

Intersection Concept Study



Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

City of Red Wing
May 2016



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RED WING, MINNESOTA
SAFE ROUTES TO SCHOOL PROJECT

Intersection Concept Study
Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

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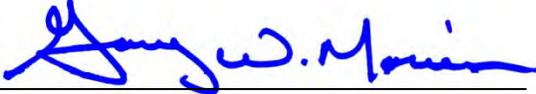
May 3, 2016

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Gary W. Morien, PE

Intersection Concept Study Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

Preface
May 3, 2016

Preface

This study is part of a proposed Safe Routes to School infrastructure project that would reconstruct the intersection of Twin Bluff/Pioneer Roads and make other nearby crossing improvements.

The Intersection Concept Study was performed under the guidance of City Staff, responsible for the review of work products, providing technical direction, participation in workshop meeting, coordination with Goodhue County, and making recommendations to the Red Wing City Council. Support also came from a Stakeholder Group made up of school and agency representatives, and who participated in a workshop meeting on February 23, 2016, representing constituents' perspectives, providing input and recommendations to City Staff.

Project Authorization

Stantec has been retained by the City of Red Wing and authorized by agreement on January 26, 2016 to prepare an Intersection Concept Study, for the intersection near Twin Bluff Middle School, in the City of Red Wing.

Project Team

City Staff: Jay Owens, City Engineer; Ron Rosenthal, Engineering Director

Consultant Team: Dale Grove, Project Principal; Gary Morien, Project Manager; Tyler McLeete, Project Engineer; Tom Fidler, Project Engineer (Roundabout Alternatives)

Stakeholder Group: Kevin Johnson, Red Wing Public Schools; Greg Isakson, Goodhue County; Jess Greenwood, Goodhue County; Dan Munson, City Council; Karsten Anderson, Red Wing Public Schools; Michelle Leise, Live Healthy Red Wing; John Selkirk, First Student; Dean Hove, City of Red Wing; Chris Palmatier, Red Wing Public Schools

Project Purpose

The Intersection Concept Study for Pioneer Road and Twin Bluff Road is a planning level study to develop conceptual designs and identify preferred intersection improvements. Study recommendations will provide guidance for funding, final design and construction.

Recommendations were developed through a collaborative process with City Staff and a Stakeholder Group including Red Wing Public Schools, Goodhue County, and Live Healthy Red Wing. The goal of this study was to develop an intersection alternative that balances traffic and safety; and fosters an active, walkable, mixed use pedestrian environment.

Table of Contents

PREFACE	i
1.0 RECOMMENDATIONS	1.1
1.1 ROUNDABOUT AND SINGLE TEE.....	1.1
1.2 EXPECTED OUTCOMES AND BENEFITS OF RECOMMENDATIONS	1.4
2.0 PROJECT INTRODUCTION	2.5
2.1 PROJECT BACKGROUND & OVERVIEW	2.5
2.2 GOALS AND OBJECTIVES	2.5
3.0 ALTERNATIVES OVERVIEW, EVALUATION, AND SUMMARY	3.1
3.1 INTERSECTION EVALUATION CRITERIA	3.1
3.2 TRAFFIC DATA COLLECTION & SIMULATION	3.1
3.2.1 EXISTING CONDITIONS.....	3.1
3.2.2 FORECASTED CONDITIONS.....	3.1
3.3 ALTERNATIVE LAYOUTS.....	3.2
3.3.1 No Build.....	3.2
3.3.1 Double Tee Intersection.....	3.3
3.3.2 Separated Double Tee Intersection	3.4
3.3.3 Roundabout Single Tee Intersection	3.5
3.3.4 Double Roundabout Intersection	3.7
3.4 TRAFFIC EVALUATION OF ALTERNATIVES.....	3.8
3.5 INTERSECTION ALTERNATIVE EVALUATION SUMMARY.....	3.8
3.6 STAKEHOLDER GROUP FEEDBACK SUMMARY	3.9
3.7 COST ESTIMATES AND COMPARISONS	3.9
3.8 PROJECT SUMMARY	3.10
4.0 REFERENCES	4.11

LIST OF TABLES

Table 1: Summary of Improvements and Impacts	1.2
Table 2: Summary of Benefits	1.4
Table 3: Alternative Intersection Layout Evaluation Summary	3.8
Table 4: Stakeholder Intersection Layout Ranking	3.9
Table 5: Intersection Cost Estimate	3.9

LIST OF FIGURES

Figure 1: Modified Roundabout and Single Tee Intersection	1.2
Figure 2: No Build - Existing Conditions.....	3.2
Figure 3: Double Tee Intersection	3.3
Figure 4: Separated Double Tee Intersection.....	3.4
Figure 5: Roundabout and Single Tee Intersection	3.5

