

US Highway 61 (Lake City) Scoping Study Hok-Si-La Park Road to Elm Street

Final Study Report

December 2015

Prepared for:

City of Lake City

In Cooperation with:

Minnesota Department of Transportation, Goodhue
County, and Wabasha County

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Final Study Report

US Highway 61 (Lake City) Scoping Study

Between Hok-Si-La Park Road and just south of Elm Street
Prepared for the City of Lake City, Minnesota

1.0 INTRODUCTION

The purpose of this Scoping Study was to identify and develop a conceptual alternative for corridor improvements along Highway 61 in Lake City in advance of MnDOT's programmed preservation project currently scheduled to occur in 2018. This technical planning study effort provided an opportunity for multiple jurisdictions (Lake City, MnDOT, Goodhue and Wabasha Counties) to work together in identifying future transportation investments that will support Lake City's vision of being a vibrant and healthy community that is supported by a state trunk highway corridor that enhances economic conditions, while preserving mobility and safety for the travelling public within the community and throughout the region.

This transportation study effort focused on the segment of Highway 61 from approximately the easterly edge of Hok-Si-La Park to just south of Elm Street (see *Figure 1* on the following page). As part of the planning process, the study corridor was subdivided into three distinct zones. The boundary of these zones was based on existing land use, pedestrian/bicycle needs, and traffic patterns.

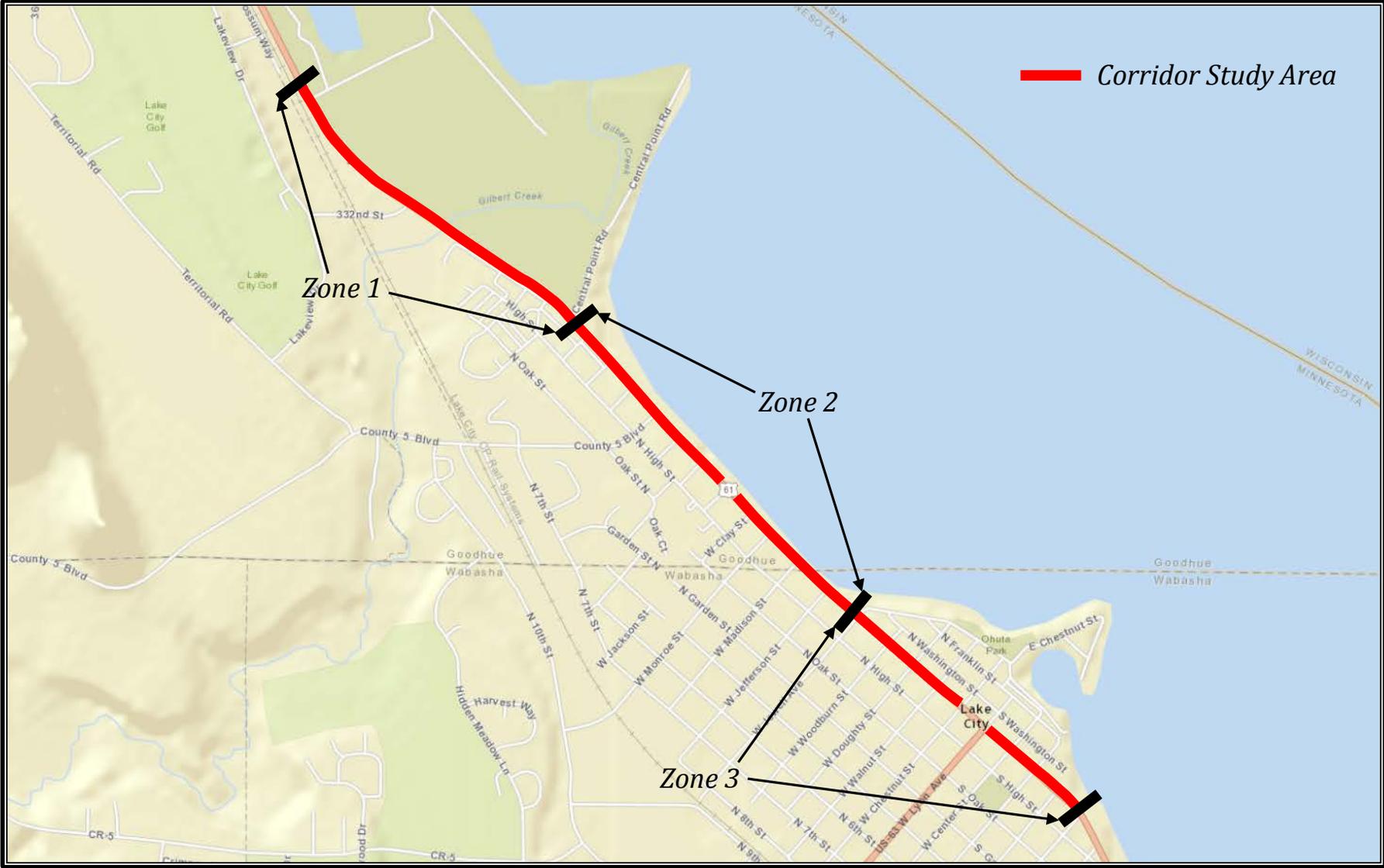
Beginning at the northwestern end of Lake City, the zones are as follows:

- Zone 1 – Hok-Si-La Park Road to Central Point Road
- Zone 2 – Central Point Road to Park Street/Jewell Avenue
- Zone 3 – Park Street/Jewell Avenue to just south of Elm Street

Another key task of this study was to inspect existing stormwater drainage along this section of Highway 61 and to evaluate possible areas where water quality best management practices (BMPs) could be incorporated into future reconstruction plans for the highway corridor. The implementation of water quality BMPs will reduce stormwater volume and pollution discharged to Lake Pepin.

The US Highway 61 Scoping Study has been developed with consideration of key findings related to the existing and future transportation and land use conditions in the study area and by integrating input from the Study Committee, which included members from the City of Lake City, the Minnesota Department of Transportation (MnDOT), Goodhue County, Wabasha County, and the Lake City Chamber of Commerce.

Figure 1 – Study Location Map



2.0 STUDY PROCESS OVERVIEW

The US Highway 61 Scoping Study planning process was kicked off in July 2015 and was conducted in four primary phases:

Data Collection, Stakeholder Involvement, Conceptual Design & Analysis, and Recommendations. The process was led by the Highway 61 Study Group consisting of staff from Lake City, MnDOT, Goodhue County, Wabasha County, the Lake City Chamber of Commerce, and Short Elliott Hendrickson (study consultant). The Study Group helped define the study area existing conditions and future transportation and land use needs.

Stakeholder Involvement Phase

The Study Group participants were actively involved during the entire study process. A series of Study Group meetings were held during the study process to identify

issues, conduct technical reviews of study materials, evaluate concepts, and make recommendations. City Public Works and Community Development staff also provided study progress reports to the City Council. A copy of the Study Group Meeting agendas and meeting minutes is included in *Appendix A*.

Data Collection Phase

During this phase of the study process the Study Group and consultant team compiled data through existing ordinances, plans, maps, studies, and GIS datasets. Site visits along the corridor were also conducted to compile and confirm essential baseline information. Study Group participants also helped capture areas of concern which assisted in the development of conceptual design options. Traffic turning movement counts at three key intersections were also collected in this phase of the project development process.

Conceptual Design and Analysis Phase

During the Conceptual Design and Analysis Phase, the Study Group gave thorough consideration to observations, existing conditions and data gathered from the previous phase. As shown in *Figure 1*, the study corridor was divided into three zones including: Zone 1 – Hok-Si-La Park Road to Central Point Road; Zone 2 – Central Point Road to



Park Street/Jewell Avenue; and Zone 3 – Park Street/Jewell Avenue to just south of Elm Street.

US Highway 61 typical sections and conceptual options were developed and evaluated for each zone. The conceptual layouts illustrated a combination of capacity changes, safety improvements, access modifications, and pedestrian enhancements. The Study Group provided feedback regarding critical transportation and land use issues and assisted in the refinement of the conceptual design options.

Recommendations Phase

The information developed and refined during the Conceptual Design and Analysis Phase along with feedback received from the US Highway 61 Study Group was used to finalize the study recommendations and prepare planning level cost estimates. The recommendations from this study process and presented in this study report are expected to be utilized as a tool for guiding the City's pursuit of reconstructing the highway section as part of MnDOT's planned preservation project, which is currently programmed for 2018.

3.0 STUDY BACKGROUND

In southeastern Minnesota, US Highway 61 serves as a vital link between trade centers and employment nodes for local residents, commuters, and businesses. Not only does it carry local and regional traffic through the City of Lake City, the highway corridor plays an important role in the ultimate perception and identity for the community.

Several past land use and transportation planning studies have been conducted including the following:

- 2001 Mississippi Jewel Alternative Urban Areawide Review (AUAR);
- 2003 TH 61 Corridor Study (30 mile segment between Wabasha and Red Wing);
- 2009 MnDOT Highway 61 Traffic Study at Gilbert Creek; and
- 2009 US Highway 61 (Lake City) Access Management & Traffic Safety Study.

The findings and recommendations from these past studies and current land use and transportation information gathered as part of this study were utilized in developing conceptual options for converting the existing four-lane highway section to a three-lane section with enhanced bicycle/pedestrian amenities. Furthermore, Lake City recognized the opportunity for implementing new stormwater management features in conjunction with improvements to Highway 61. As a result, stormwater management strategies were considered in the conceptual design process since the water quality of Lake Pepin and the Mississippi River have long been a recognized concern for Lake City and other riverfront communities.

4.0 Existing Conditions

Corridor and Study Area Description

Highway Section

The US Highway 61 (Lake City) Scoping Study area is illustrated in *Figure 1* located on page 4. From the north and beginning at approximately the Hok-Si-La Park Road, Highway 61 is a rural two-lane highway section with 12-foot driving lanes and 8-foot paved shoulders. The bridge over Gilbert Creek was replaced by MnDOT in 2011. Continuing south, near Central Point Road, the highway corridor transitions to a four-lane divided section with a center raised concrete median. The center median is discontinued near Madison Street and the highway section continues south as a four-lane undivided section through the remainder of the study area.

Traffic Volumes

Historical average annual daily traffic (AADT) volumes were reviewed along the Highway 61 corridor (see *Table 1*).

Table 1 – Highway 61 Historical Traffic Volumes¹

Hwy 61 Segment	1999	2000	2002	2004	2006	2008	2011	2013/2014
North Study Limit to Goodhue County Road 5	7,200	7,600	7,400	7,500	8,300	8,800	9,200	8,800
Goodhue County Road 5 to Highway 63/Lyon Avenue	8,900	9,500	9,200	10,600	10,200	10,300	10,500	9,700
Highway 63/Lyon Avenue to South Study Limit	7,900	8,700	8,400	9,200	8,800	8,500	7,800	8,100

Traffic patterns along Highway 61 have fluctuated throughout the years with all segments having seen increases and slight decreases in volumes. Heavy commercial truck traffic generally appears to account for approximately eight percent² of the total traffic.

Intersection Turning Movement Counts

Existing PM peak traffic turning movement, pedestrian and bicyclist counts were collected at three key intersection along the study corridor. The weekday PM peak period (4:00 PM – 6:00 PM) and the weekend peak period (12:00 PM – 2:00 PM) were collected on Thursday, August 6th, 2015 and Saturday, August 8th, 2015, respectively. The weekday PM peak hour of the roadway was 4:00 PM -5:00 PM and the weekend peak hour of the roadway was 12:00 PM – 1:00 PM. The existing turning movement volumes for the weekday PM and weekend peak



Heavy commercial truck traffic accounts for approximately 8 percent of the traffic on Highway 61.

¹ MnDOT Traffic Mapping Application

² MnDOT HCAADT Map, 2012

hours are in *Tables 2 and 3* below. *Tables 4 and 5* summarize the bicycle and pedestrian activity within the crosswalk at each intersection.

Table 2 – Existing Weekday Peak Hour Traffic Volumes

Intersection	Peak	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBL	Total
Hwy 61 at CSAH 5	PM	33	349	0	0	330	33	44	0	55	0	0	0	844
Hwy 61 at Hwy 63/Lyon Ave	PM	44	249	18	27	267	98	89	62	74	20	29	29	1,043
Hwy 61 at Marion St.	PM	2	249	41	23	242	34	41	35	8	36	52	52	804

Table 3 – Existing Weekend Peak Hour Traffic Volumes

Intersection	Peak	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBL	Total
Hwy 61 at CSAH 5	MD	32	364	0	0	386	22	22	0	40	0	0	0	866
Hwy 61 at Hwy 63/Lyon Ave	MD	29	250	12	25	309	79	85	57	54	23	52	26	1,001
Hwy 61 at Marion St.	MD	1	242	40	15	319	28	41	31	9	37	29	31	823

Table 4 – Existing Weekday Peak Hour Pedestrian/Bicyclist Volumes

Intersection	Peak	NB Approach Crosswalk		SB Approach Crosswalk		EB Approach Crosswalk		WB Approach Crosswalk	
		Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes
Hwy 61 at CSAH 5	PM	0	0	0	0	0	0	0	0
Hwy 61 at Hwy 63/Lyon Ave	PM	7	4	2	4	1	2	0	0
Hwy 61 at Marion St.	PM	0	1	4	0	1	0	1	0

Table 5 – Existing Weekend Peak Hour Pedestrian/Bicyclist Volumes

Intersection	Peak	NB Approach Crosswalk		SB Approach Crosswalk		EB Approach Crosswalk		WB Approach Crosswalk	
		Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes
Hwy 61 at CSAH 5	MD	1	0	0	0	4	0	0	0
Hwy 61 at Hwy 63/Lyon Ave	MD	14	0	7	2	3	1	0	2
Hwy 61 at Marion St.	MD	7	0	6	2	3	0	4	2

Crash History

The crash rates at three key study intersections (same intersections where traffic turning movements were collected) were assessed for the period between 2010 and 2014. The crash rates were compared to statewide system average crash rates for similar intersections as well as the critical crash rates for each intersection. At all three study intersections the crash rate and critical crash rate is below the statewide averages for similar facilities. From the MnDOT Traffic Safety Fundamentals Handbook, the concept of the critical rate is a rate that takes into account multiple variables that affect safety including the roadway design, type of intersection control, amount of exposure, and random nature of crashes. The type and severity of crashes at the three key intersection is detailed below in *Table 6*.

Table 6 – 2010-2014 Intersection Crash Summary

Intersection (type)	Crash Severity						Rates		
	Fatal	A	B	C	Property	Total	Crash Rate	Severity Rate	Critical Crash Rate
Hwy 61 at CSAH 5 (1)	0	0	0	1	2	3	0.16	0.21	0.59
Hwy 61 at Hwy 63 (2)**	0	0	1	2	8	11	0.47	0.64	0.96
Hwy 61 at Marion St. (2)**	0	0	1	0	9	10	0.54	0.65	1.02
Total	0	0	2	3	19	24			

2013 Statewide Crash Standards		
Intersection Type	Crash Rate	Severity Rate
Type 1: Rural Thru/Stop	0.26	0.42
Type 2: Low Volume, Low Speed	0.55	0.75
Type 3: Low Volume, High Speed	0.38	0.55
Type 4: High Volume, Low Speed	0.69	0.96
Type 5: High Volume, High Speed	0.41	0.59

** Signalized Intersection

There were 11 crashes recorded at the intersection of Highway 61/Highway 63 from 2010 to 2014. At the intersection of Highway 61 and Highway 63 there were 2 left-turn related crashes and 2 right angle crashes. These 4 crashes account for 36% of the crashes at the intersection and are considered potentially correctable with signal improvements. Currently all left turning movements are permissive. Including a protected left turn phase can reduce conflicts with the opposing through movement, thereby potentially reducing the number of left turning crashes.

A total of 10 crashes occurred at the intersection of Highway 61 and Marion Street, four of these crashes involved a vehicle sideswiping a parked vehicle. In 2014 there was also a crash involving a motor vehicle and a bicyclist resulting in a non-incapacitating injury. The data indicate the driver was traveling northbound on Highway 61 and the bicycle traveling eastbound on Marion Street. The data available do not indicate an action or conditions that contributed to the crash.

Table 6 shows that there is a low frequency of crashes at the intersection of Highway 61 and Count Road 5. There were a total of 3 crashes with one rear end crash, one sideswipe crash and one left turn related crash.

