3	B	10.2	B		
		NB	6.7	A	8.8	A	4.3	A		
		SB	7.3	A	7.9	A	5.2	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah Drive	Unsignalized	EB	4.4	A	6.0	A	--	--	2.1	A
		WB	--	--	6.0	A	2.7	A		
		NB	--	--	--	--	--	--		
		SB	0.1	A	--	--	0.1	A		

Phase 1 Background (2020) Intersection Level of Service Summary (AM Peak Hour)										
Intersection	**Type of Control**	**Approach**	**Left**		**Through**		**Right**		**Overall Intersection**	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	12.1	B	--	--	2.6	A	3.2	A
		WB	--	--	--	--	--	--		
		NB	3.5	A	3.4	A	--	--		
		SB	--	--	0.3	A	0.4	A		
CSAH 83 & 12th Avenue	Signalized	EB	31.0	C	51.0	D	5.7	A	14.0	B
		WB	45.8	D	52.2	D	10.5	B		
		NB	10.1	B	9.4	A	6.0	A		
		SB	30.9	C	12.2	B	1.6	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	22.7	C
		WB	34.1	C	--	--	33.6	C		
		NB	45.1	D	13.8	B	--	--		
		SB	--	--	13.2	B	3.3	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	43.0	D	--	--	6.4	A	16.5	B
		WB	--	--	--	--	--	--		
		NB	--	--	14.4	B	11.4	B		
		SB	38.7	D	6.9	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	59.5	E	39.9	D	8.7	A	89.8	F
		WB	53.9	D	47.9	D	23.7	C		
		NB	99.8	F	143.0	F	162.3	F		
		SB	52.2	D	12.4	B	4.4	A		
Vierling Drive & 12th Avenue	Unsignalized	EB	--	--	1.2	A	0.2	A	2.0	A
		WB	2.2	A	0.5	A	--	--		
		NB	6.5	A	--	--	4.3	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Signalized	EB	8.1	A	7.8	A	4.0	A	7.5	A
		WB	9.3	A	8.3	A	9.8	A		
		NB	5.3	A	8.1	A	4.4	A		
		SB	5.4	A	6.8	A	2.6	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah Drive	Unsignalized	EB	4.4	A	10.6	B	--	--	3.5	A
		WB	--	--	5.8	A	3.2	A		
		NB	--	--	--	--	--	--		
		SB	0.0	A	--	--	0.0	A		

Phase 1 Background (2020) Intersection Level of Service Summary (PM Peak Hour)										
Intersection	**Type of Control**	**Approach**	**Left**		**Through**		**Right**		**Overall Intersection**	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	7.4	A	--	--	4.3	A	1.7	A
		WB	--	--	--	--	--	--		
		NB	5.3	A	1.2	A	--	--		
		SB	--	--	0.8	A	0.9	A		
CSAH 83 & 12th Avenue	Signalized	EB	32.2	C	59.2	E	12.8	B	27.0	C
		WB	52.7	D	36.6	D	20.4	C		
		NB	20.6	C	12.8	B	3.5	A		
		SB	20.0	B	24.6	C	4.1	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	27.7	C
		WB	42.3	D	35.8	D	8.4	A		
		NB	36.5	D	16.3	B	--	--		
		SB	--	--	29.8	C	6.8	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	55.9	E	--	--	18.1	B	15.6	B
		WB	--	--	--	--	--	--		
		NB	--	--	11.9	B	9.4	A		
		SB	49.6	D	5.1	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	57.3	E	43.6	D	29.0	C	27.1	C
		WB	59.3	E	51.5	D	13.0	B		
		NB	55.0	D	21.3	C	5.5	A		
		SB	38.9	D	18.8	B	6.5	A		
Vierling Drive & 12th Avenue	Unsignalized	EB	--	--	0.8	A	0.4	A	2.9	A
		WB	3.8	A	0.5	A	--	--		
		NB	9.3	A	1.2	A	3.8	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Signalized	EB	8.3	A	9.7	A	6.8	A	9.2	A
		WB	12.0	B	10.8	B	8.6	A		
		NB	7.2	A	8.7	A	4.6	A		
		SB	7.9	A	8.4	A	5.6	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah Drive	Unsignalized	EB	4.4	A	5.8	A	--	--	2.5	A
		WB	--	--	6.0	A	2.8	A		
		NB	--	--	--	--	--	--		
		SB	0.2	A	--	--	0.2	A		

Phase 1 Build (2020) Intersection Level of Service Summary (AM Peak Hour)										
Intersection	**Type of Control**	**Approach**	**Left**		**Through**		**Right**		**Overall Intersection**	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	12.1	B	--	--	4.7	A	3.2	A
		WB	--	--	--	--	--	--		
		NB	3.1	A	3.3	A	--	--		
		SB	--	--	0.3	A	0.1	A		
CSAH 83 & 12th Avenue	Signalized	EB	34.4	C	51.4	D	5.1	A	13.8	B
		WB	40.9	D	50.8	D	20.2	C		
		NB	10.1	B	8.4	A	6.7	A		
		SB	22.1	C	13.7	B	2.1	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	24.0	C
		WB	33.8	C	--	--	36.2	D		
		NB	39.6	D	15.3	B	--	--		
		SB	--	--	17.2	B	3.3	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	47.3	D	--	--	7.1	A	18.7	B
		WB	--	--	--	--	--	--		
		NB	--	--	15.6	B	11.5	B		
		SB	68.1	E	7.7	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	65.1	E	36.1	D	9.9	A	120.6	F
		WB	56.0	E	44.9	D	25.2	C		
		NB	147.7	F	200.2	F	239.7	F		
		SB	43.8	D	13.8	B	4.5	A		
Vierling Drive & 12th Avenue	Roundabout	EB	--	--	4.3	A	4.3	A	3.4	A
		WB	0.0	A	0.0	A	--	--		
		NB	3.8	A	--	--	5.2	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Roundabout	EB	5.8	A	5.7	A	5.7	A	5.8	A
		WB	5.9	A	5.9	A	5.8	A		
		NB	6.2	A	6.2	A	6.1	A		
		SB	4.9	A	4.9	A	4.8	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah	Unsignalized	EB	4.5	A	6.0	A	0.0	A	2.9	A
		WB	0.0	A	5.9	A	2.2	A		
		NB	0.0	A	0.2	A	0.0	A		
		SB	1.5	A	0.0	A	0.1	A		
Eagle Creek Boulevard & Site Driveway	Unsignalized	EB	12.6	B	8.5	A	--	--	8.1	A
		WB	--	--	8.3	A	5.8	A		
		NB	--	--	--	--	--	--		
		SB	4.8	A	--	--	3.0	A		
Shenandoah Drive & Apartments Driveway	Roundabout	EB	4.7	A	--	--	4.7	A	4.4	A
		WB	--	--	--	--	--	--		
		NB	4.2	A	4.2	A	--	--		
		SB	--	--	3.7	A	3.7	A		
Shenandoah Drive/12th Ave S/Site Road	Roundabout	EB	--	--	4.5	A	4.5	A	4.3	A
		WB	4.1	A	4.1	A	--	--		
		NB	3.7	A	--	--	3.7	A		
		SB	--	--	--	--	--	--		