Intersection Concept Study Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

May 3, 2016

Figure 6: Roundabout and Single Tee Intersection (modified)	3.6
Figure 7: Double Roundabout Intersection.....	3.7

LIST OF APPENDICES

APPENDIX A	A.1
INTERSECTION CONCEPT FIGURES.....	A.1
APPENDIX B	B.2
Cost Estimates	B.2
APPENDIX C	C.3
CONCEPT DEVELOPMENT MEETING – COMMENT SHEETS	C.3
APPENDIX D	D.4
Traffic counts	D.4
APPENDIX E	E.5
2014 SRTS INFRASTRUCTURE GRANT APPLICATION	E.5

Intersection Concept Study Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

Recommendations
May 3, 2016

1.0 RECOMMENDATIONS

The following recommendations were developed in coordination with the City of Redwing staff and input from the Stakeholder Team. The following alternatives were considered at a stakeholder workshop:

- No Build
- Roundabout and Single Tee
- Double Roundabout
- Separated Double Tee

Over the course of the workshop, each of the alternatives was presented with VISSIM traffic modeling and the merits of each alternative were discussed. The two layouts that were widely favored were the originally proposed double tee intersection layout from the Safe Routes to School (SRTS) infrastructure grant, and the roundabout/single tee intersection. The roundabout/single tee intersection was further refined following the workshop; reducing private property impacts and changes to improve school bus passage.

Based on traffic modeling and responses by workshop participants, the single roundabout with a single tee intersection from the south is the recommended layout that would provide the greatest safety improvements for pedestrians (FHWA 2011). However, it was determined that the double tee intersection would adequately handle the daily traffic demands and should be considered as a viable alternative. The double tee intersection alternative would still experience delays during the peak student drop off and pick up periods. Additionally, the single roundabout layout allows for reconfiguration of bus traffic through the drop off lot which allows busses to depart the parking lot to yielding traffic within the roundabout, and entering the lot off of Pioneer Road west of the tennis courts.

1.1 ROUNDABOUT AND SINGLE TEE

This intersection layout simultaneously reduces traffic queuing while providing safer pedestrian crossings. Following the workshop some modifications were requested to further improve the traffic flow. The changes include avoiding any ROW impacts on the private property to the north east of the intersection and reconfiguring the direction of bus flow through the school parking lot and drop off area. The intersection layout is shown with the possibility of allowing the buses to exit the roundabout per existing conditions.