Access Inventory

According to MnDOT's Access Management Manual the US Highway 61 study area is considered a Category 3-Regional Corridor. The Access Category 3 is further divided into four subcategories that reflect different road functions and land use conditions including:

- Subcategory 3-AF: Non-Interstate Freeway
- Subcategory 3A: Rural
- Subcategory 3B: Urban/Urbanizing
- Subcategory 3C: Urban Core

With the understanding that a roadway changes character as it passes through or between communities, subcategories were developed to recognize general land-use patterns



Existing commercial and residential access exceeds MnDOT's Access Management Guidelines

adjacent to the highway and the intended purpose of the highway. The access management manual states that access management practices will vary greatly due to the varying posted speeds and geographic location of the corridor (e.g. greater levels of access is allowed in urban core areas when compared to rural/undeveloped areas). The segment of the Highway 61 corridor from the north study limit (approximately Hok-Si-La Park Road) to Central Point Road is categorized as a 3B regional corridor, while the

segment from Central Point Road to the south study limit (just south of Elm Street) is categorized as a 3C – Urban Core roadway segment.

Existing Access Conditions

Based on field reviews and aerial interpretation, US Highway 61 currently has a total of 76 access points throughout the approximately 2.3 mile study area, correlating to approximately 33 access points per mile. **Table 7** below shows a summary of the number of access points throughout the study corridor. **Appendix B** includes a series of figures that depict the type and location of access points found throughout the study area.

Table 7 – US Highway 61 (Lake City) Access Inventory- Existing Conditions

US Highway 61 Segment	Access Category	Segment Length	Hwy 61 Scoping Study Area Access Points			
			Driveway		Street	Total
			Commercial	Residential		
North Study Limit (Hok-Si-La Park Road) to Central Point Road	3B	0.75 mi.			4	4
Central Point Road to South Study Limit (just south of Elm Street)	3C	1.55 mi.	24	24	24	72
Totals		2.3 mi.	24	24	28	76

Access Spacing Guidelines

For all access categories a set of guidelines including street, traffic signal spacing, and driveway allowances have been developed to assist in the management of access along roadways. **Table 8** presents the access management guidelines that apply to Highway 61 as a Category 3B and 3C – Regional Corridor.

Table 8– Recommended Access Spacing and Allowance for Categories 3B and 3C

Category	Area or Facility Type	Functional Classification	Public Street Spacing		Signal Spacing
			Primary Full Movement Intersection	Secondary Intersection	
3B	Urban/Urbanizing	Principal and Minor Arterials	1/2-mile	1/4-mile	1/2-mile
3C	Urban Core		300-600 feet, dependent upon city block spacing/length		1/4-mile

As shown in **Tables 7 and 8**, the segment of US Highway 61 between Hok-Si-La Park Road and just south of Elm Street highly exceeds MnDOT’s recommended access spacing guidelines for a Category 3 Regional Corridor.

Land Use

Land uses adjacent to the highway corridor transition from rural/open space (Hok-Si-La Park and Lake Pepin) and limited commercial near the northern study limit to a mix of higher density commercial and residential developments between Central Point Road and Walnut Street. Continuing south the highway corridor bisects a portion of the City’s downtown business district that includes a number of commercial/retail buildings located up close to the highway corridor. The close



The highway section through downtown Lake City includes 4-lanes of traffic and parallel parking on both sides of the highway.

proximity of these structures limit the possible expansion of the transportation corridor (roadway and pedestrian features) without incurring significant right-of-way impacts.

Pedestrian Facilities

A narrow sidewalk (approximately 6') is located adjacent to Lake Pepin and parallels the east side of the highway between Central Point Road and Jewel Avenue/Park Street. Limited segments of sidewalk are present on the west side of the highway north of Madison Street. Sidewalks are present from Madison Street (on the west side of the highway) and Jewel Avenue/Park Street (on the east side of the highway) through the downtown area and to the southern limit of the study area (just south of Elm Street). Many of the existing pedestrian facilities are currently not in compliance with the design standards of the American Disabilities Act (ADA). MnDOT has planned for several ADA compliance improvements as part of their 2019 programmed improvements.

5.0 CONCEPTUAL DESIGN DEVELOPMENT AND EVALUATION

The US Highway 61 Scoping Study included the development of conceptual design options for converting the existing highway section into a three-lane section with enhance pedestrian features and providing opportunities for implementing water quality/stormwater best management practices (BMPs).

Four-Lane to Three-Lane Conversion: Capacity Assessment

An assessment of roadway capacity was first conducted to determine if the existing and forecast traffic along US Highway 61 could be safely and efficiently accommodated with a three-lane highway section. The traffic volumes previously shown in *Table 1* were used as the basis for creating forecast traffic volumes. A 20-year growth factor of 1.5 was applied to the existing traffic volumes to create forecast volumes along the corridor. This level of traffic growth is higher than what has been experienced in the past several years throughout Lake City and the surrounding area, but a more conservative approach was deemed appropriate for this planning study (see *Table 9* for forecast volumes). Previous forecasting efforts completed in the area assumed a substantially greater level of development would occur in the Jewel Development and throughout Lake City. The Study Group recognized new residential and commercial development will likely occur over the next several decades, but at a much slower rate than previously considered.

Traffic operations data indicates that a roadway begins to experience noticeable operational problems once traffic approaches approximately 85% of a roadways design capacity. For a three-lane road that means operational problems begin to occur when traffic volumes exceed approximately 17,000 trips per day (see *Table 10*).

Table 9 – Forecast Traffic Volumes

Hwy 61 Segment	2013/2014	2024
North Study Limit to Goodhue County Road 5	8,800	13,200
Goodhue County Road 5 to Highway 63/Lyon Avenue	9,700	14,550
Highway 63/Lyon Avenue to South Study Limit	8,100	12,150

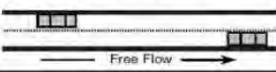
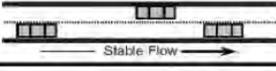
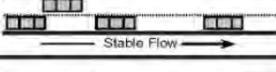
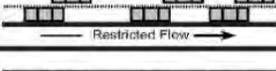
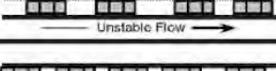
Table 10 – Average Daily Traffic (ADT) Planning Level Capacities

Roadway Type	Level of Service (LOS) Based on Average Daily Traffic (ADT) Volumes					
	A	B	C	D*	E	F
Two-lane	<8,000	8,000–9,500	9,250–10,750	10,500–12,000	11,750–13,250	>13,250
Three-lane (center left turn lane)	<9,000	9,000–12,000	11,500–14,500	14,000–17,000	16,500–19,500	>19,500
Four-lane undivided	<12,000	12,000–15,000	14,500–17,500	17,000–20,000	19,500–22,500	>22,500
Four-lane divided (center median)	<19,000	19,000–22,000	21,500–24,500	24,500–27,000	26,500–29,500	>29,500

* ADT associated with LOS D represent traffic volumes approaching 85-percent of a roadway's design capacity.

Roadway level of service (LOS) is commonly used to assign a value to the level of congestion and efficiency of the roadway. LOS is a measure of delay and operating conditions defined by the Highway Capacity Manual using a grading scale from A to F. LOS A and B indicate conditions when traffic demand is well below the roadway capacity and travel is rather unimpeded (see *Figure 2*). At LOS C, the average speed decreases and slower traffic and turning traffic quickly cause delays/congestion. Through LOS D, traffic volumes approach a roadway's functional capacity, stoppage and delays begin to occur, the average speed is substantially lower, and passing is unlikely to occur. At LOS E, traffic demand exceeds capacity, drivers are choosing other routes and times to travel, and any disturbance to the traffic flow, such as turning traffic, promptly drops this condition to a LOS F. A LOS F means traffic demand far exceeds capacity, heavy congestion is prevalent, long periods of stop and go conditions occur, and travel time is severely degraded.

Figure 2 – Highway Capacity Level of Service

Level of Service	Volume/Capacity (V/C) Ratio	Traffic Flow	Description
A	0.00 to 0.39		FREE FLOW Low volumes and no delays.
B	0.40 to 0.59		STABLE FLOW Low volumes and speeds dictated by travel conditions.
C	0.60 to 0.79		STABLE FLOW Speeds and maneuverability closely controlled due to higher volumes.
D	0.80 to 0.99		RESTRICTED FLOW Higher density traffic restricts maneuverability and volumes approaching capacity.
E	1.00 to 1.19		UNSTABLE FLOW Low speeds, considerable delays, and volumes at or slightly over capacity.
F	1.20 and above		FORCED FLOW Very low speeds, volumes exceed capacity, and long delays with stop-and-go traffic.

The capacity thresholds listed in *Table 10* were considered for the forecast traffic volumes along US Highway 61. According to forecast volumes, Highway 61 has no roadway sections that are anticipated to experience capacity constraints and do not exceed the capacity threshold of a three-lane highway. Spot locations (intersections) may experience moderate operational issues, however, continued intersection improvements (e.g. addition of right turn lanes) could extend the capacity and improve operations at these locations.

In addition to assessing the general operations of the existing corridor, the capacity table provides a means to determine what typical roadway section(s) would best serve the existing and forecast levels of traffic.

Concept Design

The US Highway 61 Scoping Study corridor was subdivided into three zones. The boundary of these zones was based on existing land use, pedestrian/bicycle needs, and traffic patterns. Beginning at the northwestern end of Lake City, the zones are as follows:

- Zone 1 – Hok-Si-La Park Road to Central Point Road
- Zone 2 – Central Point Road to Park Street/Jewell Avenue
- Zone 3 – Park Street/Jewell Avenue to just south of Elm Street

Based on input received from the Study Group, concept alternatives were developed for the three zones, as described in the remainder of this section. The preferred concept(s) for each zone are illustrated on maps located in *Appendix C*. In several instances multiple conceptual design options were initially developed for consideration, but through an evaluation process conducted by technical staff the options were refined and screened for each zone.

Zone 1: Hok-Si-La Park Road to Central Point Road

Within Zone 1, MnDOT has recently replaced the bridge structure over Gilbert Creek and made minor shoulder improvements to provide some accommodations to bicyclists through the area and across the bridge. The preferred conceptual design for Zone 1 includes reconstructing US Highway 61 that will accommodate a two-lane rural undivided and divided highway section. *Figures 1A and 2A, located in Appendix C,*



New Highway 61 Bridge over Gilbert Creek includes accommodations for a future trail

depict the conceptual layout with the proposed geometrics and roadway cross section. The typical roadway section would include two 12-foot driving lanes, 8-foot outside shoulders, a 6-foot raised concrete median (south of 332nd Street), and 3-foot inside shoulders (where a center median is present). Minor median, shoulder, and turn lane/bypass lane improvements should be further considered to maximize safety and

mobility. Planning level cost estimates for the roadway improvements in Zone 1 are approximately \$1.4 million. **Appendix D** provides added detail and cost assumptions.

A multi-use trail extension is proposed along the east side of US Highway 61 between Hok-Si-La Park Road and Central Point Road. Sufficient area currently exists and minimal impacts would result from the addition of the trail corridor. A short spur trail connection under Gilbert Creek Bridge is also proposed that would connect pedestrians from the west side of the highway (North Lakeshore Drive) to the trail on the east. The cost estimate for the trail is approximately \$428,500



A RRFB system is a low cost-high benefit pedestrian crossing safety features

An enhanced pedestrian crosswalk is included at the intersection of US Highway 61 and North Lakeshore Drive. Pavement markings, signage and even an innovative safety treatment, such as a rectangular rapid flashing beacon (RRFB) system should be considered for the crossing. A RRFB is a relatively low cost safety improvement that has been shown to significantly increase driver yielding at crosswalks when supplementing standard pedestrian crossing warning signs and pavement markings. More information on RRFBs can be found at: <http://www.sehinc.com/news/city-improves-pedestrian-safety-promising-technology>

No changes to the existing stormwater management system is proposed for Zone 1 as the rural highway section with grass side slopes and ditch sections provide adequate storage and treatment for highway runoff.

Zone 2: Central Point Road to Park Street/Jewell Avenue

The Zone 2 conceptual design option includes converting the existing four-lane divided (between Central Point Road and Madison Street) and undivided (between south of Madison Street to Park Street/Jewell Avenue) highway section to a three-lane section with a northbound continuous center left turn lane. There are two locations within Zone 2 where access restrictions and pedestrian crossings/refuges are proposed. Additional center median stormwater treatment are also recommended for further consideration in these areas. The proposed highway cross section in Zone 2 (along Lake Pepin) has been narrowed in order to provide opportunities for additional storm water treatment BMPs and expanded pedestrian/trail improvements. **Figures 3A and 4A, located in Appendix C** depicts the conceptual layout and proposed cross section for Zone 2.

US Highway 61 looking northbound near West Clay Street. Highway 61 and the adjacent trail provide scenic views across Lake Pepin.



On-street parking along the northbound shoulder of US Highway 61 between Central Point Road and Park Street/Jewell Avenue has historically not been highly utilized. As a result, the concept layout for Zone 2 includes the reduction of the northbound shoulder width to 4-feet in order to provide additional greenspace and land for implementing stormwater treatment BMPs and expanding the width of the existing trail.

The southbound shoulder width was also considered for reduction, but dismissed from further consideration due to safety and mobility needs associated with right turning traffic at several public streets and private driveways. The proposed three-lane section would include either two 12-foot driving lanes, a 12-foot center left turn lane, a northbound 4-foot outside shoulder, and southbound 10-foot shoulder (for parking and/or bike lane) or two 11-foot driving lanes, a 14-foot center left turn lane, a northbound 4-foot outside shoulder, and southbound 10-foot shoulder (for parking and/or bike lane). The trail along the east side (adjacent to Lake Pepin) would be widened to 10-feet and the boulevard between the highway and edge of trail would be expanded to an average width of approximately 14-feet (see *Figures 3A and 4A in Appendix C*). Planning level cost estimates for the roadway improvements in Zone 2 are approximately \$2 million. *Appendix D* provides added detail and cost assumptions.

The expanded boulevard area on the east side of the highway corridor provides an opportunity to add much needed water quality and stormwater management features. A small number of newer developments along the highway corridor have incorporated stormwater retention and treatment features, but the vast majority of surface water runoff within the study area is collected through a storm sewer system and is directly discharged to Lake Pepin. *Appendix E* includes a Stormwater Management Technical Memorandum that was prepared as part of the US Highway Scoping Study. The tech memo identifies several locations and opportunities for implementing stormwater best management practices (BMPs). The recommended BMPs range from simple housekeeping items to construction of bioswales, bioinfiltration planters, and porous pavement and/or pervious pavers. These types of stormwater BMPs will assist in the removal of pollutants and prevent their discharge to Lake Pepin.



A pedestrian refuge creates a safe crossing location while also providing traffic calming along the roadway corridor.

Also, within Zone 2, enhanced pedestrian crosswalks have been proposed at Bayview Street, Grant Street/County Road 5, West Clay Street, and Park Street/Jewell Avenue. Pavement markings, signage and RRFB systems should be considered for each crossing. Furthermore, two median closures at West Clay Street and West Madison Street are recommended to

provide a pedestrian refuge while crossing the highway corridor. These locations were identified by City staff as areas where higher volumes of pedestrians are present and

desiring a safety crossing of the roadway. Limiting access at these intersections to right-in/right-out only is not anticipated to adversely impact traffic patterns as there are relatively low traffic volumes on these roadways and sufficient alternative routes exist throughout the local street network.

Zone 3: Park Street/Jewell Avenue to just south of Elm Street

Zone 3 includes the high dense urban area and passes through the core of downtown Lake City. Within this segment (between Park Street/Jewell Avenue and just south of Elm Street), the highway is proposed to be converted from an urban four-lane undivided section to a three-lane section with a shared center left turn lane. The three-lane typical section would include either two 12-foot travel lanes (one in each direction) and a 12-foot shared center left turn lane or 11-foot travel lanes (one in each direction) and a 14-foot center left turn lane. It is recommended that through the downtown area the center lane be stripped for back-to-back left turn lanes rather than a shared left turn lane. Parallel on-street parking would remain throughout Zone 3. The existing traffic signals at Highway 63/Lyon Avenue and Marion Street will remain, but signal timing would be optimized.

Two conceptual design options were developed and carried forward for further consideration within Zone 3.

Zone 3 – Option A: On-Road Bike Lanes

Option A for Zone 3 includes maintaining the existing roadway width (curb lines remain unchanged as well as the width of the existing sidewalks in the downtown district). This is a relatively low cost option as no major reconstruction of the highway footprint is required. Planning level cost estimates for the Zone 3 Option A are approximately \$1.8 million. The removal of one travel lane provides the opportunity to add dedicated 5-foot bike lanes in each direction while maintaining parallel on-street parking. **Figures 5A and 6A**, located in **Appendix C** depict the conceptual layout and typical cross section for the On-Road Bike Lanes Concept.