Phase 1 Build (2020) Intersection Level of Service Summary (PM Peak Hour)										
Intersection	**Type of Control**	**Approach**	**Left**		**Through**		**Right**		**Overall Intersection**	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	10.4	B	--	--	4.7	A	1.7	A
		WB	--	--	--	--	--	--		
		NB	4.3	A	2.2	A	--	--		
		SB	--	--	0.8	A	0.5	A		
CSAH 83 & 12th Avenue	Signalized	EB	32.9	C	59.3	E	14.8	B	26.9	C
		WB	52.9	D	33.9	C	15.3	B		
		NB	21.1	C	12.9	B	3.6	A		
		SB	18.8	B	25.5	C	4.5	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	29.3	C
		WB	45.8	D	16.6	B	10.2	B		
		NB	35.3	D	17.4	B	--	--		
		SB	--	--	30.7	C	6.5	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	53.1	D	--	--	20.3	C	16.2	B
		WB	--	--	--	--	--	--		
		NB	--	--	13.8	B	9.9	A		
		SB	50.1	D	5.5	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	58.4	E	39.6	D	28.7	C	28.2	C
		WB	56.8	E	54.0	D	15.9	B		
		NB	55.3	E	22.8	C	5.5	A		
		SB	38.4	D	21.2	C	6.8	A		
Vierling Drive & 12th Avenue	Roundabout	EB	--	--	6.4	A	6.4	A	2.4	A
		WB	0.0	A	0.0	A	--	--		
		NB	4.4	A	--	--	4.2	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Roundabout	EB	7.0	A	6.9	A	6.9	A	6.7	A
		WB	6.4	A	6.4	A	6.4	A		
		NB	5.7	A	5.7	A	6.0	A		
		SB	7.6	A	7.6	A	7.4	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah	Unsignalized	EB	4.7	A	5.7	A	0.0	A	2.2	A
		WB	0.0	A	6.3	A	2.3	A		
		NB	0.0	A	0.0	A	0.0	A		
		SB	1.9	A	0.6	A	0.3	A		
Eagle Creek Boulevard & Site Driveway	Unsignalized	EB	6.5	A	2.7	A	--	--	2.7	A
		WB	--	--	2.3	A	2.6	A		
		NB	--	--	--	--	--	--		
		SB	10.5	B	--	--	3.6	A		
Shenandoah Drive & Apartments Driveway	Roundabout	EB	4.5	A	--	--	4.5	A	5.2	A
		WB	--	--	--	--	--	--		
		NB	5.4	A	5.4	A	--	--		
		SB	--	--	5.3	A	5.3	A		
Shenandoah Drive/12th Ave S/Site Road	Roundabout	EB	--	--	4.9	A	4.9	A	5.0	A
		WB	5.2	A	5.2	A	--	--		
		NB	4.4	A	--	--	4.4	A		
		SB	--	--	--	--	--	--		

Phase 1 Build (2020) with Mitigations Intersection Level of Service Summary (AM Peak Hour)										
Intersection	**Type of Control**	**Approach**	**Left**		**Through**		**Right**		**Overall Intersection**	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	11.6	B	--	--	4.0	A	3.4	A
		WB	--	--	--	--	--	--		
		NB	3.7	A	3.5	A	--	--		
		SB	--	--	0.4	A	0.2	A		
CSAH 83 & 12th Avenue	Signalized	EB	34.5	C	52.8	D	4.9	A	14.6	B
		WB	39.5	D	52.7	D	21.9	C		
		NB	11.0	B	9.4	A	7.2	A		
		SB	21.0	C	12.8	B	2.1	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	26.6	C
		WB	35.8	D	--	--	43.9	D		
		NB	39.9	D	16.0	B	--	--		
		SB	--	--	16.6	B	3.6	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	48.3	D	--	--	7.4	A	18.2	B
		WB	--	--	--	--	--	--		
		NB	--	--	12.2	B	12.4	B		
		SB	68.0	E	7.7	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	60.1	E	37.2	D	9.8	A	25.9	C
		WB	44.0	D	43.9	D	17.4	B		
		NB	40.5	D	21.0	C	19.6	B		
		SB	47.4	D	14.0	B	4.2	A		
Vierling Drive & 12th Avenue	Roundabout	EB	--	--	4.3	A	4.3	A	3.4	A
		WB	0.0	A	0.0	A	--	--		
		NB	3.8	A	--	--	5.2	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Roundabout	EB	5.8	A	5.7	A	5.7	A	5.8	A
		WB	5.9	A	5.9	A	5.8	A		
		NB	6.2	A	6.2	A	6.1	A		
		SB	4.9	A	4.9	A	4.8	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah Drive	Unsignalized	EB	4.4	A	6.4	A	0.0	A	2.8	A
		WB	0.0	A	5.7	A	2.1	A		
		NB	0.0	A	0.2	A	0.0	A		
		SB	1.7	A	0.1	A	0.2	A		
Eagle Creek Boulevard & Site Driveway	Unsignalized	EB	8.4	A	8.7	A	--	--	8.3	A
		WB	--	--	8.4	A	5.8	A		
		NB	--	--	--	--	--	--		
		SB	5.3	A	--	--	2.9	A		
Shenandoah Drive & Apartments Driveway	Roundabout	EB	4.7	A	--	--	4.7	A	4.4	A
		WB	--	--	--	--	--	--		
		NB	4.2	A	4.2	A	--	--		
		SB	--	--	3.7	A	3.7	A		
Shenandoah Drive/12th Ave S/Site Road	Roundabout	EB	--	--	4.5	A	4.5	A	4.3	A
		WB	4.1	A	4.1	A	--	--		
		NB	3.7	A	--	--	3.7	A		
		SB	--	--	--	--	--	--		