Intersection Concept Study Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

Recommendations
May 3, 2016

Figure 1: Modified Roundabout and Single Tee Intersection

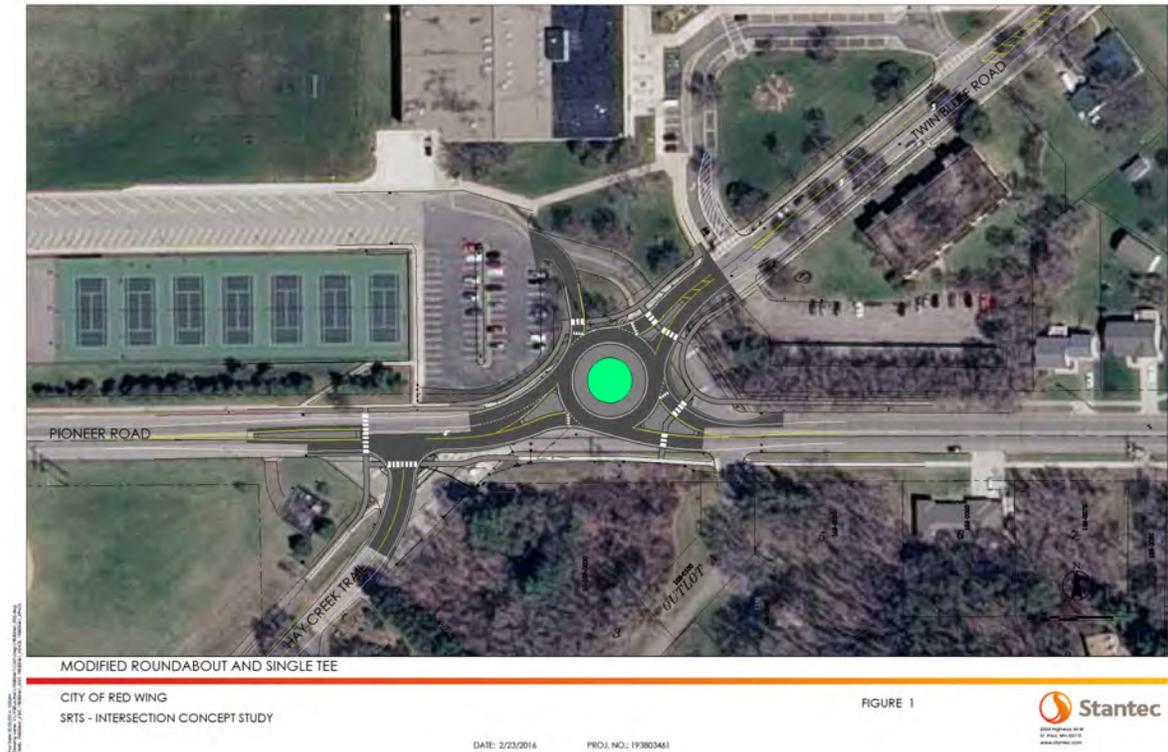


Table 1: Summary of Improvements and Impacts

Single North Roundabout and South Tee Intersection	
Pedestrian Improvements	<ul style="list-style-type: none"> • Roundabout design provides raised medians for pedestrian refuge and crossing distance is decreased as only one direction of traffic is crossed at a time. • A rapid rectangular flashing beacon (RRFB) will be installed at the western tee intersection for crossing Pioneer to provide a direct route to the school for pedestrians traveling to and from the south west. A raised median will further improve the pedestrian crossing at this location by providing refuge at the middle of the crossing.
Vehicular Traffic	<ul style="list-style-type: none"> • Construct 120' diameter single-lane modern roundabout for the intersection of Pioneer Road, the NE leg of Twin Bluff Road, and bus traffic exiting the school lot. • All traffic approaching the roundabout will yield to pedestrians and to

Intersection Concept Study Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

Recommendations
May 3, 2016

	<p>traffic already within the roundabout.</p> <ul style="list-style-type: none"> • Bus travel will be reconfigured to exit the school lot into the roundabout which eliminates the existing difficult turn out into Pioneer Road west of the tennis courts. • Vehicles exiting the north school drop off lot intending to travel northeast may be required to turn right and utilize the roundabout during periods of high traffic. • Parking restrictions/removal should be considered along Twin Bluff Road adjacent to the school which would benefit pedestrian safety. • The intersection of Pioneer Rd and the SW leg of Twin Bluffs Road will be a side-road stop for Twin Bluffs Road. The configuration includes a left turn lane for traffic turning south onto Twin Bluff Road. • Northbound vehicles intending to travel west may be required to turn right and utilize the roundabout during periods of high traffic.
<p>Right of Way Impacts</p>	<ul style="list-style-type: none"> • No permanent right of way impacts to private residential properties are anticipated. • This alternative will have minimum right of way impact to the school property minimizing potential loss of parking stalls within the staff lot.
<p>Estimated Cost</p>	<ul style="list-style-type: none"> • Probable Construction Cost: \$600k • Engineering, Administration Cost: \$150k • Project Cost: \$750k

Intersection Concept Study Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

Recommendations
May 3, 2016

1.2 EXPECTED OUTCOMES AND BENEFITS OF RECOMMENDATIONS

A summary of the benefits of the recommended layout (Modified Roundabout and Single Tee Intersection) are provided below in Table 2.

Table 2: Summary of Benefits

User/Attribute	Benefit
Roundabout	<ul style="list-style-type: none">• Provides improved safety performance compared to traffic signal control, especially for the most severe types of crashes (MnDOT 2013).• Short pedestrian crossing lengths and raised pedestrian islands reduce delays caused by vehicles waiting for pedestrians to cross the road.• Limits speed of traffic traveling through the intersection.• U-turn opportunities for safety and access management.
Pedestrians	<ul style="list-style-type: none">• Reduced vehicle operating speeds.• Only crossing single direction of traffic at a time.• RRFB for Pioneer Road cross walk at western side of intersection.
Buses	<ul style="list-style-type: none">• Parking lot exit provided into roundabout.• Bus travel reconfiguration eliminates difficult left turn onto Pioneer Road.• Reduced queuing and delay during peak hours.
Vehicles	<ul style="list-style-type: none">• Reduced queuing and delay during peak hours.• Increased capacity for future increase in traffic volumes.• Minimizes opportunity for severe types of crashes.• Reduced fuel consumption by minimizing full stops and starts.



Intersection Concept Study Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

Project Introduction
May 3, 2016

2.0 PROJECT INTRODUCTION

2.1 PROJECT BACKGROUND & OVERVIEW

The City of Red Wing applied for and received Safe Routes to School (SRTS) infrastructure funding for 2015 construction with total project costs estimated at \$528,575. The project is located in two different areas, one near Twin Bluff Middle School and the other near Sunnyside Elementary School. The project was delayed due to potentially unfavorable impacts to local traffic that might have resulted from concurrent construction projects in the area. This project is now programmed for 2017 construction.

SITE 1 (Near Twin Bluff Middle School) – Project will reconstruct the intersection of Pioneer Road/Twin Bluff Road. An intersection concept was proposed in the SRTS Grant Application. The grant award was based on a plan to replace the single intersection with two T-intersections. The reconstruction of Pioneer Road includes a designated turn lane, removing some on-street parking to allow for future bike lanes, and installing sections of raised concrete median to create a traffic calming effect through the corridor. Pedestrian crossing improvements are also proposed for this area.