Example of a three-lane section with dedicated bike lanes

Zone 3 – Option B: Widened Sidewalk

Option B for Zone 3 includes narrowing the existing roadway width (moving the curb lines closer together) in order to provide an expanded sidewalk area through the downtown and densely developed urban district. This would allow for an additional 5 to 6 feet of sidewalk space on both sides of the highway corridor while still maintaining parallel on-street parking. The Study Group indicated a desire to improve the pedestrian experience and aesthetic appearance through the downtown area and this option provides for additional space between storefronts and the highway. Possible streetscape elements (e.g. plantings, stamped/colored concrete, benches, public art, receptacles, etc.) could also be considered within the expanded sidewalk areas. **Figures 5B and 6B**,

located in *Appendix C* depict the conceptual layout and typical cross section for the Widened Sidewalk Concept.

The cost of Option B is substantially greater as it requires reconstructing the curbs/gutters along both sides of the road and widening the concrete sidewalk through much of Zone 3. Planning level cost estimates for the Zone 3 Option B are approximately \$2.5 million (see *Appendix D* for further cost details).

Under both design options it is recommended that intersection approach bump-outs at Highway 63/Lyons Avenue and Marion Street be removed to accommodate a full right turn lane. The addition of a dedicated right turn lane will preserve mobility along the corridor by removing these turning movements from the travel lane at these key intersections. Based on the conceptual design the addition of right turn lanes may result in the removal of 1-2 parking stalls near the intersection approaches. Furthermore, innovative pedestrian enhancements should continue to be considered such as the low-cost "Take It To Make It" flags that the City has added at Center Street.

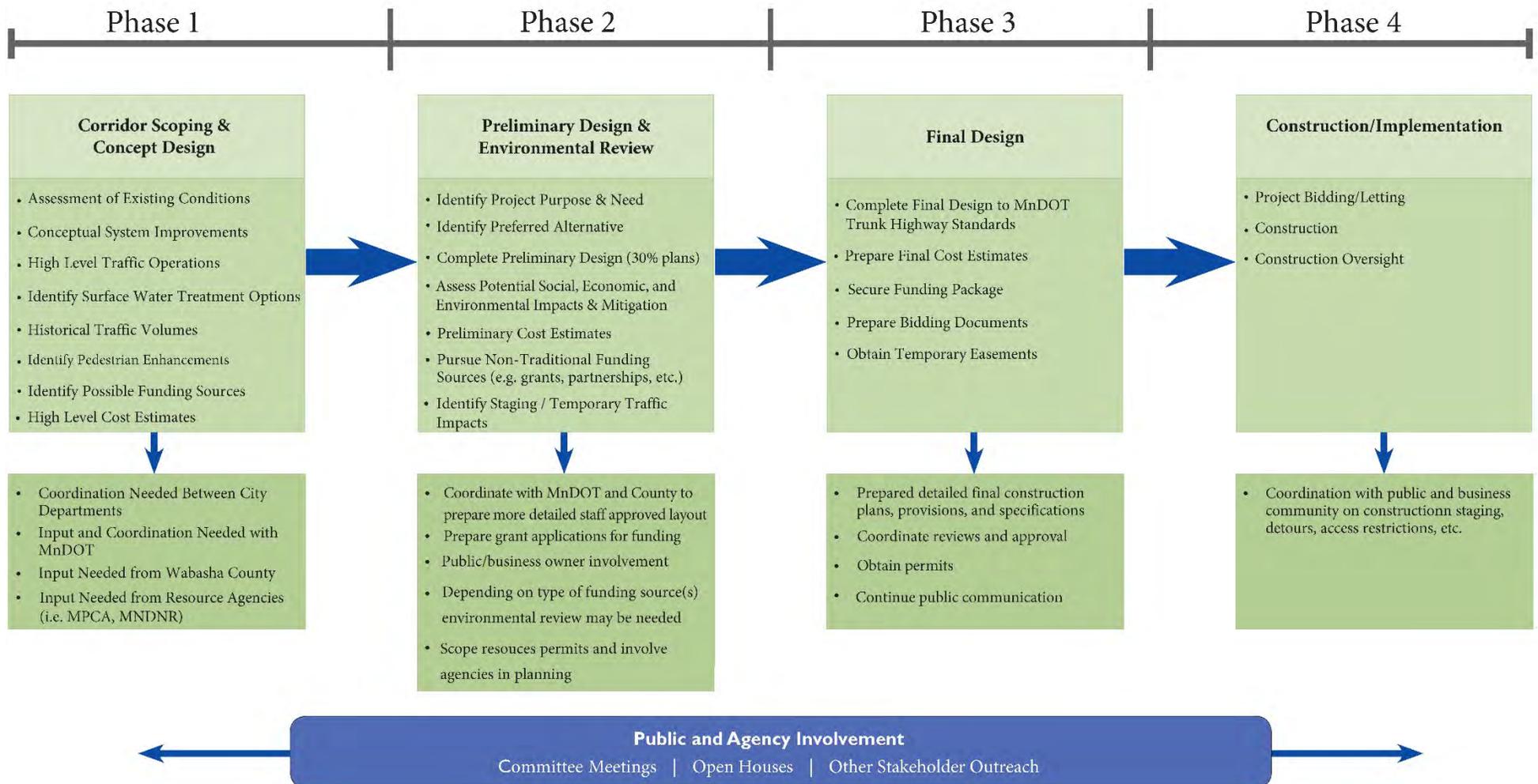
The US Highway stormwater management infrastructure in Zone 3 primarily consists of curb/gutter, catch basins, and an underground conveyance systems (pipes) that carry runoff directly to Lake Pepin. Implementation of new stormwater BMPs in a highly urbanized area is challenging due to limited available space. The Stormwater Management Technical Memorandum, located in *Appendix E*, identifies several housekeeping items as well as bioinfiltration planters and porous pavement and/or pervious pavers that could be used to treat runoff from small areas of the downtown district.

6.0 RECOMMENDATIONS & FUNDING STRATEGIES

MnDOT has programmed a preservation project along US Highway 61 for FY 2019 that involves pavement replacement along this segment of the highway and improvements that would bring existing pedestrian features into compliance with the Americans with Disabilities Act (ADA). The City recognized this as an opportunity to consider additional improvements to the highway section through Lake City and to coordinate with MnDOT on how and when these improvements could get implemented. The concepts presented in this US Highway 61 Scoping Study Report will require further coordination with MnDOT, additional preliminary and final design, and input from project stakeholders, including Lake City residents and business owners. *Figure 3*, located on the following page, illustrates the typical phases involved in the MnDOT project development process. As shown in the figure, the completion of this scoping study is the first phase in a complex and detailed process.



Figure 3: US Highway 61 Project Development Process Timeline



Conclusions

The US Highway 61 Scoping Study was initiated with two main objectives: 1) to fully define the transportation needs beyond pavement rehabilitation including traffic operations, corridor safety, pedestrian/bicycle needs, and stormwater management; and 2) develop an improvement concept and prepare budgetary cost estimates for which the City can begin to look for potential funding sources.

The findings of this study indicate that converting the existing four-lane (divided and undivided) sections of US Highway 61 to a three-lane section (with center left turn lane) will not adversely impact traffic operations and does provide opportunities for improved pedestrian/bicycle movements and inclusion of stormwater management features.

Study Recommendations

- Initiate Phase II of the project development process.

The City shall consider building on the momentum generated from the completion of the Highway 61 Scoping Study (Phase I) by initiating the Preliminary design and environmental review (Phase II). The scope of Phase II will provide greater design details and should include a comprehensive public/business owner involvement plan. Completion of any required environmental reviews (e.g. Environmental Assessment Worksheet (EAW)) should also be completed as part of the Phase II.

- The City shall continue to coordinate future US Highway 61 improvements with the Project Partners (MnDOT, Goodhue and Wabasha Counties, Chamber of Commerce)

Maintaining open lines of communication with the Study Group members will assist in advancing the project improvements while also ensuring transportation needs and issues from all jurisdictions are considered.

- Pursue project funding sources.

The concepts developed as part of this scoping study will require additional funding beyond the funds MnDOT has already programmed for the pavement rehabilitation and ADA improvements. The next section provides further details on possible traditional and non-traditional funding sources.

Funding Opportunities

The intent of this Highway 61 Scoping Study has been to identify transportation investments that will maximize transportation system performance and support the economic vitality of Lake City. This section outlines several funding programs that merit further review as the study's recommendations are being considered for implementation. It is important to note that these funding sources have varying solicitation timelines and eligibility requirements. As such, these programs may not apply to all elements of the study's recommendations. SEH has considerable experience with these programs. As such, the firm's community development specialists are available for further consultation as the City of Lake City begins future stages on the project development process.

- *Highway Safety Improvement Program - Minnesota Department of Transportation*

The program is a federal-aid funding program designed to reduce traffic fatalities and serious injuries on all public roads. The most recent solicitation (August 2015) for Greater Minnesota local projects for the Highway Safety Improvement Program was for SFY 2017-2020. Maximum Federal Funding was 90% of eligible total project costs up to: \$350,000 for individual systemic projects; \$1,000,000 or as much as available by ATP for reactive projects.

Program Contact Information:

Julie Whitcher, Minnesota Department of Transportation
1500 West County Road B2, MS 725, Roseville, MN 55113
651-234-7019

- *Local Road Improvement Program - Minnesota Department of Transportation*

The program provides state transportation funding assistance to cities, counties and townships for the construction and reconstruction of local roads with regional significance and with safety improvements to reduce fatal and serious injury crashes. Cities that have a population of 5,000 or less and townships must request the sponsorship of a county to apply for and implement their project. Projects are selected through a competitive solicitation process with recommendations from the Local Road Improvement Program Advisory Committee. The most recent solicitation (2014-15) included a maximum funding request of \$750,000 with projects less than that amount not being required to provide a local match.

Contact Information:

Patti Loken, Minnesota Department of Transportation
395 John Ireland Blvd, St. Paul, MN 55155
651-366-3803

- *Corridors of Commerce Program - Minnesota Department of Transportation*

Corridors of Commerce is a program of competitive state grants, augmented with local funding, that targets transportation routes identified as vital links for regional and statewide economic growth. The program's goals are to: provide additional highway capacity on interregional corridors or bottlenecks in the system; and improve or preserve the movement of freight and reduce barriers to commerce. In order to be considered for selection, a project must be consistent with the statewide multimodal transportation plan and be located on an interregional corridor or supplemental freight route in Greater Minnesota and on a state trunk highway in the Twin Cities metro area. The legislation requires MnDOT to "accept recommendations on candidate projects from area transportation partnerships and other interested stakeholders in each MnDOT district." Project recommendations were submitted by public sector partners,

stakeholders and interested citizens statewide, with input from MnDOT district offices. The law says the department will “annually accept recommendations on candidate projects.” However, no funding source has yet been designated for any future round of project selections.

Contact Information:

Patrick Weidemann, Minnesota Department of Transportation
395 John Ireland Blvd, St. Paul, MN 55155
651-366-3758

- *Transportation Economic Development Program - Minnesota Department of Transportation and Department of Employment and Economic Development*

The program’s purpose is to fund construction, reconstruction, and improvement of state and local transportation infrastructure in order to: create and preserve jobs; improve the state’s economic competitiveness; increase the tax base; accelerate transportation improvements to enhance safety and mobility; and promote partnerships with the private sector. The program provides state funding to close financing gaps for transportation infrastructure improvement construction costs. These improvements will enhance the statewide transportation network while promoting economic growth through the preservation or expansion of an existing business--or development of a new business. Target industries include manufacturing, technology, warehousing and distribution, research and development, agricultural processing, bioscience, tourism/recreation, industrial park development. Projects selected based on the project’s transportation impact, statewide economic impact, project financial plan and project readiness. The program will pay for up to 70% of the total transportation infrastructure cost of the project or the state’s maximum allowable share as determined by MnDOT’s cost participation policy or DEED policy, whichever is less.

Contact Information:

Kenneth Buckeye, Minnesota Department of Transportation
395 John Ireland Blvd, St. Paul, MN 55155
651-366-3737

- *Transportation Alternatives Program - Minnesota Department of Transportation*

The Transportation Alternatives Program is a competitive grant opportunity for local communities and regional agencies to fund projects for pedestrian and bicycle facilities, historic preservation, Safe Routes to School, and various other improvements. Eligible activities include construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other

safety-related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.). For all Transportation Alternatives Program (TAP) projects, including Safe Routes to School (SRTS) projects funded with TAP funds, the Federal share is the same as for the general Federal-aid highway program: 80 percent Federal/20 percent State or local match subject to the sliding scale adjustment. (23 U.S.C. 120). If an applicant is not a State Aid city or county the applicant will need a State Aid city or county to be a sponsor on the project. Project sponsor may be different from the project applicant, if the applicant is not eligible to be a direct recipient of funding.

Contact Information:

Chris Berrens, Minnesota Department of Transportation
395 John Ireland Blvd, St. Paul, MN 55155
651-366-3755

- *Local Trails Connection Program - Minnesota Department of Natural Resources*

The program provides funding to local units of government to promote relatively short trail connections between where people live and desirable locations, not to develop significant new trails. Funding for this grant program is from "In Lieu Of" lottery proceeds. This program is established in Minnesota Statutes 85.019. Eligible projects include acquisition and development of trail facilities. Projects must result in a trail linkage that is immediately available for use by the general public. Trail linkages include connecting where people live (e.g. residential areas within cities, entire communities) and significant public resources (e.g. historical areas, open space, parks and/or other trails). Grants are reimbursement based up to 75 percent of the total eligible project costs, and recipients must provide a non-state cash match of at least 25 percent. Other state funds or grants, such as Parks and Trails Legacy Grants, or Metropolitan Council Grants cannot match these grants. The minimum grant request is \$5,000, and the maximum grant award is \$150,000. Priority for trail project funding will be given to projects that provide significant connectivity. Considerations also include trail length, expected amount and type of use, and quality and attractiveness of natural and cultural resources.

Contact Information:

Traci Vibo, Minnesota Department of Natural Resources, Division of Parks and Trails
500 Lafayette Road, Box 39, Saint Paul, MN 55155
651-259-5619

APPENDIX A

STUDY GROUP MEETING AGENDAS, SUMMARIES, AND MEMBERS LIST



AGENDA

Highway 61 Scoping Study Committee Meeting

Tuesday, July 14, 2015

10:00 a.m.

City Hall Office, Lake City MN

Copies to: Committee Members (City of Lake City, MnDOT, Goodhue County, Wabasha County, Lake City Chamber of Commerce, SEH)

- I. Introductions
- II. Scoping Study Background and Purpose
 - A. SEH Scope of Work
 - B. Study Components/Deliverables
 - 1. Develop Conceptual Layout
 - 2. Define Surface Water Treatment Opportunities
 - 3. Identify Project Development Process Next Steps
 - 4. Identify Funding Opportunities
 - C. Corridor Study Schedule
- III. Role of the Study Committee
 - A. Communication Protocols
- IV. Corridor Existing Conditions
 - A. Data Collection Underway
 - 1. Turning Movements
 - 2. Crash Data
 - 3. Right Of Way
 - 4. Future Development Updates?
 - 5. Future Conditions Operations Analysis - To Be Completed
- V. Issues Identification
 - A. Safety/Capacity Concerns
 - B. Pedestrian/Bicycle Facilities
 - C. Storm Water Treatment
 - D. Access Conditions
- VI. Conceptual Design Options
 - A. Hok-Si-La Park to Park Street/Jewell Avenue
 - B. Park Street/Jewell Avenue to Elm Street
 - C. Discuss Candidate Locations for Access Modification
 - D. Define Design Criteria (design speed, lane widths, on-street parking, etc.)
 - E. Discuss Options for Expanding and Enhancing Alternative Modes
 - 1. Pedestrian and Bicycle Facilities
- VII. Next Steps & Meeting Date



MEETING SUMMARY

Highway 61 Scoping Study
Study Committee Meeting
July 14, 2015
Lake City City Hall

Meeting Chair: Scott Jensen

Summary by: Bob Rogers

Present: Scott Jensen, Rob Keehn, Megan Smith - City of Lake City; Mark Schoenfelder, Kjersti Anderson - MnDOT; Dietrich Flesch - Wabasha County; Ethan Seaberg - Goodhue County; Andrea Hamilton - Lake City Chamber of Commerce; Bob Rogers, Bill Anderson - SEH

Copies to: Study Committee Members

I. Introductions

II. Scoping Study Background and Purpose

- A. SEH Scope of Work – the committee discussed the primary goals and objectives of the scoping study, which was to complete a scoping level of planning and conceptual design of highway, drainage, and pedestrian/bicycle improvements along Highway 61 in advance of MnDOT’s overlay project (S.P. 7906-96) that is currently programmed for FY 2019.
 - 1. Study Components/Deliverables: develop conceptual roadway layout(s); define surface water treatment opportunities; identify project development process next steps; and identify range of funding opportunities
- B. Scoping Study Schedule – the committee discussed the schedule for completing the traffic analysis, conceptual layouts, and drainage recommendations. It is anticipated that the study will occur over the next 4 months with a final study report completed before the end of 2015. The schedule will continue to be tracked and updates will be provided as necessary.