Phase 1 Build (2020) with Mitigations Intersection Level of Service Summary (PM Peak Hour)										
Intersection	**Type of Control**	**Approach**	**Left**		**Through**		**Right**		**Overall Intersection**	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	9.8	A	--	--	4.9	A	1.8	A
		WB	--	--	--	--	--	--		
		NB	4.1	A	2.2	A	--	--		
		SB	--	--	0.8	A	0.6	A		
CSAH 83 & 12th Avenue	Signalized	EB	35.3	D	58.2	E	14.9	B	26.9	C
		WB	50.6	D	35.0	C	20.5	C		
		NB	20.0	B	12.8	B	3.7	A		
		SB	18.4	B	26.8	C	4.7	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	29.5	C
		WB	47.3	D	44.6	D	10.3	B		
		NB	34.4	C	16.3	B	--	--		
		SB	--	--	30.3	C	6.6	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	56.1	E	--	--	20.5	C	16.5	B
		WB	--	--	--	--	--	--		
		NB	--	--	14.3	B	10.8	B		
		SB	50.3	D	5.2	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	58.2	E	44.8	D	28.5	C	27.7	C
		WB	59.4	E	50.8	D	11.1	B		
		NB	55.4	E	20.1	C	14.6	B		
		SB	39.4	D	20.8	C	7.0	A		
Vierling Drive & 12th Avenue	Roundabout	EB	--	--	6.4	A	6.4	A	2.4	A
		WB	0.0	A	0.0	A	--	--		
		NB	4.4	A	--	--	4.2	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Roundabout	EB	7.0	A	6.9	A	6.9	A	6.7	A
		WB	6.4	A	6.4	A	6.4	A		
		NB	5.7	A	5.7	A	6.0	A		
		SB	7.6	A	7.6	A	7.4	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah Drive	Unsignalized	EB	4.4	A	5.9	A	0.0	A	2.2	A
		WB	0.0	A	6.5	A	2.1	A		
		NB	0.0	A	0.4	A	0.0	A		
		SB	1.9	A	0.4	A	0.2	A		
Eagle Creek Boulevard & Site Driveway	Unsignalized	EB	6.8	A	2.9	A	--	--	2.9	A
		WB	--	--	2.3	A	2.2	A		
		NB	--	--	--	--	--	--		
		SB	12.2	B	--	--	4.4	A		
Shenandoah Drive & Apartments Driveway	Roundabout	4.5	3.7	A	--	--	4.5	A	5.2	A
		--	--	--	--	--	--	--		
		5.4	4.1	A	5.4	A	--	--		
		--	--	--	5.3	A	5.3	A		
Shenandoah Drive/12th Ave S/Site Road	Roundabout	--	--	--	4.9	A	4.9	A	5.0	A
		5.2	4.1	A	5.2	A	--	--		
		4.4	3.8	A	--	--	4.4	A		
		--	--	--	--	--	--	--		

Full-Build Background (2025) Intersection Level of Service Summary (AM Peak Hour)										
Intersection	**Type of Control**	**Approach**	**Left**		**Through**		**Right**		**Overall Intersection**	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	14.8	B	--	--	4.0	A	3.6	A
		WB	--	--	--	--	--	--		
		NB	3.2	A	3.8	A	--	--		
		SB	--	--	0.3	A	0.2	A		
CSAH 83 & 12th Avenue	Signalized	EB	37.2	D	54.0	D	4.9	A	15.1	B
		WB	37.9	D	50.1	D	19.2	B		
		NB	12.4	B	9.8	A	7.8	A		
		SB	27.3	C	14.2	B	2.1	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	35.4	D
		WB	48.9	D	--	--	67.2	E		
		NB	39.2	D	17.5	B	--	--		
		SB	--	--	18.2	B	3.6	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	57.8	E	--	--	7.8	A	20.7	C
		WB	--	--	--	--	--	--		
		NB	--	--	13.9	B	14.5	B		
		SB	67.7	E	8.1	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	51.5	D	33.9	C	9.3	A	26.3	C
		WB	33.2	C	44.1	D	20.0	B		
		NB	41.1	D	23.7	C	21.8	C		
		SB	46.2	D	14.4	B	4.5	A		
Vierling Drive & 12th Avenue	Unsignalized	EB	--	--	0.2	A	0.1	A	2.1	A
		WB	2.4	A	0.5	A	--	--		
		NB	6.5	A	--	--	4.5	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Unsignalized	EB	8.3	A	8.6	A	4.9	A	8.2	A
		WB	9.9	A	9.0	A	10.5	B		
		NB	6.2	A	8.2	A	5.3	A		
		SB	6.4	A	7.3	A	3.4	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah Drive	Unsignalized	EB	4.5	A	6.3	A	--	--	2.3	A
		WB	--	--	5.0	A	2.6	A		
		NB	--	--	--	--	--	--		
		SB	1.8	A	--	--	0.0	A		