To help determine a preferred alternative the city commissioned this Intersection Concept Study to develop other alternatives, generate traffic modeling and solicit input from a stakeholder group. Alternatives considered for the report include the original double T-intersection concept, roundabouts and combinations.

SITE 2 (Near Sunnyside Elementary School) – Project will eliminate the existing crosswalk at West Avenue and Wilkie Street and relocate it further north on West Avenue. This will align the crosswalk directly with the east/west sidewalk that provides direct access to Sunnyside Elementary School. The new crosswalk will be striped and signed as a midblock school crosswalk and will include the pedestrian-activated RRFB. The new location will eliminate sightline issues that occur at the existing crossing, and will also act as a traffic calming improvement.

Project development plans for SITE 2 will basically follow the concept generated through the SRTS grant process.

2.2 GOALS AND OBJECTIVES

The Intersection Concept Study at Pioneer Road and Twin Bluff Road is a planning level study to develop conceptual designs and identify preferred intersection improvements. Recommendations will be developed through a collaborative process with City staff and a stakeholder group including Red Wing Public Schools, Goodhue County, and Live Healthy Red Wing. The goal of this study is to develop an intersection that balances traffic and safety; and fosters an active, walkable, mixed use pedestrian environment.



3.0 ALTERNATIVES OVERVIEW, EVALUATION, AND SUMMARY

3.1 INTERSECTION EVALUATION CRITERIA

The intersection evaluation criteria were developed by the project stakeholders and with consideration to the SRTS Infrastructure Grant. Primary focus was to provide a safe intersection for pedestrians while improving traffic flow. The following criteria were utilized:

- Traffic Operations
- Pedestrian Travel and Safety
- Bus Travel and Safety
- Vehicular Travel and Safety
- Right of Way Impacts
- Cost

3.2 TRAFFIC DATA COLLECTION & SIMULATION

Traffic counts were taken by the City of Red Wing on February 5 & 10, 2016. A detailed queuing summary was also created on February 11, 2015 by the City of Red Wing. Simulation was performed using the software Synchro/SimTraffic and VISSIM. Detailed traffic count information can be found in Appendix D.

3.2.1 EXISTING CONDITIONS

Long queues were observed at the intersection in both the eastbound and westbound direction. On the day queue lengths were measured by the City, a 960' queue was observed in the eastbound leg of the intersection. The queues inhibit vehicles in the separated turn lanes at the adjacent intersection from completing their movements by blocking the intersection. With the queues blocking vehicles from making left turns in the separated lanes, some drivers were observed making prohibited left-turns at the main intersection. The large queues are likely a result of growing traffic volumes in the region and driver confusion at the intersection. The skewed shape of the intersection may be causing drivers to hesitate for longer than would be expected at a standard 4-leg intersection.

3.2.2 FORECASTED CONDITIONS

MnDOT currently forecasts that Goodhue County will see a 20% increase in traffic over the next 20 years. This increase in traffic volume is expected to result in an unacceptable Level of Service (LOS) of F at this intersection compared to C LOS found today. This is equivalent to increasing the intersection delay by three times. Improvements at the intersection are recommended to maintain an acceptable LOS.