III. Role of the Study Committee

- A. Communication Protocols – all study communications should include Scott Jensen, but direct communications between the study committee members and consultant team is encourage. Also, SEH will be distributing meeting handouts (agendas, minutes, tech memos, etc.) in electronic format only. Any paper copies should be printed by individual committee members.

ACTION ITEM: SEH will prepare a roster of the Study Committee Members, including e-mail addresses and will distribute the document to all members along with the meeting summary.

IV. Corridor Existing Conditions

- A. Data Collection – SEH has begun to collect existing data from City engineering files, GIS datasets, and information from past studies. The Committee discussed the content and findings of the 2003 Highway 61 Corridor Study, the Highway 61 at Gilbert Creek Traffic Study, and a draft MnDOT Access Management and Traffic Study for Lake City.
- B. Other data to be collected will include an inventory of existing access points, traffic turning movement counts at 2-3 intersections, crash data, and storm sewer outlets.

***ACTION ITEM:** MnDOT will forward copies of their two previous studies to SEH.*

- V. Issues Identifications – the Committee discussed several transportation and land use issues that will be considered during the development of conceptual layouts and design options. Some examples of this included ADA requirements, planning for complete streets (multimodal), on-street parking needs downtown, streetscape opportunities, access modifications, stormwater management, etc.
- VI. Conceptual Design Options
 - A. The Committee discussed several possible design alternatives that will be considered.
 - 1. Three-lane section with center left turn lane and/or back-to-back left turn lanes in the downtown area.
 - 2. Divided two-lane section with left/right turn lanes a key intersections
 - 3. Other design options: bike lanes on one or both sides of the highway, removal of intersection bump-outs at certain intersections to accommodate right turn lanes, innovative stormwater features (bio-swales, infiltration basins/strips, and underground chambers).
 - B. Design standards/criteria were also discussed. MnDOT is open to allowing flexibility with the design standards in accordance with their context sensitive solutions guidance. However, since Highway 61 is on the National Highway System the standards will ultimately need input from the Federal Highway Administration.
 - C. Discuss Options for Expanding and Enhancing Alternative Modes
 - 1. Pedestrian and Bicycle Facilities – A goal of the study is to identify areas where pedestrian facilities can be enhanced. Also, the concept layout will consider the addition of bike lanes along Highway 61.

***ACTION ITEM:** City staff will identify pedestrian crossing locations along the corridor that could be added/enhanced as part of future improvements. These locations will be considered in the preparation of conceptual layouts/design options.*

VII. Next Steps & Meeting Date

- A. The next Highway 61 Scoping Study Group Meeting has not yet been announced. A meeting date will be set following the preparation and distribution of the conceptual improvements/options for the corridor. It is anticipated that the next meeting will occur in late August or early September 2015.

E-mail Contact list: sjensen@ci.lake-city.mn.us, rkeehn@ci.lake-city.mn.us, msmith@ci.lake-city.mn.us, mark.schoenfelder@state.mn.us, dflesch@co.wabasha.mn.us, greg.isakson@co.goodhue.mn.us, lcchamber@lakecity.org, brogers@sehinc.com, banderson@sehinc.com, ethan.seaberg@co.goodhue.mn.us, kjersti.anderson@state.mn.us

SEH believes that this document accurately reflects the business transacted during the meeting. If any attendee believes that there are any inconsistencies, omissions or errors in the minutes, they should notify the writer at once. Unless objections are raised within seven (7) days, we will consider this account accurate and acceptable to all. **If there are errors contained in this document, or if relevant information has been omitted, please contact Bob Rogers at 651-765-2945 or brogers@sehinc.com**



AGENDA

Highway 61 Scoping Study Committee Meeting
Tuesday, September 22, 2015
1:30 p.m.
City Hall Office, Lake City MN

Copies to: Committee Members (City of Lake City, MnDOT, Goodhue County, Wabasha County, Lake City Chamber of Commerce, SEH)

- I. Scoping Study Background and Purpose
- II. Traffic Analysis Update
 - A. Highway 61 Traffic Tech Memo Findings & Recommendations
- III. Water Quality/Drainage Analysis Update
 - A. Stormwater BMP Tech Memo
- IV. Conceptual Design Update
 - A. Concept Development and Evaluation Tech Memo
 - 1. Zone 1: Hok-Si-La Park to Central Pointe Road
 - 2. Zone 2: Central Pointe Road to Park Street/Jewell Avenue
 - 3. Zone 3: Park Street/Jewell Avenue to Elm Street
 - B. Options for Expanding and Enhancing Pedestrian and Bicycle Facilities
- V. Study Report Outline
- VI. Next Steps



MEETING SUMMARY

Highway 61 Scoping Study
Study Committee Meeting
September 22, 2015
Lake City City Hall

Meeting Chair: Scott Jensen

Summary by: Bob Rogers

Present: Scott Jensen, Megan Smith - City of Lake City; Mark Schoenfelder - MnDOT; Ethan Seaberg - Goodhue County; Andrea Hamilton - Lake City Chamber of Commerce; Bob Rogers, Bill Anderson - SEH

Copies to: Study Committee Members

I. Scoping Study Background and Purpose

- A. Bob provided the Study Group a recap of the study background and purpose, which is to develop a scoping level conceptual design options for Highway 61 through Lake City. Drainage and pedestrian/bicycle improvements are also be considered. This transportation planning effort is being conducted in advance of MnDOT's overlay project (S.P. 7906-96) that is currently programmed for FY 2019.

II. Traffic Analysis Update

- A. A draft Traffic Analysis Technical Memorandum was distributed to the Study Group members in advance of the meeting. The Group discussed the turning movement counts that were gathered at three key intersections and the findings of the operational analysis. According to the analysis, a 4-lane to 3-lane conversion along Highway 61 would not have an adverse effect on intersection traffic operations. It was recommended that the final tech memo include pedestrian counts and crash rates for the intersections analyzed.

ACTION ITEM: SEH will update the tech memo to include pedestrian counts and crash rates. The final tech memo will redistributed to all committee members.

III. Water Quality/Drainage Analysis Update

- A. A draft Stormwater Management Opportunities along Highway 61 through Lake City Technical Memorandum was distributed to the Study Group members in advance of the meeting. The Group discussed the inventory of existing conditions and recommended best management practices (BMPs) for the study area. It was recommended that a section be added to the tech memo that highlights the existing Lake Pepin water quality conditions. This information may be useful for future grant funding opportunities. The Group also discussed the applicability of some of the BMPs (e.g. porous pavement/pervious pavers) along a state trunk highway. The purpose of the BMP list was to present a wide range of options that could be used throughout the study area.

ACTION ITEM: SEH will add background information on Lake Pepin's existing water quality conditions to the final tech memo and redistribute copies to the committee members.

IV. Conceptual Design Update

- A. A draft Conceptual Design Technical Memorandum (including conceptual layout and typical sections) was distributed to the Study Group members in advance of the meeting. The Group discussed the various zones and features of the concept layout. Several minor design changes were discussed (trail extension/connection, pedestrian crossings, etc.). A suggestion was made to narrow the southbound shoulder in Zone 2 whereby eliminating on-street parking and further expanding the boulevard on the lake side of the highway. This option was considered, but the presence of right turn lanes for southbound traffic at CSAH 5/Grant St. and Monroe St. restrict the narrowing of the highway on the lake side unless additional right-of-way is acquired to accommodate the right turn lanes. A sub-option will be developed that narrows the southbound shoulder and extends the width of the southbound boulevard (development side), which will be utilized for sidewalk extensions. The Study Group also suggested an additional design option for Zone 3 (Park St./Jewell Avenue to Elm St.). A new option will be developed that eliminates the 5' bike lanes and allows for narrowing the corridor, which could be utilized for additional green space and/or wider sidewalks in the downtown area. The goal of narrowing the roadway is to provide opportunities for adding aesthetic features (e.g. plantings/trees) and making the downtown more pedestrian-friendly.

***ACTION ITEM:** SEH will prepare a new conceptual design option for Zone 3 that includes the removal of the bike lanes, narrows the roadway footprint, and widens the boulevard/sidewalk area.*

V. Study Report Outline

- A. A report outline was distributed to meeting attendees. The outline provides a framework for the content and level of documentation that will be included in the final scoping study report. SEH will prepare a draft study report, which is anticipated to be distributed to the Study Group on late October.

***ACTION ITEM:** SEH will prepare a draft study report of review by the Study Group members.*

VI. Next Steps & Meeting Date

- A. The next Highway 61 Scoping Study Group Meeting has not yet been announced. A meeting date will be set following the revisions to the tech memos, updated conceptual design and preparation of a draft study report.

E-mail Contact list: sjensen@ci.lake-city.mn.us, rkeehn@ci.lake-city.mn.us, msmith@ci.lake-city.mn.us, mark.schoenfelder@state.mn.us, dflesch@co.wabasha.mn.us, greg.isakson@co.goodhue.mn.us, lcchamber@lakecity.org, brogers@sehinc.com, banderson@sehinc.com, ethan.seaberg@co.goodhue.mn.us, kjersti.anderson@state.mn.us

SEH believes that this document accurately reflects the business transacted during the meeting. If any attendee believes that there are any inconsistencies, omissions or errors in the minutes, they should notify the writer at once. Unless objections are raised within seven (7) days, we will consider this account accurate and acceptable to all. **If there are errors contained in this document, or if relevant information has been omitted, please contact Bob Rogers at 651-765-2945 or brogers@sehinc.com**



AGENDA

Highway 61 Scoping Study Committee Meeting

Thursday, December 17, 2015

10:00 a.m.

City Hall Office, Lake City MN

Copies to: Committee Members (City of Lake City, MnDOT, Goodhue County, Wabasha County, Lake City Chamber of Commerce, SEH)

- I. Final Study Report – (draft sent electronically on 11/20/15)
 - A. Traffic Analysis
 - B. Water Quality/Drainage Analysis
 - C. Conceptual Design Options
 - 1. Zone 1: Hok-Si-La Park to Central Pointe Road
 - 2. Zone 2: Central Pointe Road to Park Street/Jewell Avenue
 - 3. Zone 3: Park Street/Jewell Avenue to Elm Street
 - a. Option A: On-Road Bike Lanes
 - b. Option B: Widened Sidewalks
 - 4. Cost Estimates
 - D. Recommendation & Funding Options
- II. Finalizing Corridor Study Process
 - A. Report Reproductions
 - B. Project File Transfer



MEETING SUMMARY

Highway 61 Scoping Study
Study Committee Meeting
December 17, 2015
Lake City City Hall

Meeting Chair: Scott Jensen

Summary by: Bob Rogers

Present: Scott Jensen, Megan Smith, Rob Keehn - City of Lake City; Mark Schoenfelder - MnDOT; Andrea Hamilton - Lake City Chamber of Commerce; Bob Rogers, Bill Anderson - SEH

Copies to: Study Committee Members

I. Study Purpose Recap

- A. Bob provided a brief review of the study goals and primary objectives which included the development of conceptual design options for Highway 61, consideration of water quality BMP opportunities along the corridor, and developing ideas for enhanced pedestrian/bicycle features.

II. Traffic Analysis Update

- A. Since the last Study Group meeting, SEH conducted a high level crash analysis and added pedestrian count data that was collected at the analyzed intersections. The Scoping Study Report includes a summary of the technical memorandum with an emphasis on existing and projected traffic operations and safety conditions.

III. Water Quality/Drainage Analysis Update

- A. The Stormwater Management Opportunities along Highway 61 through Lake City Technical Memorandum was modified slightly based on comments from the previous Study Group Meeting. An introductory section has been added that discusses the existing Lake Pepin water quality conditions. The Study Group felt this information would be important as part of future grant funding opportunities.

IV. Conceptual Design Update

- A. Bob provided an overview of the revised conceptual layouts and typical sections. Several modifications were made including:
 - minor turn lanes adjustments;
 - median extensions;
 - moving location of crosswalks;
 - adding/eliminating bump outs;
 - addition of a Zone 3A (w/bike lanes) and Zone 3B (widened sidewalks) through the downtown area;
 - narrowing travel lanes to 11' and expanding the shared center left turn lane; and
 - minor adjustments in the high level cost estimates.

- B. The Study Group discussed several design features/options throughout the corridor. These related to turn lanes/bypass lanes, stormwater BMPs, bump-outs, sidewalk/trail widths, parking, bike lanes, and travel/turn lane widths.

***ACTION ITEM:** SEH will refine the conceptual layouts to include several minor changes and the addition of a few text boxes highlighting options and/or items to be further considered during more detailed design.*

V. Study Report

- A. An electronic copy of the draft Study Report was distributed prior to meeting. The report will be finalized in early January and staff intends to present the report to the City Council at an upcoming council workshop.

***ACTION ITEM:** Any final comments on the report should be forwarded to SEH as soon as possible since the report will be finalized and distributed to the City Council in early January.*

VI. Next Steps

- A. The Study Group discussed the next steps in the project development process. Preliminary design and the identification of funding are the next steps required to moving the project forward. Continued coordination with MnDOT is vital in advance of their programmed 2019 preservation improvements.

E-mail Contact list: sjensen@ci.lake-city.mn.us, rkeehn@ci.lake-city.mn.us, msmith@ci.lake-city.mn.us, mark.schoenfelder@state.mn.us, dflesch@co.wabasha.mn.us, greg.isakson@co.goodhue.mn.us, lcchamber@lakecity.org, brogers@sehinc.com, banderson@sehinc.com, ethan.seaberg@co.goodhue.mn.us, kjersti.anderson@state.mn.us

SEH believes that this document accurately reflects the business transacted during the meeting. If any attendee believes that there are any inconsistencies, omissions or errors in the minutes, they should notify the writer at once. Unless objections are raised within seven (7) days, we will consider this account accurate and acceptable to all. **If there are errors contained in this document, or if relevant information has been omitted, please contact Bob Rogers at 651-765-2945 or brogers@sehinc.com**

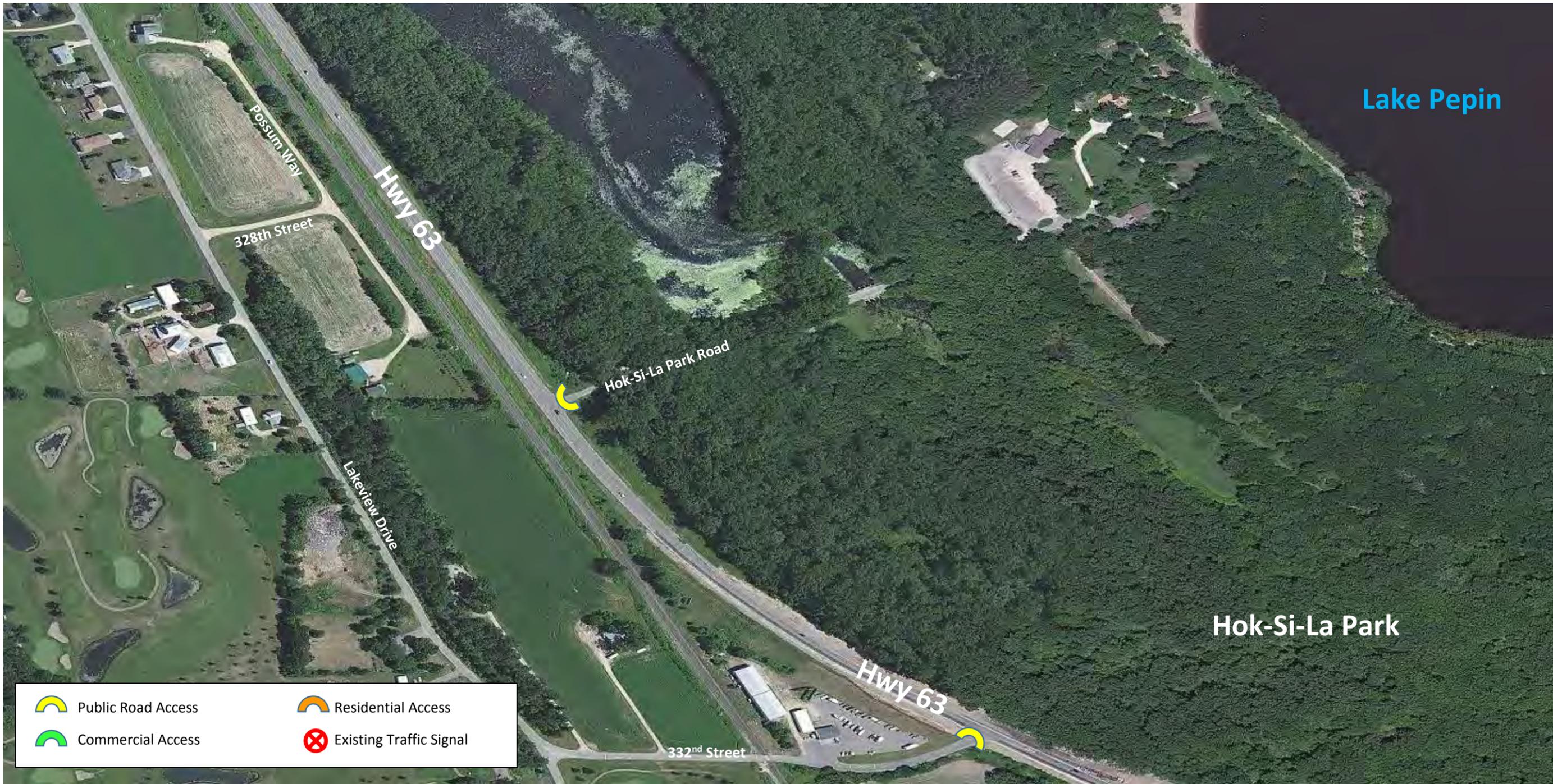
US Highway 61 Scoping Study

Committee Meeting Roster

Name	Title	Agency	E-mail
Scott Jensen	Director of Public Works	Lake City	sjensen@ci.lake-city.mn.us
Rob Keehn	Community Development Director	Lake City	rkeehn@ci.lake-city.mn.us
Megan Smith	City Planner	Lake City	msmith@ci.lake-city.mn.us
Mark Schoenfelder	Transportation Planner	MnDOT D-6	mark.schoenfelder@state.mn.us
Dietrich Flesch	County Engineer	Wabasha Co.	dflesch@co.wabasha.mn.us
Greg Isakson	County Engineer	Goodhue Co.	greg.isakson@co.goodhue.mn.us
Andrea Hamilton	Director, Chamber of Commerce	L..C.C.C.	lcchamber@lakecity.org
Bob Rogers	Sr. Transportation Planner	SEH	brogers@sehinc.com
Bill Anderson	Lake City Engineer	SEH	banderson@sehinc.com
Ethan Seaberg	Public Works/Program Manager	Goodhue Co.	ethan.seaberg@co.goodhue.mn.us
Kjersti Anderson	Project Manager	MnDOT D-6	kjersti.anderson@state.mn.us