Full-Build Background (2025) Intersection Level of Service Summary (AM Peak Hour)										
Intersection	**Type of Control**	**Approach**	**Left**		**Through**		**Right**		**Overall Intersection**	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	9.6	A	--	--	4.5	A	1.5	A
		WB	--	--	--	--	--	--		
		NB	5.1	A	1.2	A	--	--		
		SB	--	--	0.8	A	0.5	A		
CSAH 83 & 12th Avenue	Signalized	EB	35.6	D	57.0	E	13.3	B	23.5	C
		WB	38.1	D	36.7	D	22.3	C		
		NB	23.0	C	11.4	B	3.9	A		
		SB	18.9	B	22.9	C	4.5	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	33.3	C
		WB	51.8	D	0.0	A	13.7	B		
		NB	34.0	C	16.6	B	--	--		
		SB	--	--	35.9	D	7.8	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	55.7	E	--	--	21.4	C	16.5	B
		WB	--	--	--	--	--	--		
		NB	--	--	14.4	B	12.4	B		
		SB	45.8	D	5.8	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	59.3	E	43.6	D	33.6	C	29.4	C
		WB	58.1	E	52.9	D	11.5	B		
		NB	56.6	E	20.5	C	17.6	B		
		SB	40.8	D	22.8	C	7.4	A		
Vierling Drive & 12th Avenue	Unsignalized	EB	--	--	0.6	A	0.3	A	3.2	A
		WB	4.2	A	0.6	A	--	--		
		NB	12.0	B	1.8	A	3.8	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Unsignalized	EB	9.4	A	10.3	B	6.5	A	10.2	B
		WB	13.2	B	12.4	B	10.2	B		
		NB	8.2	A	9.9	A	4.9	A		
		SB	8.3	A	9.1	A	6.7	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah Drive	Unsignalized	EB	4.2	A	5.9	A	--	--	1.6	A
		WB	--	--	6.7	A	2.2	A		
		NB	--	--	--	--	--	--		
		SB	1.8	A	--	--	0.2	A		

Full-Build Build (2025) Intersection Level of Service Summary (AM Peak Hour)										
Intersection	**Type of Control**	**Approach**	**Left**		**Through**		**Right**		**Overall Intersection**	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	14.5	B	--	--	5.2	A	3.8	A
		WB	--	--	--	--	--	--		
		NB	3.8	A	3.7	A	--	--		
		SB	--	--	0.4	A	0.1	A		
CSAH 83 & 12th Avenue	Signalized	EB	36.1	D	52.9	D	6.2	A	15.2	B
		WB	42.5	D	49.9	D	19.0	B		
		NB	12.1	B	10.0	A	7.8	A		
		SB	21.5	C	15.4	B	2.7	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	58.5	E
		WB	99.8	F	--	--	126.7	F		
		NB	42.6	D	18.2	B	--	--		
		SB	--	--	19.0	B	3.8	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	59.5	E	--	--	10.0	A	22.9	C
		WB	--	--	--	--	--	--		
		NB	--	--	15.8	B	16.7	B		
		SB	69.2	E	8.9	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	100+	F	34.8	C	11.5	B	53.8	D
		WB	59.4	E	43.2	D	21.5	C		
		NB	42.8	D	27.8	C	28.2	C		
		SB	44.1	D	16.7	B	5.4	A		
Vierling Drive & 12th Avenue	Roundabout	EB	--	--	6.2	A	6.2	A	4.5	A
		WB	0.0	A	0.0	A	--	--		
		NB	5.2	A	--	--	6.2	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Roundabout	EB	7.2	A	7.2	A	7.2	A	7.2	A
		WB	7.3	A	7.2	A	7.2	A		
		NB	8.0	A	7.9	A	7.8	A		
		SB	5.9	A	5.8	A	5.8	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah Drive	Unsignalized	EB	4.6	A	6.4	A	0.0	A	2.2	A
		WB	0.0	A	6.3	A	2.4	A		
		NB	0.0	A	0.4	A	0.0	A		
		SB	2.1	A	0.1	A	0.1	A		
Eagle Creek Boulevard & Site Driveway	Unsignalized	EB	11.8	B	9.5	A	--	--	8.4	A
		WB	--	--	9.0	A	6.5	A		
		NB	--	--	--	--	--	--		
		SB	5.9	A	--	--	3.3	A		
Shenandoah Drive & Driveway 2 (North Townhomes Access)	Roundabout	EB	4.2	A	4.2	A	4.2	A	4.4	A
		WB	3.8	A	3.8	A	3.8	A		
		NB	3.7	A	3.7	A	3.7	A		
		SB	4.7	A	4.7	A	4.7	A		
Shenandoah Drive & Driveway 1 (Apartment Access)	Roundabout	EB	5.9	A	--	--	5.9	A	5.2	A
		WB	--	--	--	--	--	--		
		NB	4.8	A	4.8	A	--	--		
		SB	--	--	4.5	A	4.5	A		
Shenandoah Drive & Driveway 3 (South Townhomes Access)	Unsignalized	EB	7.6	A	--	--	4.0	A	1.3	A
		WB	--	--	--	--	--	--		
		NB	2.9	A	0.5	A	--	--		
		SB	--	--	0.7	A	0.2	A		
Shenandoah Drive/12th Ave S/Site Road	Roundabout	EB	--	--	6.9	A	6.9	A	6.1	A
		WB	5.1	A	5.1	A	--	--		
		NB	5.1	A	--	--	5.1	A		
		SB	--	--	--	--	--	--		
12th Ave S & Driveway 5 (West Retail Access)	Unsignalized	EB	--	--	0.5	A	0.2	A	1.2	A
		WB	3.1	A	0.6	A	--	--		
		NB	7.7	A	--	--	3.5	A		
		SB	--	--	--	--	--	--		
12th Ave S & Driveway 6 (East Retail Access)	Unsignalized	EB	--	--	0.6	A	0.2	A	1.1	A
		WB	3.0	A	0.7	A	--	--		
		NB	5.8	A	--	--	3.4	A		
		SB	--	--	--	--	--	--		
Proposed North/Sotuh Road & Driveway 4 (Retail Access)	Unsignalized	EB	5.3	A	0.0	A	2.7	A	1.2	A
		WB	5.7	A	0.0	A	2.7	A		
		NB	2.3	A	0.5	A	0.3	A		
		SB	0.0	A	0.2	A	0.1	A		