Intersection Concept Study Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

May 3, 2016

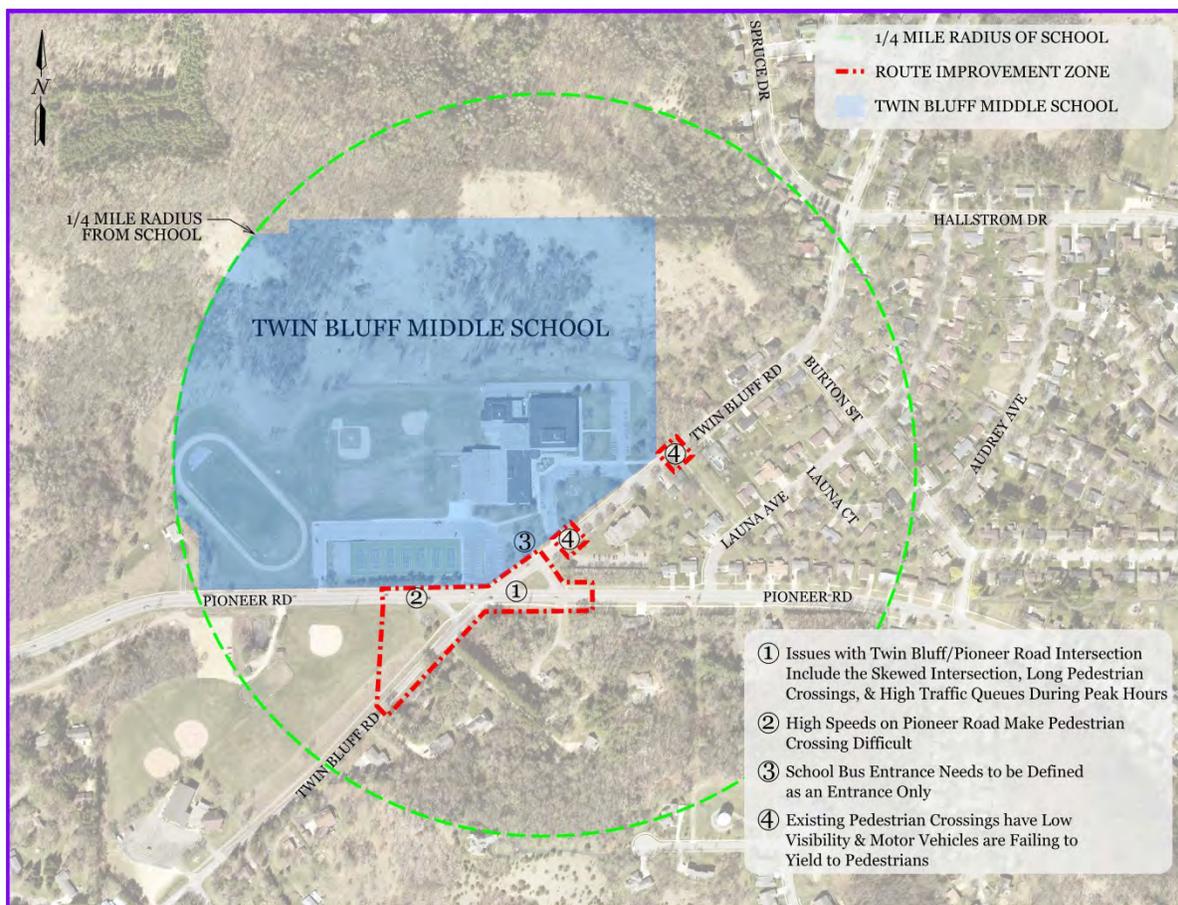
3.3 ALTERNATIVE LAYOUTS

The following figures show the layouts presented during the stakeholder workshop. The Roundabout Single Tee layout was modified following workshop comments.

3.3.1 No Build

Figure 2 is from the SRTS Infrastructure Grant and shows the existing conditions of the intersection. The No Build option provides no pedestrian or vehicular traffic improvements.

Figure 2: No Build - Existing Conditions



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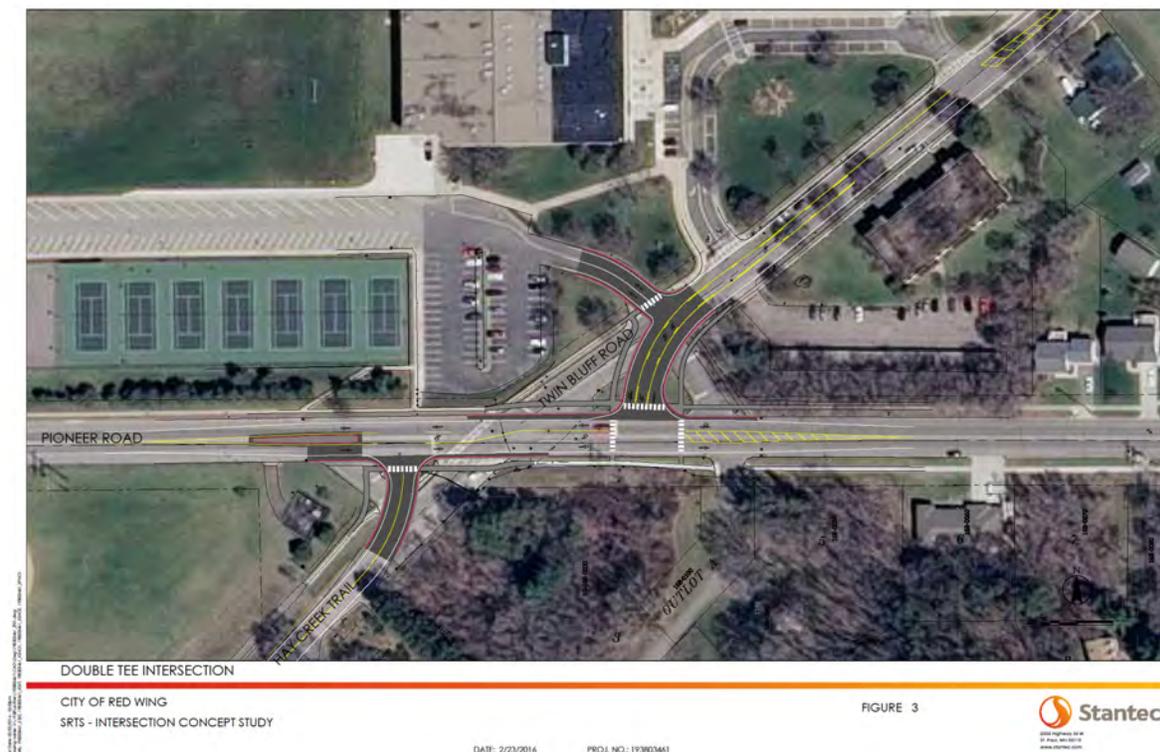
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3.3.1 Double Tee Intersection