APPENDIX B

EXISTING HIGHWAY 61 ACCESS INVENTORY MAPS



Lake Pepin

Hok-Si-La Park

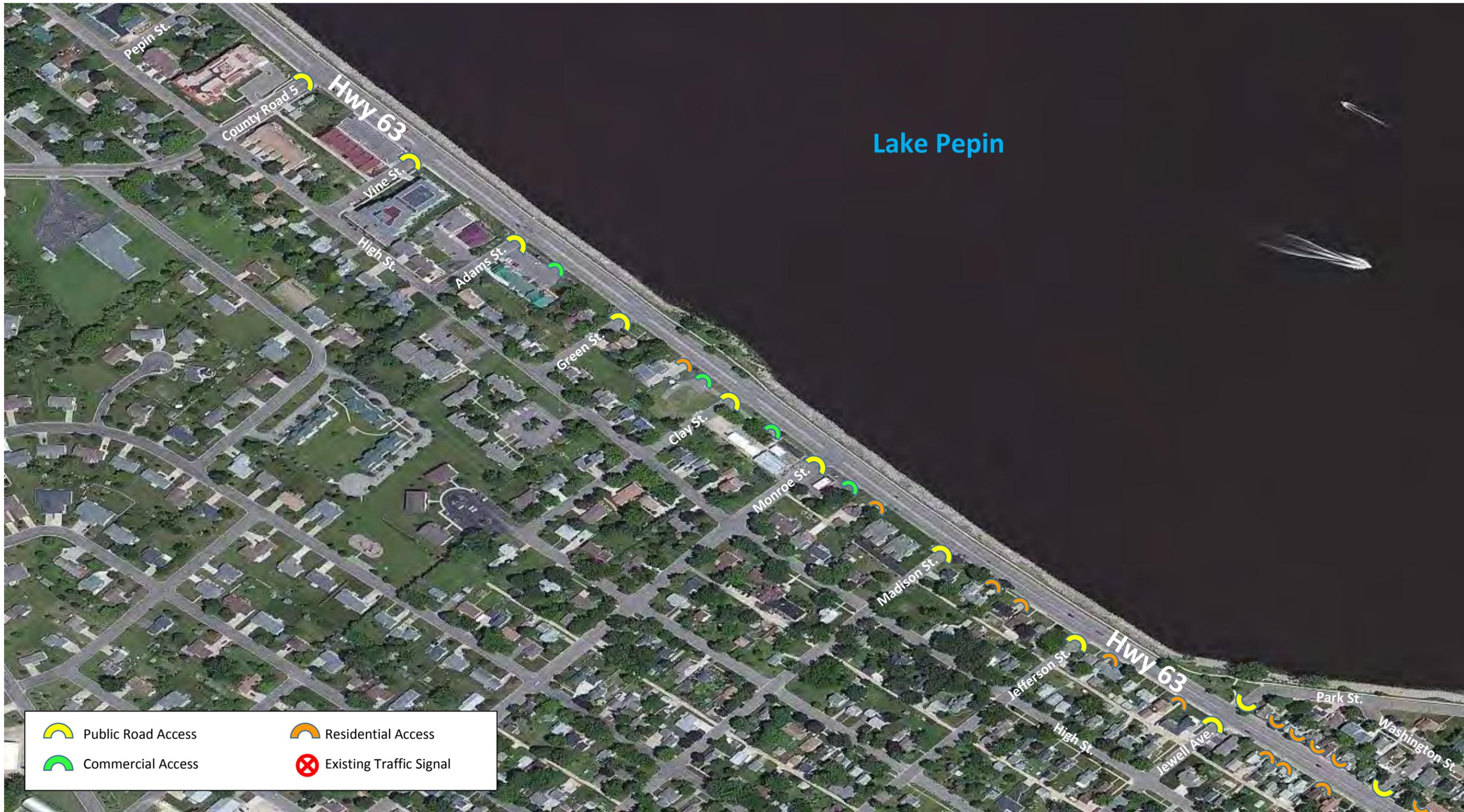
-  Public Road Access
-  Residential Access
-  Commercial Access
-  Existing Traffic Signal



Hok-Si-La Park

Lake Pepin

-  Public Road Access
-  Residential Access
-  Commercial Access
-  Existing Traffic Signal



Lake Pepin



- | | | | |
|---|--------------------|---|-------------------------|
|  | Public Road Access |  | Residential Access |
|  | Commercial Access |  | Existing Traffic Signal |

APPENDIX C

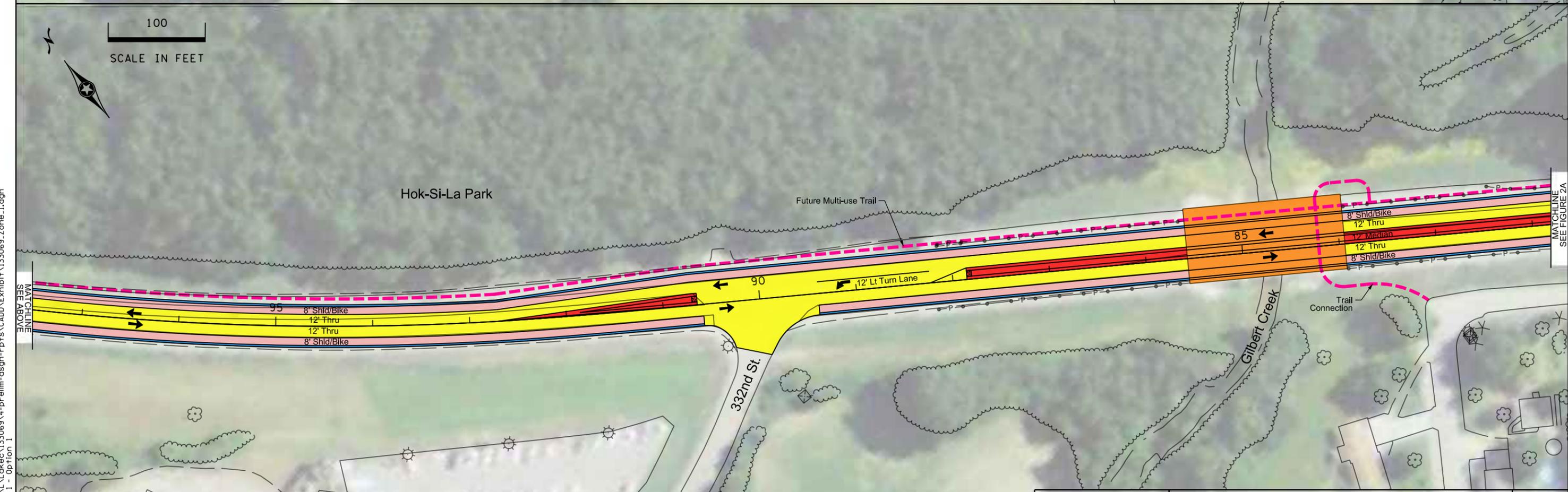
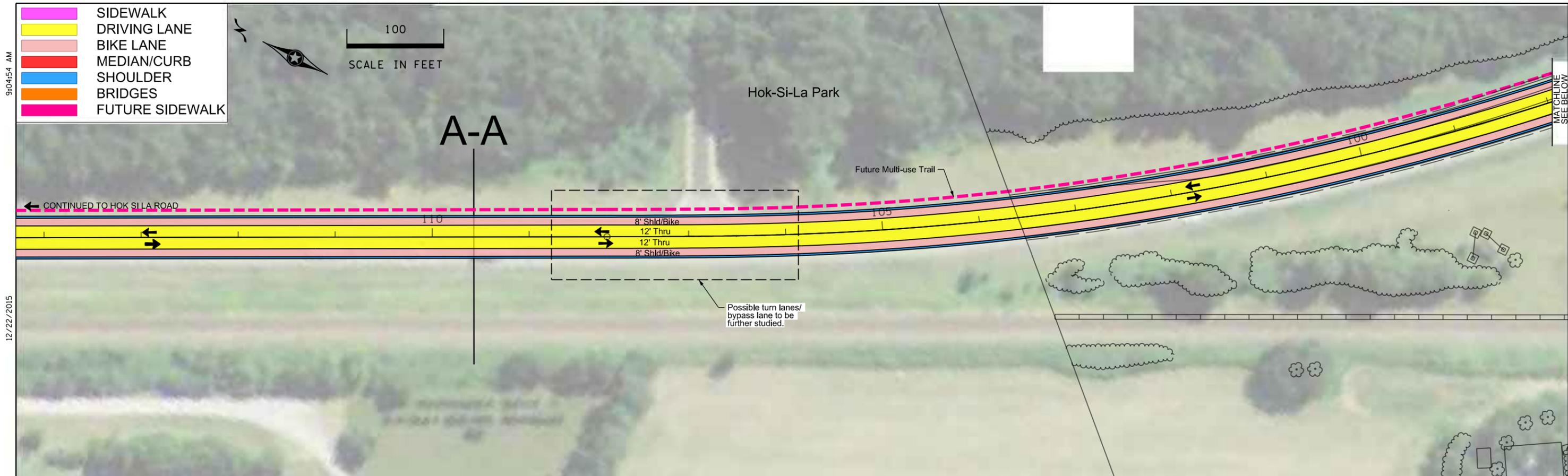
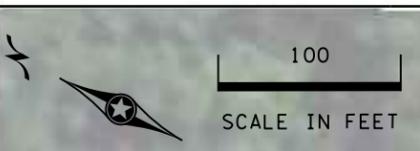
CONCEPTUAL LAYOUT AND TYPICAL SECTIONS

Zone 1: Figures 1A & 2A

Zone 2: Figures 3A & 4A

Zone 3: Figures 5A & 6A (Option A); Figures 5B & 6B (Option B)