Full-Build Build (2025) Intersection Level of Service Summary (PM Peak Hour)										
Intersection	Type of Control	Approach	Left		Through		Right		Overall Intersection	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	11.3	B	--	--	5.8	A	2.2	A
		WB	--	--	--	--	--	--		
		NB	5.6	A	2.3	A	--	--		
		SB	--	--	1.0	A	0.9	A		
CSAH 83 & 12th Avenue	Signalized	EB	33.7	C	60.2	E	23.9	C	36.1	D
		WB	76.6	E	35.6	D	22.6	C		
		NB	30.2	C	13.2	B	4.2	A		
		SB	24.0	C	35.7	D	6.1	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	36.8	D
		WB	62.1	E	--	--	21.8	C		
		NB	31.0	C	16.9	B	--	--		
		SB	--	--	34.4	C	7.8	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	57.6	E	--	--	27.8	C	17.4	B
		WB	--	--	--	--	--	--		
		NB	--	--	15.4	B	13.0	B		
		SB	46.6	D	6.2	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	64.5	E	41.9	D	32.1	C	30.4	C
		WB	58.3	E	51.2	D	13.7	B		
		NB	54.4	D	21.7	C	16.2	B		
		SB	41.7	D	25.5	C	10.2	B		
Vierling Drive & 12th Avenue	Roundabout	EB	--	--	8.0	A	8.0	A	3.2	A
		WB	0.0	A	0.0	A	--	--		
		NB	5.5	A	--	--	4.4	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Roundabout	EB	8.2	A	8.2	A	8.1	A	8.1	A
		WB	8.0	A	7.9	A	7.9	A		
		NB	7.0	A	7.0	A	6.8	A		
		SB	9.4	A	9.3	A	9.1	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah Drive	Unsignalized	EB	4.5	A	6.2	A	0.0	A	2.0	A
		WB	0.0	A	6.8	A	2.4	A		
		NB	0.0	A	0.6	A	0.0	A		
		SB	2.0	A	0.5	A	0.3	A		
Eagle Creek Boulevard & Site Driveway	Unsignalized	EB	9.5	A	3.2	A	--	--	4.2	A
		WB	--	--	2.7	A	2.9	A		
		NB	--	--	--	--	--	--		
		SB	18.3	B	--	--	4.3	A		
Shenandoah Drive & Driveway 2 (North Townhomes Access)	Roundabout	EB	4.5	A	4.5	A	4.5	A	5.1	A
		WB	5.2	A	5.2	A	5.2	A		
		NB	5.2	A	5.2	A	5.2	A		
		SB	4.7	A	4.7	A	4.7	A		
Shenandoah Drive & Driveway 1 (Apartment Access)	Roundabout	EB	5.2	A	--	--	5.2	A	6.6	A
		WB	--	--	--	--	--	--		
		NB	6.9	A	6.9	A	--	--		
		SB	--	--	6.6	A	6.6	A		
Shenandoah Drive & Driveway 3 (South Townhomes Access)	Unsignalized	EB	10.2	B	--	--	4.1	A	1.4	A
		WB	--	--	--	--	--	--		
		NB	3.2	A	1.0	A	--	--		
		SB	--	--	0.7	A	0.6	A		
Shenandoah Drive/12th Ave S/Site Road	Roundabout	EB	--	--	6.3	A	6.3	A	6.9	A
		WB	7.8	A	7.8	A	--	--		
		NB	5.7	A	--	--	5.7	A		
		SB	--	--	--	--	--	--		
12th Ave S & Driveway 5 (West Retail Access)	Unsignalized	EB	--	--	0.4	A	0.2	A	1.0	A
		WB	2.9	A	0.6	A	--	--		
		NB	7.6	A	--	--	3.3	A		
		SB	--	--	--	--	--	--		
12th Ave S & Driveway 6 (East Retail Access)	Unsignalized	EB	--	--	0.5	A	0.3	A	1.2	A
		WB	3.1	A	0.7	A	--	--		
		NB	8.4	A	--	--	4.3	A		
		SB	--	--	--	--	--	--		
Proposed North/Sotuh Road & Driveway 4 (Retail Access)	Unsignalized	EB	4.6	A	0.0	A	2.6	A	1.2	A
		WB	5.4	A	0.0	A	2.5	A		
		NB	1.9	A	0.4	A	0.3	A		
		SB	0.0	A	0.2	A	0.1	A		