Figure 3 shows a slightly modified intersection layout from the existing SRTS Infrastructure Grant. This layout removes the skewed shape of the intersection to help eliminate driver confusion. The pedestrian crossings are shifted to the location of the eastern tee intersection where there is a 3-way stop condition. The western tee intersection has no stop condition for Pioneer Road. At peak traffic volumes, northbound traffic on Hay Creek Trail may experience delays turning onto Pioneer Road.

This intersection was found to adequately handle the forecasted peak hourly traffic volume. It is common practice to evaluate an intersection based on these peak hourly volumes. The duration of the school peak traffic times will be much less than an hour, but of higher traffic rates. This intersection was found to not provide sufficient capacity during forecasted peak traffic during school drop-off and pick-up times. During student drop off and pick up times, significant queuing is expected to remain. This layout does not impact any areas outside of existing right of way, and is the most economical of all the alternative intersection layouts.

Figure 3: Double Tee Intersection



Intersection Concept Study Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

May 3, 2016

3.3.2 Separated Double Tee Intersection

Figure 4 shows a configuration similar to the double tee intersection, only it provides a greater separation between the two intersections. This layout has a significant impact to the property belonging to Red Wing Public Schools to the west of the city pump station facility located at the south west corner. This intersection provides slightly improved traffic flow over the double tee intersection layout but as the double tee intersection was found to adequately handle the projected hourly traffic flow, further investigation into the separated double tee intersection was not pursued. At peak traffic volumes, northbound traffic on Hay Creek Trail may experience delays turning onto Pioneer Road.

Figure 4: Separated Double Tee Intersection



SEPARATED DOUBLE TEE INTERSECTION

CITY OF RED WING
SRTS - INTERSECTION CONCEPT STUDY

FIGURE 4



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DATE: 2/23/2016

PROJ. NO.: 193003461

2012 Engineering Office
100 Park, 4th Floor
www.stantec.com

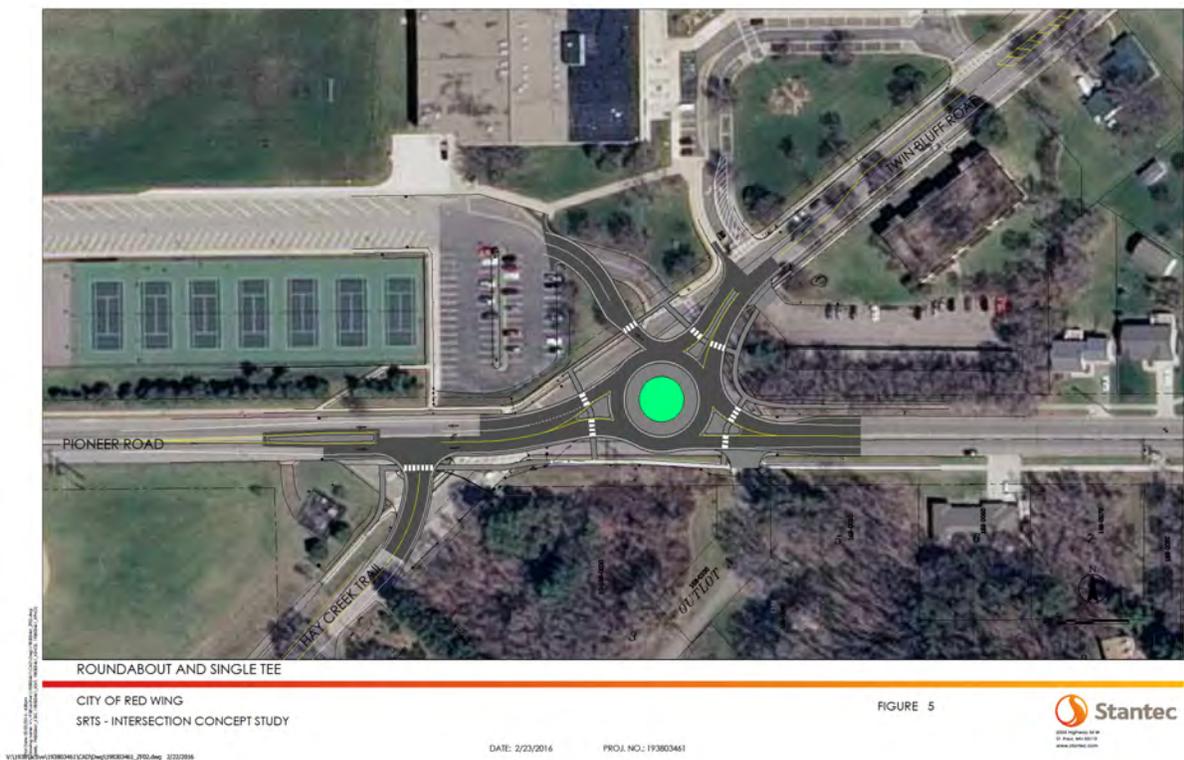
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May 3, 2016