- SIDEWALK
- DRIVING LANE
- BIKE LANE
- MEDIAN/CURB
- SHOULDER
- BRIDGES
- FUTURE SIDEWALK

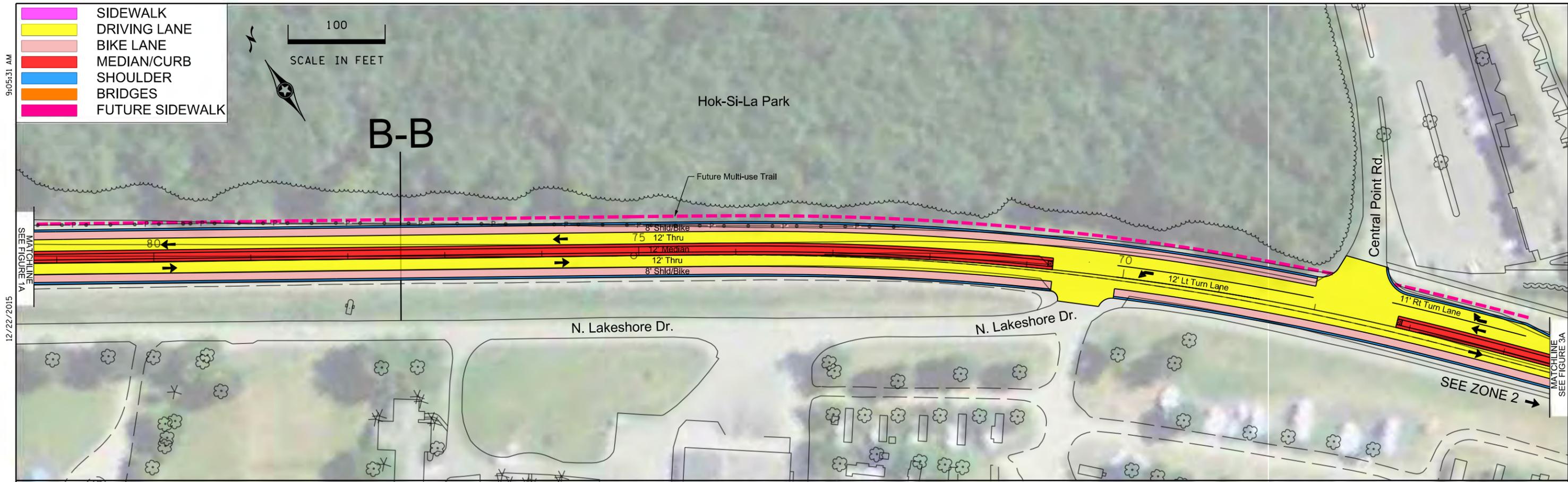


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Zone 1 - Option 1

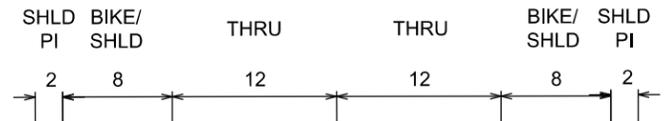


ZONE 1
HOK SI LA ROAD TO CENTRAL POINT ROAD
55 MPH

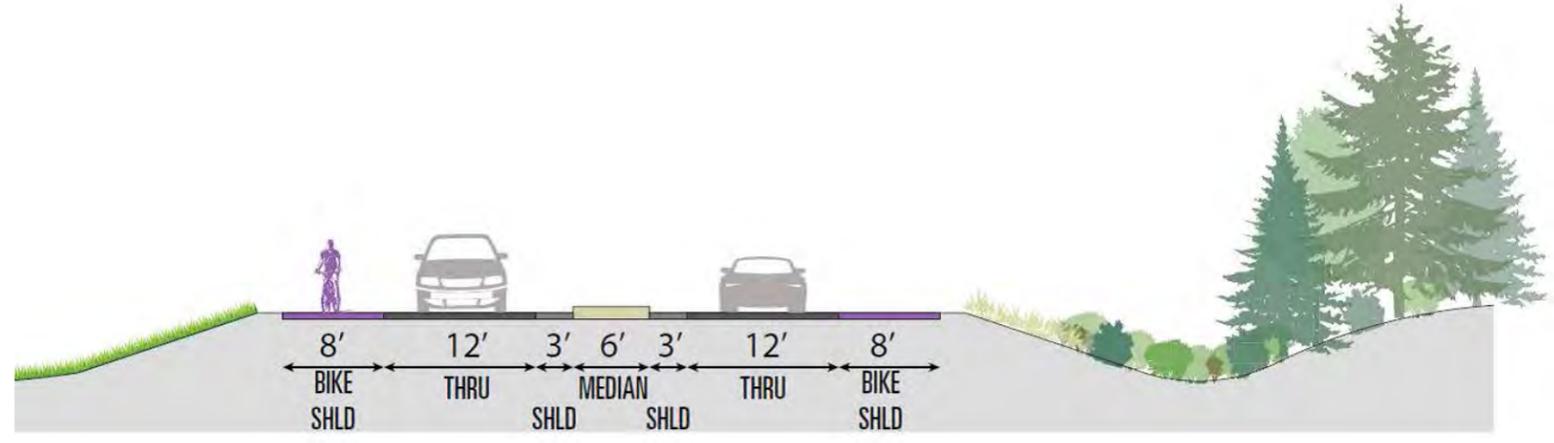
FILE NO.
LAKEC133069
1A



SECTION A-A - Match Existing Highway Section



SECTION B-B



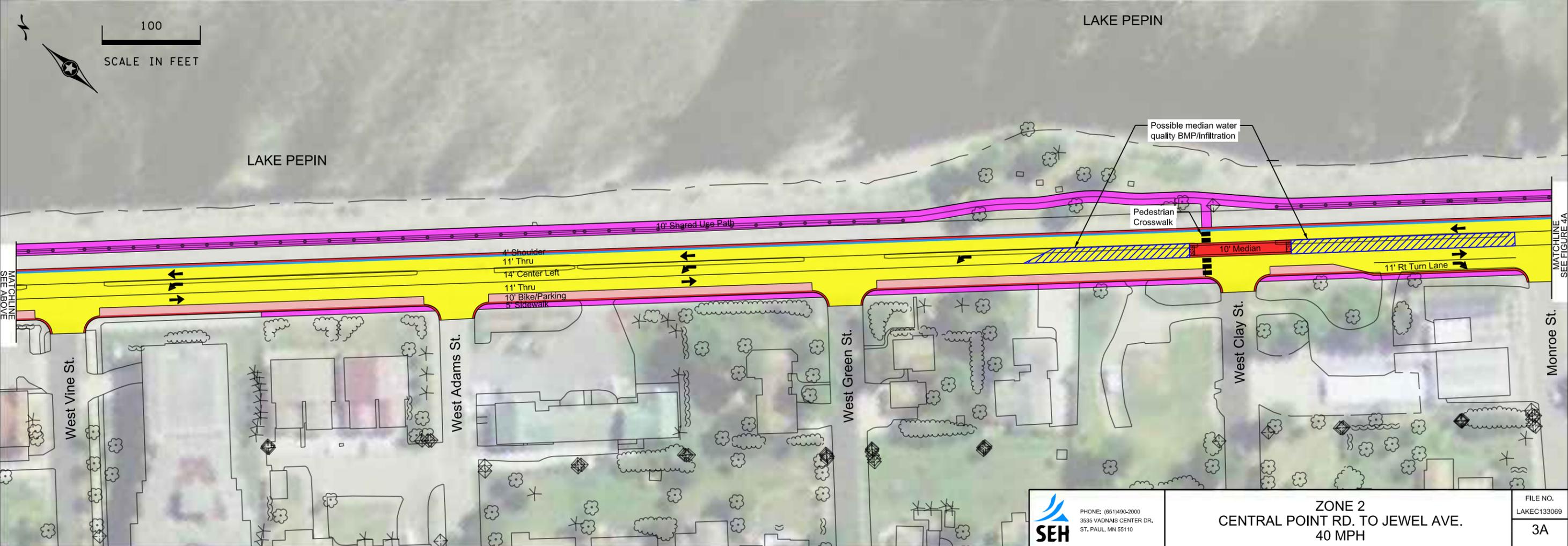
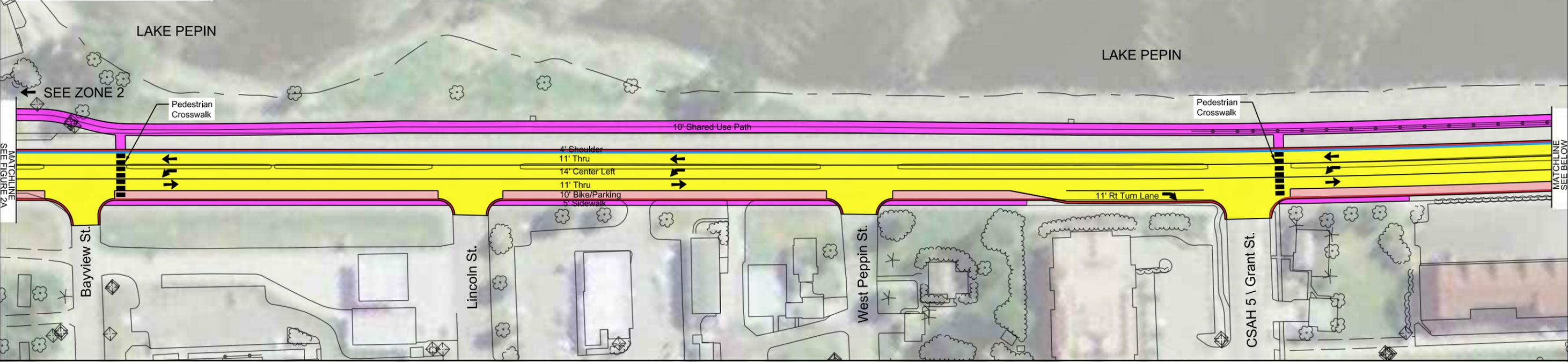
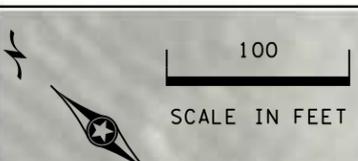
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Zone 1 - Option 1 - 2

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12/22/2015

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ZONE 2 - OPTION 2

- SIDEWALK
- DRIVING LANE
- BIKE LANE
- MEDIAN/CURB
- SHOULDER
- BRIDGES
- FUTURE SIDEWALK



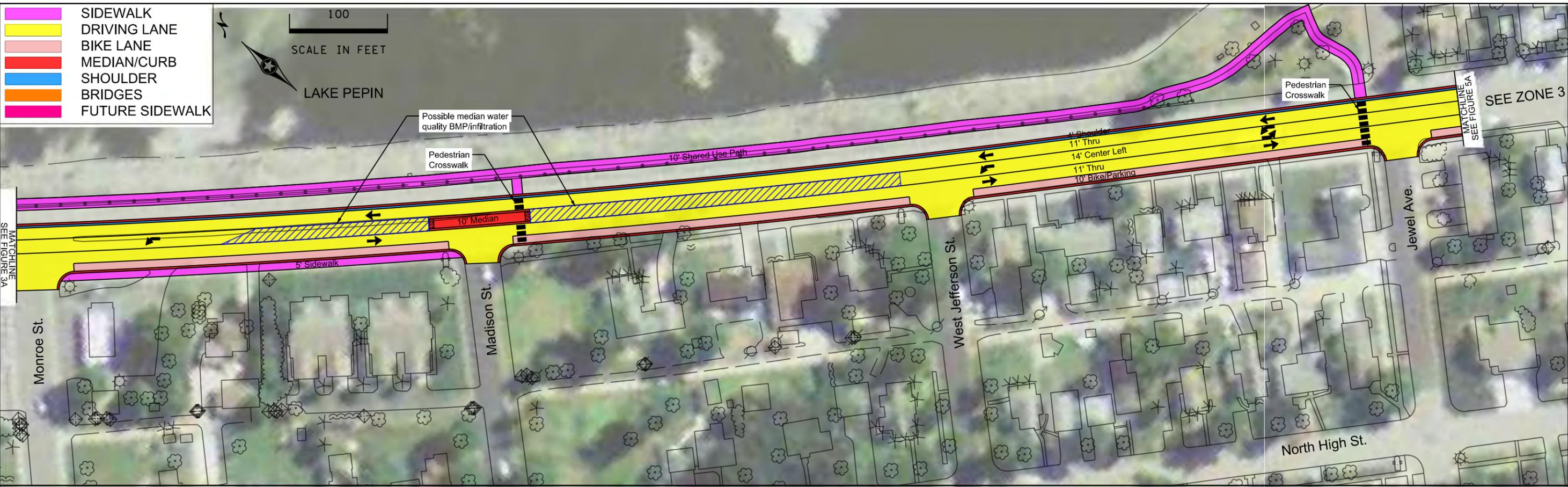
ZONE 2
CENTRAL POINT RD. TO JEWEL AVE.
40 MPH

FILE NO.
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3A

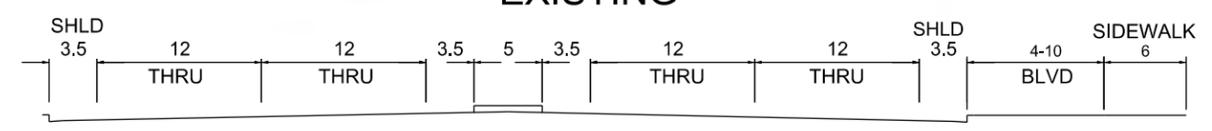
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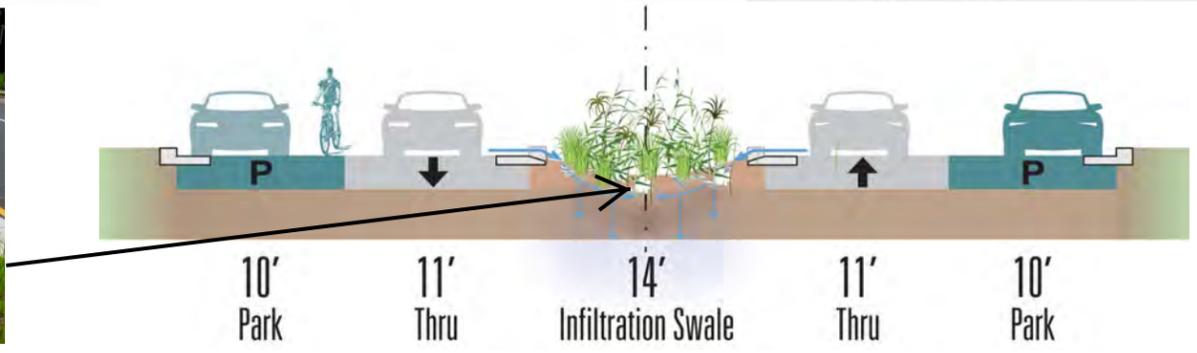
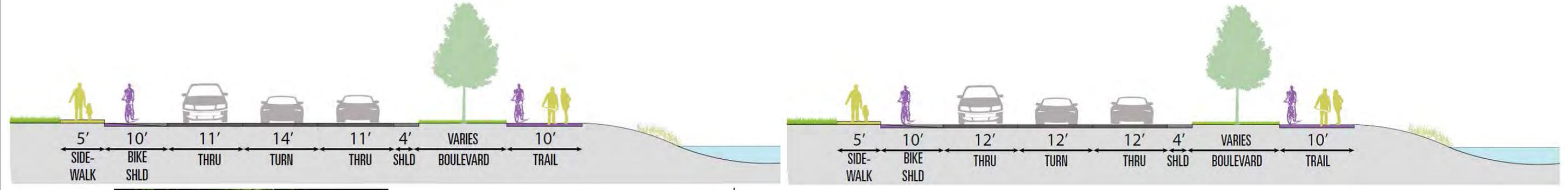
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ZONE 2 - OPTION 2 - 2



EXISTING



OPTIONS



SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ZONE 2
CENTRAL POINT RD. TO JEWEL AVE.
40 MPH

FILE NO.
LAKEC133069
4A

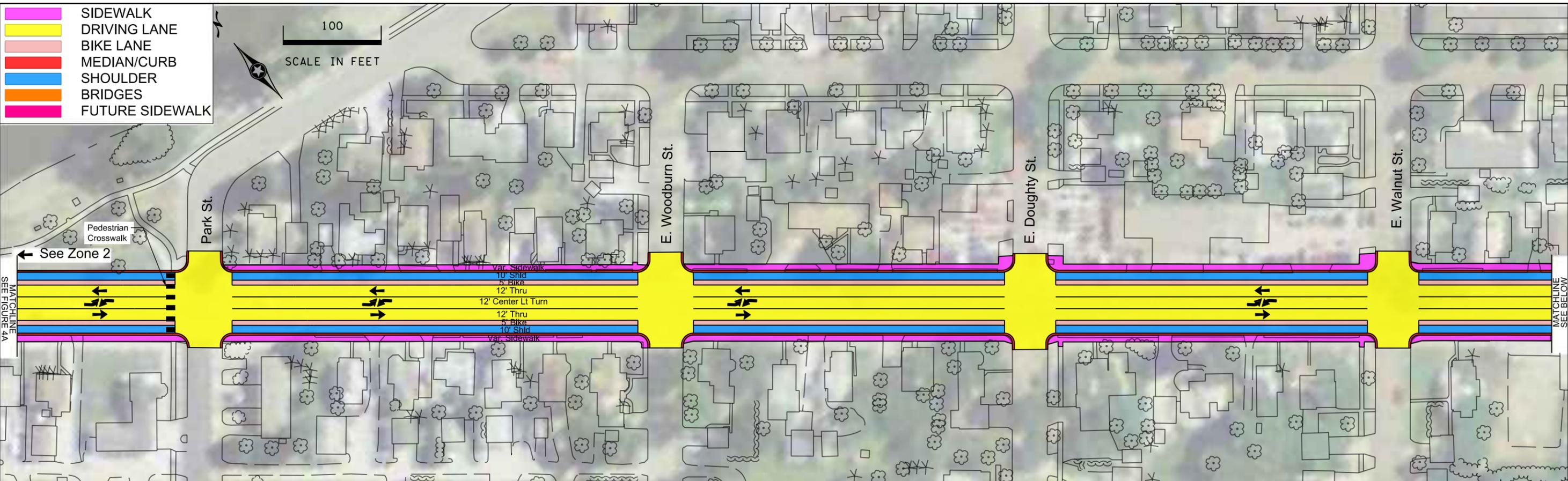
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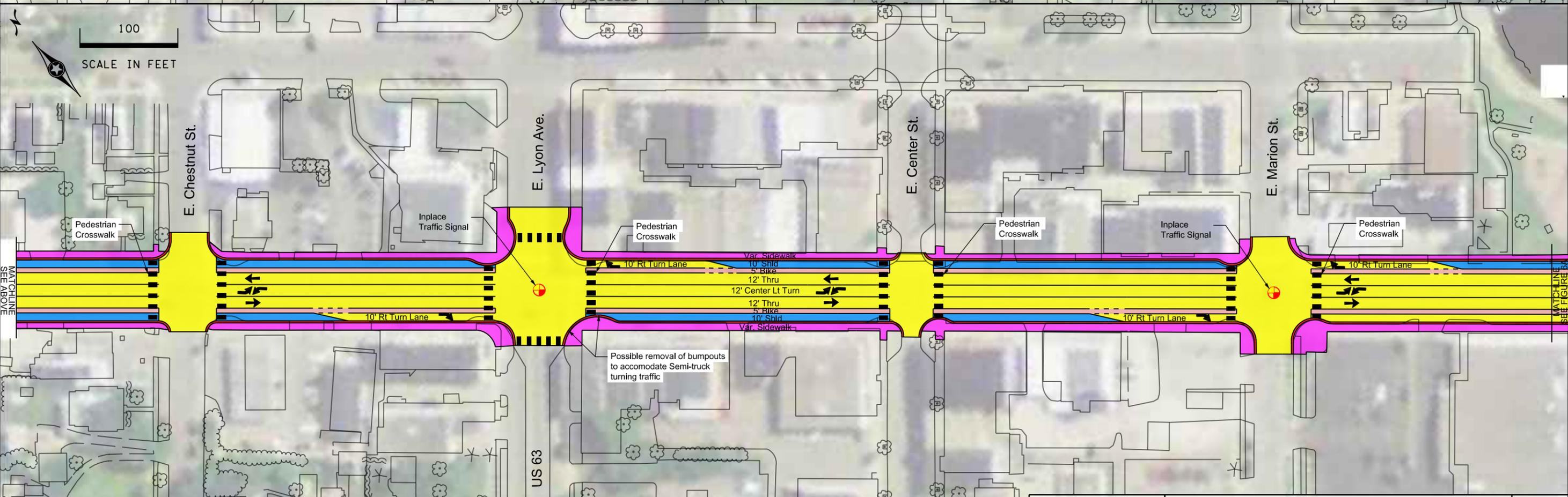
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ZONE 3 - OPTION 4

- SIDEWALK
- DRIVING LANE
- BIKE LANE
- MEDIAN/CURB
- SHOULDER
- BRIDGES
- FUTURE SIDEWALK

100
SCALE IN FEET



100
SCALE IN FEET



SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ZONE 3
PARK ST. TO WEST ELM ST.
30 MPH