Full-Build Build (2025) with Mitigations Intersection Level of Service Summary (AM Peak Hour)										
Intersection	Type of Control	Approach	Left		Through		Right		Overall Intersection	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	16.6	B	--	--	7.1	A	4.2	A
		WB	--	--	--	--	--	--		
		NB	4.2	A	4.1	A	--	--		
		SB	--	--	0.4	A	0.2	A		
CSAH 83 & 12th Avenue	Signalized	EB	40.7	D	43.4	D	5.6	A	15.4	B
		WB	50.8	D	51.8	D	20.4	C		
		NB	12.6	B	10.0	A	8.9	A		
		SB	25.3	C	13.1	B	2.8	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	20.3	C
		WB	33.7	C	--	--	18.3	B		
		NB	35.6	D	18.0	B	--	--		
		SB	--	--	17.9	B	3.2	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	38.2	D	--	--	8.1	A	23.3	C
		WB	--	--	--	--	--	--		
		NB	--	--	27.2	C	19.1	B		
		SB	66.7	E	6.9	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	67.5	E	36.0	D	10.9	B	31.5	C
		WB	55.3	E	46.3	D	21.1	C		
		NB	44.7	D	29.0	C	31.8	C		
		SB	42.6	D	17.3	B	5.5	A		
Vierling Drive & 12th Avenue	Roundabout	EB	--	--	6.2	A	6.2	A	4.5	A
		WB	0.0	A	0.0	A	--	--		
		NB	5.2	A	--	--	6.2	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Roundabout	EB	7.2	A	7.2	A	7.2	A	7.2	A
		WB	7.3	A	7.2	A	7.2	A		
		NB	8.0	A	7.9	A	7.8	A		
		SB	5.9	A	5.8	A	5.8	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah Drive	Unsignalized	EB	4.7	A	6.1	A	0.0	A	2.3	A
		WB	2.3	A	5.9	A	2.5	A		
		NB	0.0	A	0.4	A	0.0	A		
		SB	1.7	A	0.1	A	0.0	A		
Eagle Creek Boulevard & Site Driveway	Unsignalized	EB	10.9	B	9.5	A	--	--	8.4	A
		WB	--	--	8.8	A	6.5	A		
		NB	--	--	--	--	--	--		
		SB	5.8	A	--	--	3.7	A		
Shenandoah Drive & Driveway 2 (North Townhomes Access)	Roundabout	EB	4.2	A	4.2	A	4.2	A	4.4	A
		WB	3.8	A	3.8	A	3.8	A		
		NB	3.7	A	3.7	A	3.7	A		
		SB	4.7	A	4.7	A	4.7	A		
Shenandoah Drive & Driveway 1 (Apartment Access)	Roundabout	EB	5.9	A	--	--	5.9	A	5.2	A
		WB	--	--	--	--	--	--		
		NB	4.8	A	4.8	A	--	--		
		SB	--	--	4.5	A	4.5	A		
Shenandoah Drive & Driveway 3 (South Townhomes Access)	Unsignalized	EB	7.8	A	--	--	4.1	A	1.5	A
		WB	--	--	--	--	--	--		
		NB	2.9	A	0.5	A	--	--		
		SB	--	--	0.6	A	0.5	A		
Shenandoah Drive/12th Ave S/Site Road	Roundabout	EB	--	--	6.9	A	6.9	A	6.1	A
		WB	5.1	A	5.1	A	--	--		
		NB	5.1	A	--	--	5.1	A		
		SB	--	--	--	--	--	--		
12th Ave S & Driveway 5 (West Retail Access)	Unsignalized	EB	--	--	0.5	A	0.2	A	1.1	A
		WB	3.2	A	0.7	A	--	--		
		NB	7.3	A	--	--	3.4	A		
		SB	--	--	--	--	--	--		
12th Ave S & Driveway 6 (East Retail Access)	Unsignalized	EB	--	--	0.6	A	0.3	A	1.1	A
		WB	3.2	A	0.8	A	--	--		
		NB	7.0	A	--	--	3.1	A		
		SB	--	--	--	--	--	--		
Proposed North/Sotuh Road & Driveway 4 (Retail Access)	Unsignalized	EB	5.1	A	0.0	A	2.8	A	1.2	A
		WB	4.9	A	0.0	A	2.7	A		
		NB	2.0	A	0.5	A	0.3	A		
		SB	0.0	A	0.2	A	0.1	A		

Full-Build Build (2025) with Mitigations Intersection Level of Service Summary (AM Peak Hour)										
Intersection	Type of Control	Approach	Left		Through		Right		Overall Intersection	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
CSAH 83 & Shenandoah Drive	Unsignalized	EB	14.3	B	--	--	5.7	A	2.2	A
		WB	--	--	--	--	--	--		
		NB	5.0	A	2.3	A	--	--		
		SB	--	--	1.1	A	0.7	A		
CSAH 83 & 12th Avenue	Signalized	EB	29.2	C	55.8	E	18.2	B	30.9	C
		WB	53.8	D	36.2	D	19.0	B		
		NB	32.0	C	13.8	B	4.2	A		
		SB	25.0	C	36.7	D	6.3	A		
CSAH 83 & WB US 169 Ramps	Signalized	EB	--	--	--	--	--	--	33.7	C
		WB	48.4	D	--	--	15.9	B		
		NB	43.2	D	22.6	C	--	--		
		SB	--	--	36.9	D	8.3	A		
CSAH 83 & EB US 169 Ramps	Signalized	EB	48.9	D	--	--	25.4	C	18.0	B
		WB	--	--	--	--	--	--		
		NB	--	--	9.7	A	6.6	A		
		SB	61.3	E	7.8	A	--	--		
CSAH 83 & Eagle Creek Boulevard	Signalized	EB	74.4	E	42.5	D	33.2	C	29.6	C
		WB	63.4	E	52.7	D	13.5	B		
		NB	64.5	E	20.0	B	16.7	B		
		SB	42.7	D	18.4	B	8.8	A		
Vierling Drive & 12th Avenue	Roundabout	EB	--	--	8.0	A	8.0	A	3.2	A
		WB	0.0	A	0.0	A	--	--		
		NB	5.5	A	--	--	4.4	A		
		SB	--	--	--	--	--	--		
Vierling Drive & Eagle Creek Boulevard	Roundabout	EB	8.2	A	8.2	A	8.1	A	8.1	A
		WB	8.0	A	7.9	A	7.9	A		
		NB	7.0	A	7.0	A	6.8	A		
		SB	9.4	A	9.3	A	9.1	A		
Eastway Avenue/ Barenscheer Boulevard & Shenandoah Drive	Unsignalized	EB	4.9	A	6.1	A	0.0	A	2.0	A
		WB	0.0	A	6.6	A	2.3	A		
		NB	0.0	A	0.4	A	0.0	A		
		SB	2.1	A	0.4	A	0.2	A		
Eagle Creek Boulevard & Site Driveway	Unsignalized	EB	8.9	A	3.3	A	--	--	4.2	A
		WB	--	--	2.7	A	2.8	A		
		NB	--	--	--	--	--	--		
		SB	17.9	B	--	--	4.7	A		
Shenandoah Drive & Driveway 2 (North Townhomes Access)	Roundabout	EB	4.5	A	4.5	A	4.5	A	5.1	A
		WB	5.2	A	5.2	A	5.2	A		
		NB	5.2	A	5.2	A	5.2	A		
		SB	4.7	A	4.7	A	4.7	A		
Shenandoah Drive & Driveway 1 (Apartment Access)	Roundabout	EB	5.2	A	--	--	5.2	A	6.6	A
		WB	--	--	--	--	--	--		
		NB	6.9	A	6.9	A	--	--		
		SB	--	--	6.6	A	6.6	A		
Shenandoah Drive & Driveway 3 (South Townhomes Access)	Unsignalized	EB	8.9	A	--	--	3.9	A	1.3	A
		WB	--	--	--	--	--	--		
		NB	3.2	A	1.0	A	--	--		
		SB	--	--	0.6	A	0.6	A		
Shenandoah Drive/12th Ave S/Site Road	Roundabout	EB	--	--	6.3	A	6.3	A	6.9	A
		WB	7.8	A	7.8	A	--	--		
		NB	5.7	A	--	--	5.7	A		
		SB	--	--	--	--	--	--		
12th Ave S & Driveway 5 (West Retail Access)	Unsignalized	EB	--	--	0.4	A	0.2	A	1.0	A
		WB	2.9	A	0.7	A	--	--		
		NB	7.1	A	--	--	3.3	A		
		SB	--	--	--	--	--	--		
12th Ave S & Driveway 6 (East Retail Access)	Unsignalized	EB	--	--	0.5	A	0.3	A	1.1	A
		WB	2.6	A	0.7	A	--	--		
		NB	7.5	A	--	--	4.0	A		
		SB	--	--	--	--	--	--		
Proposed North/Sotuh Road & Driveway 4 (Retail Access)	Unsignalized	EB	4.1	A	0.0	A	2.5	A	1.3	A
		WB	5.1	A	0.0	A	2.7	A		
		NB	1.7	A	0.4	A	0.2	A		
		SB	0.0	A	0.2	A	0.1	A		