3.3.3 Roundabout Single Tee Intersection

The Roundabout single tee intersection was found to provide sufficient capacity for projected traffic volumes as well as provide shorter pedestrian crossing distances due to the refuge islands between opposite directions of traffic. Additionally, this alternative was found to provide sufficient capacity for the expected peak traffic for school drop-off and pick-up times. As shown in Figure 5, the layout impacts the private property located to the north east of the intersection. This layout was modified slightly following workshop comments. The roundabout single tee intersection layout allows for the removal of any stop condition on Pioneer Road. There is an increased cost to construct this intersection over the alternative double tee layout. The only remaining stop condition is located on northbound Hay Creek Trail. A potentially difficult northbound left turn can be prevented by turning right and utilizing the roundabout to travel westbound during periods of high traffic.

Figure 5: Roundabout and Single Tee Intersection

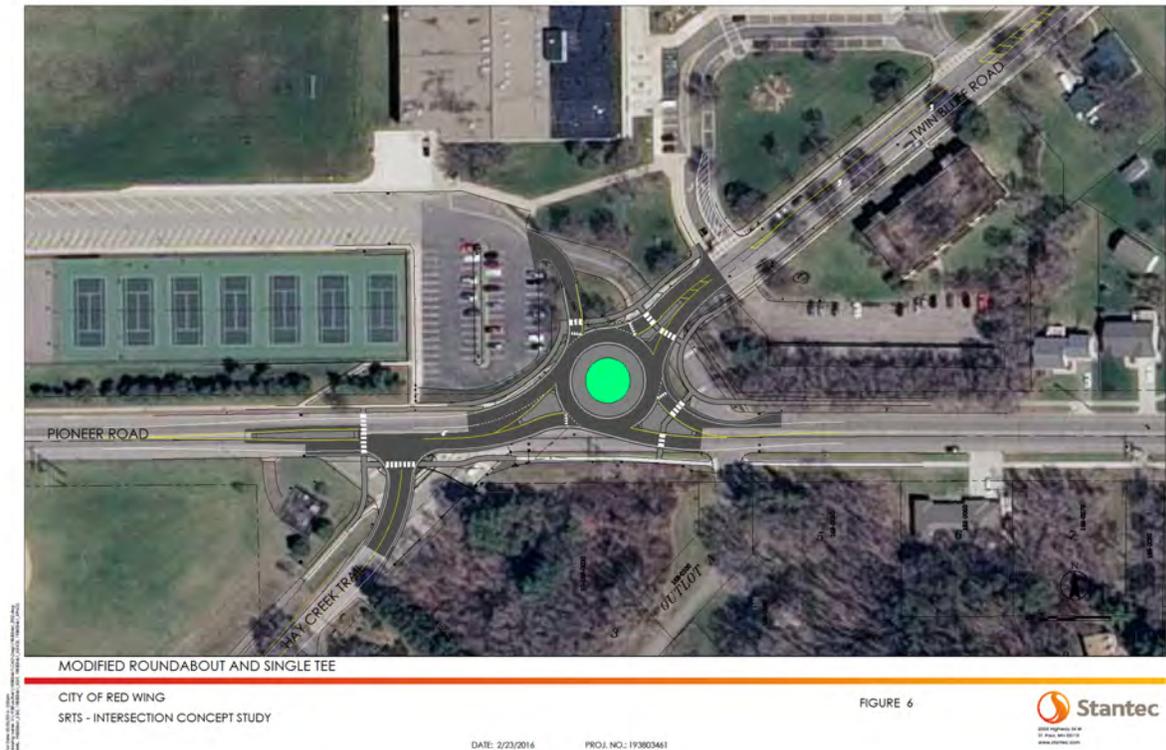


Intersection Concept Study Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

May 3, 2016

Figure 6 shows the roundabout and single tee intersection, including modifications as discussed at the stakeholder workshop meeting. Modifications from the Figure 5 configuration include 1) Alignment shifts to eliminate right-of-way impacts to private residential properties, 2) Bus travel reconfigured to exit the school pickup/drop lot into the roundabout, eliminating the difficult exit into Pioneer Road.