FILE NO.
 LAKEC133069
5A

- SIDEWALK
- DRIVING LANE
- BIKE LANE
- MEDIAN/CURB
- SHOULDER
- BRIDGES
- FUTURE SIDEWALK

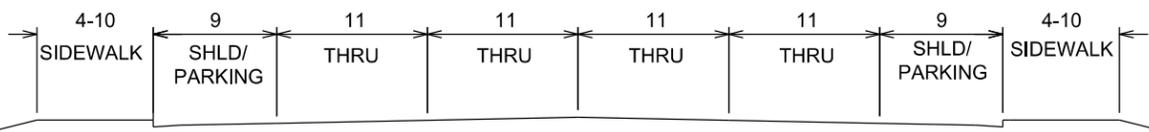
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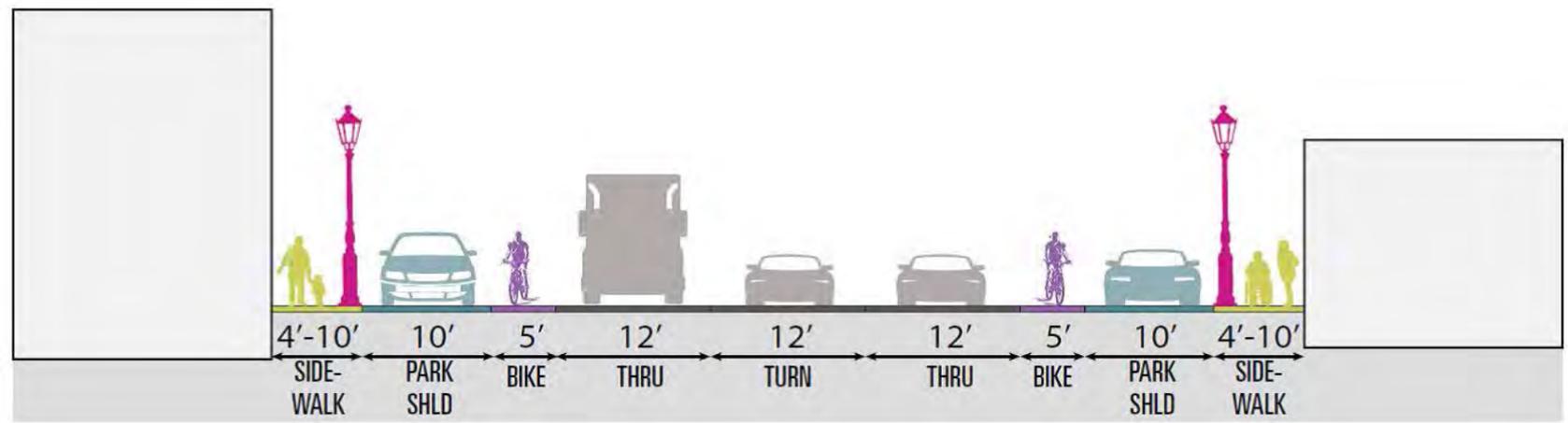
12/22/2015



EXISTING



OPTION A - ON ROAD BIKE LANE



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ZONE 3 - OPTION 4 - 2

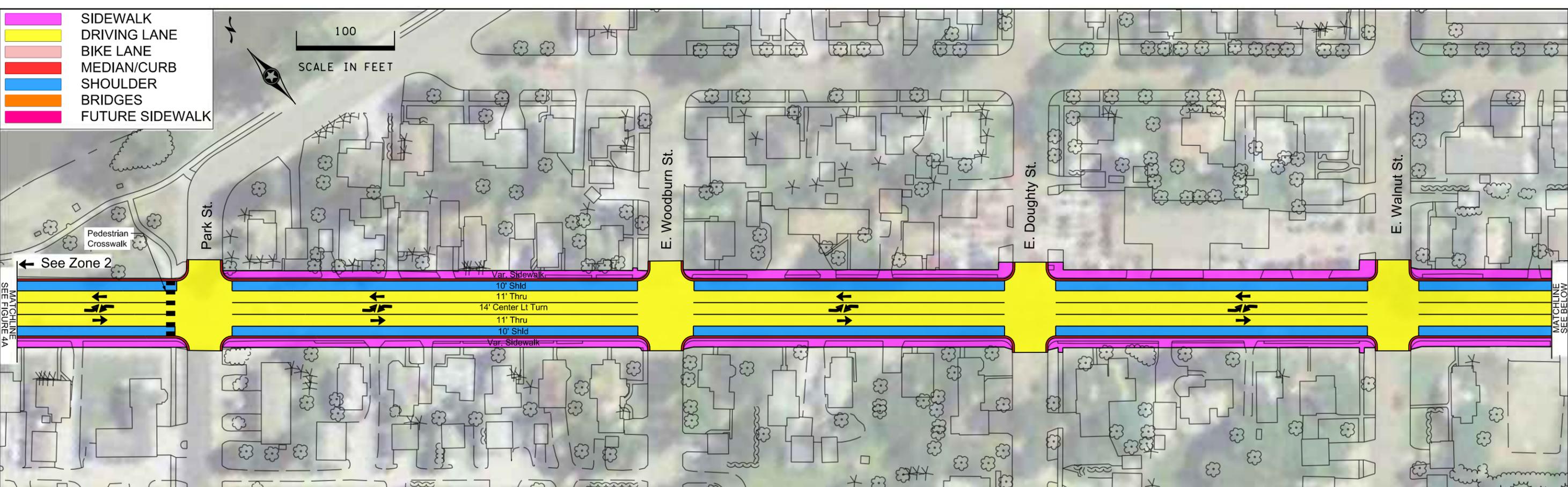
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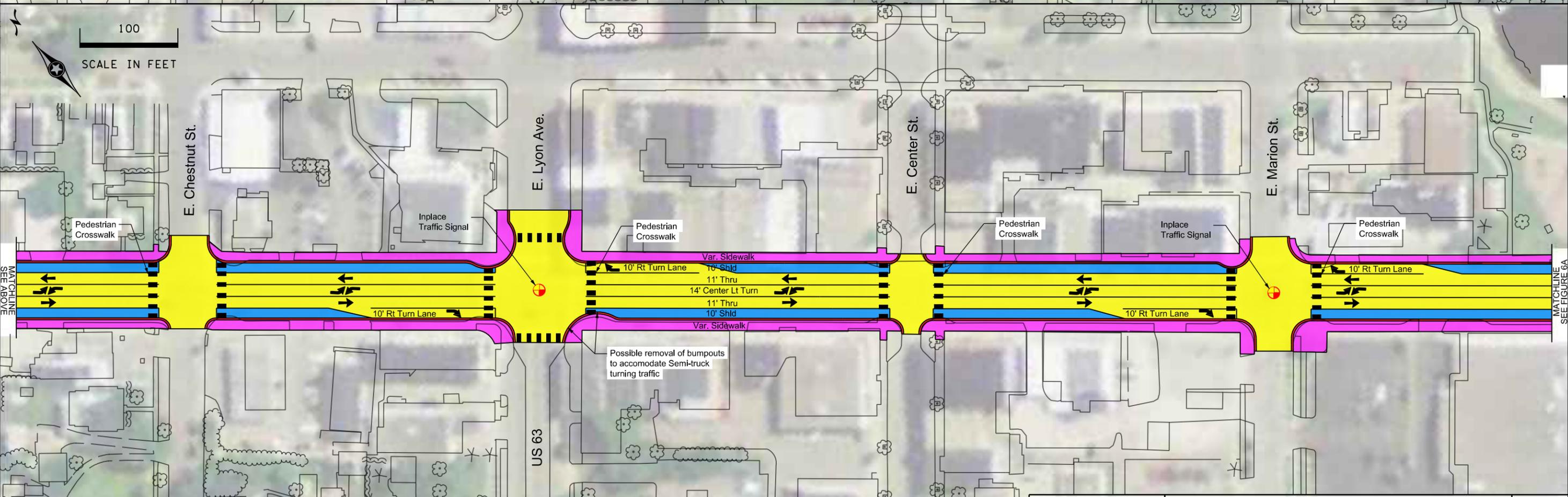
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ZONE 3 - OPTION 5

- SIDEWALK
- DRIVING LANE
- BIKE LANE
- MEDIAN/CURB
- SHOULDER
- BRIDGES
- FUTURE SIDEWALK

100
SCALE IN FEET



100
SCALE IN FEET



SEH

PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ZONE 3
PARK ST. TO WEST ELM ST.
30 MPH

FILE NO.
LAKEC133069
5B

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12/22/2015

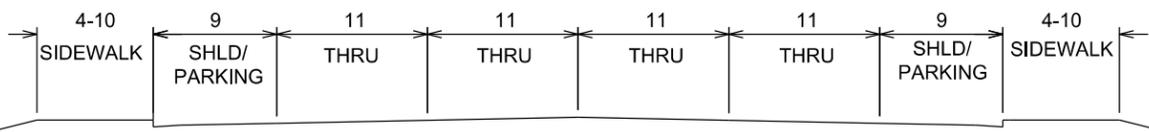
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ZONE 3 - OPTION 5 - 2

- SIDEWALK
- DRIVING LANE
- BIKE LANE
- MEDIAN/CURB
- SHOULDER
- BRIDGES
- FUTURE SIDEWALK

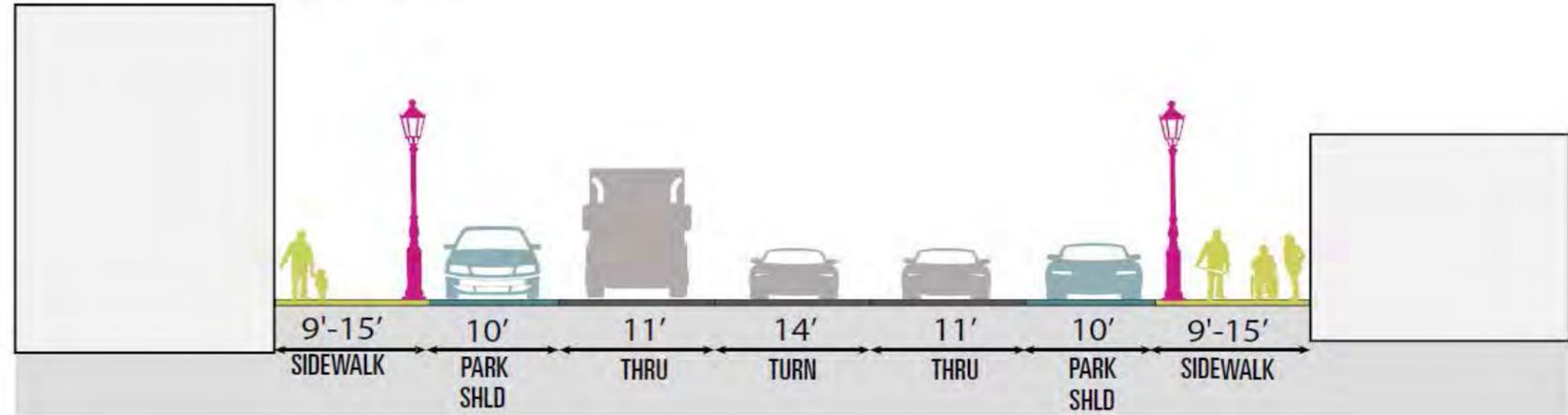
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SCALE IN FEET



EXISTING



OPTION B - WIDENED SIDEWALK



APPENDIX D

PLANNING LEVEL COST ESTIMATES

Preliminary Construction Cost Estimate

Lake City TH 61 10/27/2015				
Item Description	Units	Unit Cost	Quantity	Total
PAVING AND GRADING (P & G) COSTS				
Bituminous Pavement (1)	ton	\$75.00	8,587	\$ 643,994
4" Concrete Walk	sq ft	\$6.00		\$ -
Class 5 Aggregate Base (1)	cu yd	\$25.00	0	\$ -
Mill Bituminous Surface (2.0")	Sq Yd	\$2.50	30,395	\$ 75,988
Curb and Gutter Design B624	lin ft	\$20.00		\$ -
Raised Median Concrete (3Y46)	sq ft	\$11.00	22,167	\$ 243,837
(a) Subtotal Paving and Grading				\$ 963,819
UTILITIES, REMOVALS, DRAINAGE, ETC.				
Removals/Clear and Grub		5.0%		\$ 48,191
Minor City Utilities				\$ -
Signing, Striping, Traffic Control		10.0%		\$ 96,382
Erosion Control and Turf Establishment		10.0%		\$ 96,382
(b) Subtotal Utilities, Removals, Drainage, Etc.				\$ 240,955
DRAINAGE				
Storm Sewer		5.0%		\$ 48,191
(c) Subtotal Drainage				\$ 48,191
STRUCTURES/SIGNALS/MISC. COST				
Lighting	lump sum	\$50,500		\$ -
Signal	system	\$ 250,000.00		\$ -
(d) Subtotal Structural				\$ -
(a+b+c+d) Subtotal Construction				\$ 1,252,964
Risk & Contingency		10.0%		\$ 125,296
(e) Subtotal Miscellaneous				\$ 125,296
(a+b+c+d+e) Total Construction				\$ 1,378,261
Administrative & Engineering				
RW Cost				
RW - City Parcels				
15% Contingency - City Parcels				
RW - Outside of City Parcels				
15% Contingency - Outside of City Parcels				
Total RW				\$ -
Total Estimated Cost - TH 61 - Zone 1				\$ 1,378,261

Preliminary Construction Cost Estimate

Lake City TH 61				
10/27/2015				
Item Description	Units	Unit Cost	Quantity	Total
<u>PAVING AND GRADING (P & G) COSTS</u>				
Bituminous Pavement (1)	ton	\$75.00	7,214	\$ 541,060
4" Concrete Walk	sq ft	\$6.00	68,579	\$ 411,474
Class 5 Aggregate Base (1)	cu yd	\$25.00	1,270	\$ 31,750
Curb and Gutter Design B624	lin ft	\$20.00	9,064	\$ 181,280
Raised Median Concrete (3Y46)	sq ft	\$11.00	2,903	\$ 31,933
Mill Bituminous Surface (2.0")	sq yd	\$2.50	25,537	\$ 63,842
6" Concrete Driveway Pavement	sq yd	\$50.00	400	\$ 20,000
(a) Subtotal Paving and Grading				\$ 1,281,339
<u>UTILITIES, REMOVALS, DRAINAGE, ETC.</u>				
Removals/Clear and Grub		5.0%		\$ 64,067
Minor City Utilities		5.0%		\$ 64,067
Signing, Striping, Traffic Control		10.0%		\$ 128,134
Erosion Control and Turf Establishment		10.0%		\$ 128,134
(b) Subtotal Utilities, Removals, Drainage, Etc.				\$ 384,402
<u>DRAINAGE</u>				
Storm Sewer		10.0%		\$ 128,134
(c) Subtotal Drainage				\$ 128,134
<u>STRUCTURES/SIGNALS/MISC. COST</u>				
Lighting	lump sum	\$50,500		\$ -
Signal	system	\$ 200,000.00		\$ -
(d) Subtotal Structural				\$ -
(a+b+c+d) Subtotal Construction				\$ 1,793,875
Risk & Contingency		10.0%		\$ 179,387
(e) Subtotal Miscellaneous				\$ 179,387
(a+b+c+d+e) Total Construction				\$ 1,973,262
Administrative & Engineering				
<u>RW Cost</u>				
RW - City Parcels				
15% Contingency - City Parcels				
RW - Outside of City Parcels				
15% Contingency - Outside of City Parcels				
Total RW				\$ -
Total Estimated Cost - TH 61 - Zone 2				\$ 1,973,262