CSAH 83 and Barenscheer Boulevard Queue Analysis																	
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)													
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Left/Right	500+		55	60	59	54	62	57	60	61	59	61	77	73	78	75
Northbound	Left/Through	500+		31	43	31	42	25	36	36	34	34	44	37	44	40	38
Southbound	Through/Right	500+		0	7	0	3	0	0	0	0	0	0	0	0	0	6

CSAH 83 and 12th Avenue E Queue Analysis																	
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)													
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Left	250		95	39	99	41	113	49	111	46	104	48	135	56	138	62
	Through	500+		110	95	112	89	141	93	131	94	143	99	158	134	124	94
	Right	250		35	113	42	106	44	122	45	124	37	108	62	200	64	147
Westbound	Left	500+		97	507	146	511	109	512	115	474	84	251	126	748	141	581
	Through/Right	500+		74	154	65	144	79	159	83	142	85	159	77	219	96	192
Northbound	Left	350		123	114	104	132	118	133	130	128	141	158	151	219	164	221
	Through	500+		111	60	145	61	112	66	126	66	128	60	131	71	164	64
	Right	225		102	42	97	51	112	46	121	46	126	52	125	55	172	54
Southbound	Left	325		35	48	50	63	42	61	41	36	43	58	42	56	44	68
	Through	500+		60	170	49	171	65	175	64	191	73	180	59	235	61	222
	Right	250		36	51	34	53	39	58	40	56	42	75	47	111	48	105

CSAH 83 and WB 169 Ramp Queue Analysis																	
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)													
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Westbound	Left/Through	400		254	385	335	428	451	514	606	497	1067	740	1688	898	308	632
	Right	400		364	136	400	183	436	263	462	261	489	367	485	480	228	367
Northbound	Left	300		84	96	88	98	68	101	72	93	74	103	90	107	85	107
	Through	500+		225	121	239	118	232	119	245	118	267	137	266	136	249	141
Southbound	Through	500+		75	347	79	356	104	391	106	385	106	437	147	450	135	480
	Right	550		43	95	37	102	44	99	45	106	45	120	44	119	42	132

CSAH 83 and EB 169 Ramp Queue Analysis																	
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)													
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Left/Through	500+		331	159	319	173	380	153	369	166	447	164	468	175	344	167
	Right	450		79	97	82	101	147	116	147	116	200	110	211	165	91	144
Northbound	Through	500+		143	141	153	130	152	157	126	147	145	172	168	185	239	122
	Right	400		124	151	133	156	123	168	181	187	202	221	240	230	254	84
Southbound	Left	200		71	227	62	222	84	229	89	232	78	227	118	236	121	226
	Through	500+		77	269	84	260	88	324	89	253	91	301	99	312	97	305

Movements shown in parenthesis are added in the Build Scenarios.
Queue lengths shown in italics are at proposed roundabouts.

CSAH 83 and Eagle Creek Boulevard Queue Analysis																	
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)													
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Left	225	350	208	180	238	179	251	193	241	204	221	212	314	248	351	291
	Through	500+		80	160	123	203	213	192	205	171	91	241	1606	227	264	232
	Right	200	350	78	220	71	221	91	227	87	232	82	252	100	248	105	245
Westbound	Left	450		20	35	20	44	22	41	20	43	22	41	23	40	22	40
	Through	500+		59	73	45	75	57	80	60	78	43	76	57	84	62	81
	Right	300		86	81	94	81	91	101	58	65	60	160	68	73	72	70
Northbound	Left	400		341	141	456	144	404	147	148	147	159	160	167	158	165	184
	Through	500+		1335	245	1794	261	2606	257	272	142	308	151	364	159	363	155
	(Through)/Right	300		173	29	203	58	234	29	291	178	326	186	378	187	388	178
Southbound	Left	550		72	119	71	127	65	122	69	124	72	135	68	130	75	145
	Through	500+		75	253	81	266	87	276	84	176	91	323	95	323	114	274
	Right	300		24	66	39	94	28	115	33	126	27	157	43	211	51	138

Vierling Drive and 12th Avenue E Queue Analysis																	
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)													
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Through/Right	500+		0	11	0	6	*8*	*19*	-	-	3	9	*30*	*33*	-	-
Westbound	Left	500+		14	63	40	62	*0*	*0*	-	-	20	73	*0*	*0*	-	-
	Through	500+		0	0	0	0	*0*	*0*	-	-	0	0	*0*	*0*	-	-
Northbound	Left	500+		37	51	0	48	*3*	*7*	-	-	42	53	*12*	*17*	-	-
	Right	500+		50	47	48	46	*18*	*5*	-	-	50	46	*23*	*6*	-	-