Preliminary Construction Cost Estimate

Lake City TH 61 10/27/2015				
Item Description	Units	Unit Cost	Quantity	Total
PAVING AND GRADING (P & G) COSTS				
Bituminous Pavement (1)	ton	\$75.00	7,896	\$ 592,188
4" Concrete Walk	sq ft	\$6.00	1,000	\$ 6,000
Class 5 Aggregate Base (1)	cu yd	\$25.00	800	\$ 20,000
Curb and Gutter Design B624	lin ft	\$20.00	4,000	\$ 80,000
Raised Median Concrete (3Y46)	sq ft	\$11.00	0	\$ -
Mill Bituminous Surface (2.0")	sq yd	\$2.50	27,950	\$ 69,875
Saw Concrete Pavement	lin ft	\$5.00	4,000	\$ 20,000
6" Driveway Pavement	sq yd	\$50.00	533	\$ 26,667
(a) Subtotal Paving and Grading				\$ 814,730
UTILITIES, REMOVALS, DRAINAGE, ETC.				
Removals/Clear and Grub		5.0%		\$ 40,736
Minor City Utilities		5.0%		\$ 40,736
Signing, Striping, Traffic Control		10.0%		\$ 81,473
Erosion Control and Turf Establishment		10.0%		\$ 81,473
(b) Subtotal Utilities, Removals, Drainage, Etc.				\$ 244,419
DRAINAGE				
Storm Sewer		10.0%		\$ 81,473
(c) Subtotal Drainage				\$ 81,473
STRUCTURES/SIGNALS/MISC. COST				
Lighting	lump sum	\$50,500		\$ -
Signal	system	\$ 250,000.00	2	\$ 500,000
(d) Subtotal Structural				\$ 500,000
(a+b+c+d) Subtotal Construction				\$ 1,640,622
Risk & Contingency		10.0%		\$ 164,062
(e) Subtotal Miscellaneous				\$ 164,062
(a+b+c+d+e) Total Construction				\$ 1,804,684
Administrative & Engineering				
<i>RW Cost</i>				
RW - City Parcels				
15% Contingency - City Parcels				
RW - Outside of City Parcels				
15% Contingency - Outside of City Parcels				
Total RW				\$ -
Total Estimated Cost - TH 61 - Zone 3A				\$ 1,804,684

Preliminary Construction Cost Estimate

Lake City TH 61 10/27/2015				
Item Description	Units	Unit Cost	Quantity	Total
PAVING AND GRADING (P & G) COSTS				
Bituminous Pavement (1)	ton	\$75.00	7,194	\$ 539,577
4" Concrete Walk	sq ft	\$6.00	59,917	\$ 359,502
Class 5 Aggregate Base (1)	cu yd	\$25.00	1,110	\$ 27,739
Curb and Gutter Design B624	lin ft	\$20.00	7,355	\$ 147,100
Raised Median Concrete (3Y46)	sq ft	\$11.00	0	\$ -
Mill Bituminous Surface (2.0 ")	sq yd	\$2.50	25,467	\$ 63,667
6" Driveway Pavement	sq yd	\$50.00	533	\$ 26,667
(a) Subtotal Paving and Grading				\$ 1,164,252
UTILITIES, REMOVALS, DRAINAGE, ETC.				
Removals/Clear and Grub		5.0%		\$ 58,213
Minor City Utilities		5.0%		\$ 58,213
Signing, Striping, Traffic Control		10.0%		\$ 116,425
Erosion Control and Turf Establishment		10.0%		\$ 116,425
(b) Subtotal Utilities, Removals, Drainage, Etc.				\$ 349,276
DRAINAGE				
Storm Sewer		20.0%		\$ 232,850
(c) Subtotal Drainage				\$ 232,850
STRUCTURES/SIGNALS/MISC. COST				
Lighting	lump sum	\$50,500		\$ -
Signal	system	\$ 250,000.00	2	\$ 500,000
(d) Subtotal Structural				\$ 500,000
(a+b+c+d) Subtotal Construction				\$ 2,246,378
Risk & Contingency		10.0%		\$ 224,638
(e) Subtotal Miscellaneous				\$ 224,638
(a+b+c+d+e) Total Construction				\$ 2,471,016
Administrative & Engineering				
RW Cost				
RW - City Parcels				
15% Contingency - City Parcels				
RW - Outside of City Parcels				
15% Contingency - Outside of City Parcels				
Total RW				\$ -
Total Estimated Cost - TH 61 - Zone 3B				\$ 2,471,016

134506

PRELIMINARY FUTURE BIKE LANE ESTIMATE

OPTION ONE - SHOULDER ROUTE ENTIRE LENGTH

TH 61 FROM CENTRAL POINT ROAD TO

HOK-SI-LA PARK ENTRANCE ROAD

LAKE CITY, MINNESOTA

Item #	Description	Quantity	Unit	Price	Amount
1	Common Borrow	12,000	C.Y.	\$10.00	\$120,000.00
2	Aggregate Base	1,500	TON	\$30.00	\$45,000.00
3	Bituminous Paving	700	TON	\$100.00	\$70,000.00
4	Guardrail	2,400	L.F.	\$20.00	\$48,000.00
5	Fence	3,225	L.F.	\$25.00	\$80,625.00
6	Salvage Topsoil	1,700	C.Y.	\$5.00	\$8,500.00
7	Silt Fence	3,300	L.F.	\$3.00	\$9,900.00
8	Seeding & Mulch	3	AC.	\$1,500.00	\$4,500.00
9	Extend Culverts	2	EA.	\$1,500.00	\$3,000.00
	Total Future Bike Lane Construction Cost				\$389,525.00
	Contingencies				\$38,952.50
	TOTAL CONSTRUCTION COST				\$428,477.50
	Engineering Design *				\$64,271.63
	Engineering Staking & Inspection				\$42,847.75
	TOTAL				\$535,596.88

APPENDIX E

STORMWATER MANAGEMENT OPPORTUNITIES ALONG HIGHWAY 61 THROUGH LAKE CITY TECHNICAL MEMORANDUM



Building a Better World
for All of Us®

MEMORANDUM

TO: Scott Jensen | Director of Public Works, Lake City

FROM: Patrick Sejkora, PE | Water Resources Engineer
Rebecca Nestingen, PE, CFM | Water Resources Engineer
Bob Rogers, AICP, | Project Manager | Transportation Planner

DATE: October 7, 2015

RE: Stormwater Management Opportunities along Highway 61 through Lake City
SEH No. LAKEC 133069

Short Elliot Hendrickson, Inc. (SEH) performed a site visit to the City of Lake City, Minnesota (The City) on July 27, 2015 to inspect existing stormwater drainage along the section of Highway 61 proposed for reconstruction and evaluate possible areas for Best Management Practices (BMPs) which may be incorporated in the reconstruction. The implementation of stormwater BMPs will reduce stormwater volume and pollution discharged to Lake Pepin.

Lake Pepin is a naturally-occurring lake on the Mississippi River along the border of Minnesota and Wisconsin. The Lake is currently impaired by high levels of nutrients and turbidity. The excessive levels of nutrients have led to Lake Pepin being subject to a Total Maximum Daily Load (TMDL) program, and the Minnesota Pollution Control Agency (MPCA) lists the lake as an Impaired Water. The goal of the Lake Pepin TMDL program is to define the amount of pollutants the lake can carry without exceeding water quality standards. Excess nutrients, including phosphorus, can lead to algal blooms and eutrophication. Turbidity, which is a measurement of the cloudiness of the water, is caused by suspended particles including sediments and algae. Both impairments can negatively impact recreational activities including swimming and fishing. Lake Pepin is also infilling with sediment, and would fill entirely within 300 years at current sediment delivery rates. (MPCA 2007)

Total suspended solids (TSS) and nutrient loading of Lake Pepin must be reduced from current levels to prevent unsustainable eutrophication and in-filling within the lake. The MPCA and other stakeholders determined through pollutant transport modeling that the annual total phosphorus (TP) to Lake Pepin was an estimated 2,261 metric tonnes circa 2002 (Senjem 2009). To bring nutrient levels to acceptable levels, the annual TP loading to Lake Pepin would be 1,398 metric tonnes per year. Similarly, TSS loading of Lake Pepin would need to be approximately 500,000 metric tonnes per year to be sustainable. The TSS loading in 2002 was approximately 862,000 metric tons per year. The MPCA states that a component of reducing pollutant loading to Lake Pepin to acceptable levels is a 25-percent reduction in urban stormwater runoff. For urban areas discharging their stormwater to Lake Pepin, stormwater BMPs would help limit solids and nutrient loading to Lake Pepin.

SEH inspected the existing stormwater structures along US Highway 61 in order to record their size, assess their present condition, and document any possible improvements. To evaluate the existing stormwater drainage from the portion of Highway 61, SEH utilized plans showing the location of existing stormwater structures and outfalls. When an outfall was found, SEH utilized Collector for ArcGIS to record the size, material, condition, and other details of the pipe and its appurtenances. Geotagged photographs of the structure and the surrounding area were also taken. SEH also visually observed the area

Engineers | Architects | Planners | Scientists

Short Elliott Hendrickson Inc., 1701 West Knapp Street, Suite B, Rice Lake, WI 54868-1350
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immediately upstream of the outfall and its structures to determine if there are any existing private stormwater BMPs or impervious areas along the highway that might influence discharges to the outfall.

During the site visit, SEH also evaluated areas along Highway 61 for possible stormwater BMPs. Areas assessed include the right-of-way along the highway, public park areas, vacant parcels, and private properties along the highway. Stormwater BMPs are techniques or practices that reduce stormwater runoff volume and pollution. Examples of BMPs considered for use along the proposed reconstruction of Highway 61 include rain gardens/bioinfiltration basins, stormwater cisterns, porous pavement, bioswales, and bioretention basins. When an area suitable for a potential stormwater BMP was located, SEH noted the location on a map along with any pertinent observations regarding the feasibility of the BMP. These areas are shown on Figures 1 and 2 located in Attachment 1.

SEH also observed and recorded existing deficiencies associated with stormwater drainage along Highway 61 that may negatively affect stormwater quality. Whenever a deficiency was identified, its location was noted by SEH on the corridor map.

Based on SEH's field observations and mapping, there are several possible BMP locations along the proposed reconstruction corridor of Highway 61 for stormwater volume reduction and water quality treatment. Raingardens or other bioretention techniques may be implemented in public park areas such as Lewis McChail Memorial Park and Ohuta Park. Raingardens promote infiltration and provide water quality treatment. Additionally, through use of native plants and flowers, they are an aesthetically pleasing addition to public park areas and provide opportunities for public education. In the downtown area of Lake City, several underutilized or vacant parcels may be candidates for bioretention areas or, when parking areas are desired, porous pavement. Public or municipal buildings in the downtown area along US Highway 61 may be opportunities for stormwater cisterns or rain barrels to disconnect roof drains and reduce stormwater discharges to Lake Pepin. Additionally, existing concrete planters located at the intersection of West Center Street and Highway 61 could be reconstructed into bioinfiltration planters with curb inlets to treat runoff coming downhill along West Center Street. An example roadway cross section with bioinfiltration planters is shown below in Exhibit A. Note this is not illustrative of conditions along Highway 61 in Lake City.

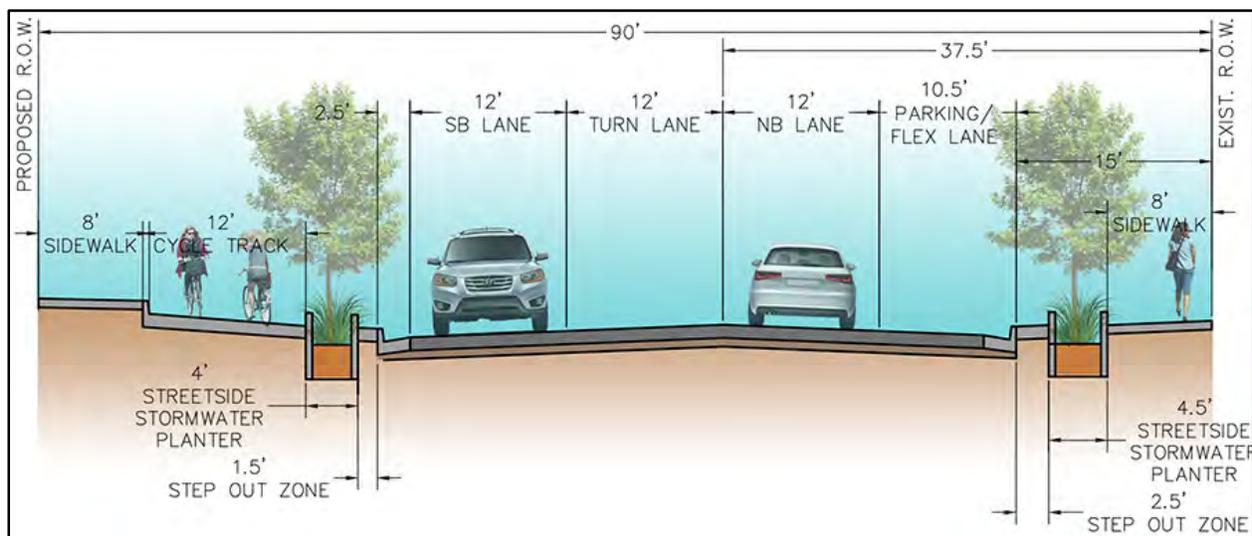


Exhibit A: Sample Bioinfiltration Cross Section

Further northwest along Highway 61, the proposed narrowing of the highway footprint creates an expanded boulevard area between the highway and Lake Pepin which may be utilized for rain gardens

and bioswales. The bioswales may be hydraulically connected to existing stormwater outfalls into Lake Pepin to accommodate larger flows. Several areas in the right-of-way or on private properties located along US Highway 61 may be suitable for bioretention or bioswales (see Figures 1 and 2 found in Attachment A). Bioswales are a natural stormwater runoff conveyance systems that can absorb low flows or carry runoff from heavy rains to storm sewer inlets or even directly to surface waters. Bioswales improve water quality by infiltrating the first flush of storm water runoff and filtering the large storm flows they convey. Typically, curb cuts allow runoff water to enter the bioswales and infiltrate to an underdrain system (see Exhibit B).

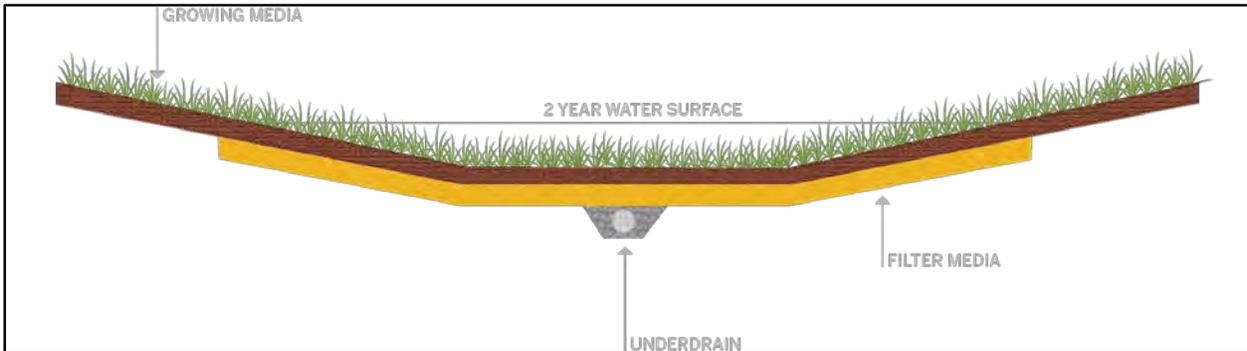


Exhibit B: Bioswale Cross Section

An existing boulevard area along the right-of-way on West Doughty Street near its intersection with the highway may provide an opportunity for an infiltration trench with native plantings. In these cases, the City may consider coordinating with the property owners to implement these BMPs.

Porous pavement and/or pervious pavers (see Exhibit C) were considered, but were considered to not be a desirable BMP along a state trunk highway. This type of BMP is more appropriate and could be considered along local city streets and in areas where right-of-way is constrained by existing development such as a downtown area or densely developed urban area.



Exhibit A: Sample Bioinfiltration

Additionally, SEH observed several opportunities for stormwater quality improvement through housekeeping and maintenance practices along Highway 61. For example, we observed several non-water tight dumpsters immediately upstream and adjacent to catch basins and shallow sump catch basins in parking areas that were clogged with sediment. In cases such as these the City may consider implementing in-line treatment technologies such as deep-sump catch basins, catch basin filter devices or hydrodynamic separators to capture TSS or floatable pollutants and prevent their discharge to Lake Pepin. Finally, erosion and deteriorated concrete was observed at several outfalls. The City should take measures to repair these conditions that contribute excessive TSS to Lake Pepin.

Citations:

Minnesota Pollution Control Agency (2007). Lake Pepin Watershed TMDL: Eutrophication and Turbidity Impairments Overview. Retrieved from <http://www.pca.state.mn.us/index.php/view-document.html?gid=8464>.

Senjem N (2009). "The Lake Pepin TMDL: What's New?" [Powerpoint Slides]. Retrieved from <http://www.pca.state.mn.us/index.php/view-document.html?gid=8481>.

Memorandum Attachment A: Potential Stormwater BMP Locations (Figures 1 & 2)

ATTACHMENT A

LAKE CITY – HIGHWAY 61 POTENTIAL STORMWATER BMP LOCATIONS



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Project: LAKEC 133069
Print Date: 9/8/2015

Map by: Patrick Sejkora, PE
Projection: NAD 1983 UTM Zone 15N
Source: ESRI

POTENTIAL STORMWATER BMP LOCATIONS

HIGHWAY 61 SCOPING STUDY

LAKE CITY, MINNESOTA

Figure 2

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.