Vierling Drive and Eagle Creek Boulevard Queue Analysis																	
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)													
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Left/Through	500+		71	82	72	81	*18*	*21*	-	-	86	88	*29*	*28*	-	-
	Through/Right	500+		70	78	76	83	*17*	*20*	-	-	75	84	*27*	*26*	-	-
Westbound	Left/Through	500+		71	100	83	98	*16*	*24*	-	-	85	117	*25*	*35*	-	-
	Through/Right	500+		84	87	85	89	*15*	*22*	-	-	91	109	*23*	*33*	-	-
Northbound	Left/Through	500+		41	41	48	42	*10*	*6*	-	-	45	45	*16*	*11*	-	-
	Through/Right	500+		65	60	70	57	*10*	*8*	-	-	71	63	*16*	*11*	-	-
Southbound	Left/Through	500+		42	53	41	57	*4*	*17*	-	-	45	67	*8*	*23*	-	-
	Through/Right	500+		47	74	43	76	*3*	*16*	-	-	50	91	*7*	*22*	-	-

Eastway Avenue/Barenscheer Boulevard and Shenandoah Drive Queue Analysis																	
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)													
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Left/Through/(Right)	500+		54	43	52	46	36	27	34	27	38	30	37	27	35	29
Westbound	(Left) /Through/Right	500+		41	46	37	47	27	35	29	31	39	32	28	34	29	33
Northbound	(Left/Through/Right)	-	500+					0	0	0	0	0	0	0	0	0	0
Southbound	Left/ (Through)	500+		0	0	0	0	3	6	0	6	0	0	6	10	6	11
	Right	500+		0	3	0	0	0	0	0	0	0	0	0	3	0	3

Movements shown in parenthesis are added in the Build Scenarios.
Queue lengths shown in italics are at proposed roundabouts.

Eagle Creek Boulevard & Site Road Queue Analysis																			
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)															
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Left/Through	-		-	-	-	-	70	16	71	18	-	-	73	56	75	55
	Through	-		-	-	-	-	68	0	76	0	-	-	72	0	81	0
Westbound	Through	-		-	-	-	-	52	0	56	0	-	-	59	7	60	8
	Through/Right	-		-	-	-	-	64	0	66	0	-	-	72	0	71	7
Southbound	Left	-		-	-	-	-	51	43	52	46	-	-	61	83	59	76
	Right	-		-	-	-	-	34	28	33	26	-	-	53	47	46	53

Shenandoah Drive and North Townhomes Driveway Queue Analysis																			
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)															
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Left/Through/Right	-		-	-	-	-	-	-	-	-	-	-	*7*	*4*	-	-
Westbound	Left/Through/Right	-		-	-	-	-	-	-	-	-			*3*	*17*		
Northbound	Left/Through/Right	-		-	-	-	-	-	-	-	-	-	-	*14*	*216*	-	-
Southbound	Left/Through/Right	-		-	-	-	-	-	-	-	-	-	-	*3*	*5*	-	-

Shenandoah Drive and Apartment Driveway Queue Analysis																			
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)															
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Left/Right	-		-	-	-	-	14	8	-	-	-	-	*23*	*11*	-	-
Northbound	Left/Through	-		-	-	-	-	9	24	-	-	-	-	*16*	*45*	-	-
Southbound	Through/Right	-		-	-	-	-	3	16	-	-	-	-	*11*	*27*	-	-

Shenandoah Drive and South Townhomes Driveway Queue Analysis																			
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue															
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Left/Right	-		-	-	-	-	-	-	-	-	-	-	50	57	56	51
Northbound	Left/Through	-		-	-	-	-	-	-	-	-	-	-	35	50	37	58
Southbound	Through/Right	-		-	-	-	-	-	-	-	-	-	-	0	0	0	0

Shenandoah Drive & Site Road Queue Analysis																			
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)															
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Through/Right	-		-	-	-	-	*13*	*18*	-	-	-	-	*42*	*35*	-	-
Westbound	Left	-		-	-	-	-	*8*	*19*	-	-	-	-	*19*	*49*	-	-
	Through	-		-	-	-	-			-	-	-	-			-	-
Northbound	Left	-		-	-	-	-	*1*	*4*	-	-	-	-	*8*	*13*	-	-
	Right	-		-	-	-	-			-	-	-	-			-	-

Shenandoah Drive and Retail Driveway 3 Queue Analysis																			
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)															
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Through/Right	-		-	-	-	-	-	-	-	-	-	-	0	0	6	0
Westbound	Left/Through	-		-	-	-	-	-	-	-	-	-	-	38	27	45	40
Northbound	Left/Right	-		-	-	-	-	-	-	-	-	-	-	48	48	49	47

Movements shown in parenthesis are added in the Build Scenarios.
Queue lengths shown in italics are at proposed roundabouts.

Shenandoah Drive and Retail Driveway 4 Queue Analysis																			
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)															
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Through/Right	-		-	-	-	-	-	-	-	-	-	-	0	0	0	0
Westbound	Left/Through	-		-	-	-	-	-	-	-	-	-	-	35	33	42	26
Northbound	Left/Right	-		-	-	-	-	-	-	-	-	-	-	51	50	49	55

Shenandoah Drive and Retail Driveway 1/Driveway 2 Queue Analysis																	
Approach	Movement/Lane Group	Storage Distance (ft)		95th Percentile Queue (ft)													
				Existing		2020 No Build		2020 Build		2020 Build Mitigations		2025 No Build		2025 Build		2025 Build Mitigations	
		Existing	Proposed	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound	Left/Through/Right	-		-	-	-	-	-	-	-	-	-	-	44	39	45	39
Westbound	Left/Through/Right	-		-	-	-	-	-	-	-	-	-	-	45	51	46	51
Northbound	Left/Through	-		-	-	-	-	-	-	-	-	-	-	20	15	14	19
	Through/Right	-		-	-	-	-	-	-	-	-	-	-	0	0	0	0
Southbound	Left/Through	-		-	-	-	-	-	-	-	-	-	-	0	0	0	0
	Through/Right	-		-	-	-	-	-	-	-	-	-	-	0	0	0	0

Movements shown in parenthesis are added in the Build Scenarios.
Queue lengths shown in italics are at proposed roundabouts.