Figure 6: Roundabout and Single Tee Intersection (modified)



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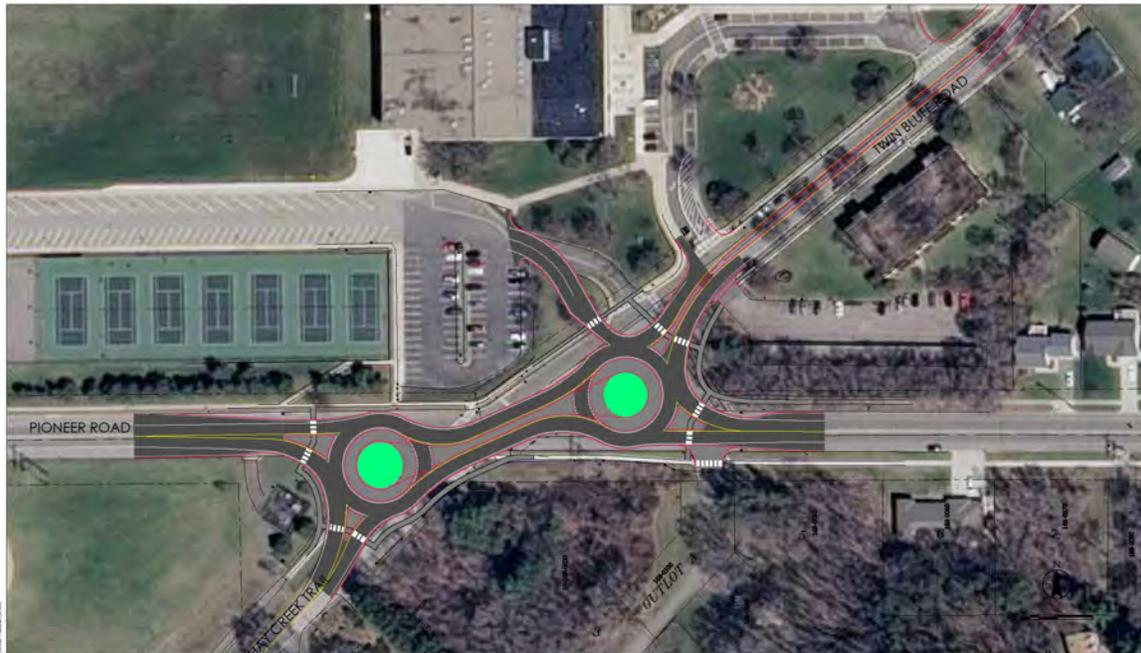
May 3, 2016

3.3.4 Double Roundabout Intersection

The Double Roundabout intersection has the highest cost as well as greatest capacity for future traffic. The western roundabout could be built onto the modified single tee layout at a future date if traffic volumes drive the need.

This layout eliminates all stop conditions within the intersection. The double roundabout design brings added benefits to the south leg, the least utilized leg of the four legs. This layout can be designed in such a way that each roundabout can operate independently, or the inside leg of each roundabout can be closed and the intersection will function as a larger "peanut" style roundabout.

Figure 7: Double Roundabout Intersection



ROUNDABOUT / DOUBLE ROUNDABOUT

CITY OF RED WING
SRTS - INTERSECTION CONCEPT STUDY

FIGURE 7



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DATE: 2/23/2016

PROJ. NO: 153803461

May 3, 2016

3.4 TRAFFIC EVALUATION OF ALTERNATIVES

Simulation results for all alternatives showed an acceptable LOS of A or B with the forecasted growth included. It is expected that alternatives utilizing at least one roundabout will have reduced overall delay experienced by drivers, compared to the stop controlled Double T alternative.

Roundabouts are a form of access management. Access management can improve safety, reduce delays, and decrease environmental impacts by reducing fuel consumption and emissions. The single roundabout design brings these benefits to three of the four legs of the intersection. The double roundabout design brings added benefits to the south leg, the least utilized leg of the four legs. Furthermore, roundabouts increase the capacity of the intersection. Should any significant development occur nearby, beyond what is expected, the roundabout designs will be better equipped to accommodate the resulting increase in traffic than the Double T.

3.5 INTERSECTION ALTERNATIVE EVALUATION SUMMARY

Table 3 shows a summary of criteria and performance for each intersection layout.

Table 3: Alternative Intersection Layout Evaluation Summary

Criteria	No Build	Double Tee	Separated Double Tee	* Roundabout Single Tee	Double Roundabout
Traffic Operations	Poor	Fair	Fair	Good	Good
Pedestrian Travel	Poor	Fair	Fair	Good	Good
Bus Travel	Poor	Fair	Fair	Good	Good
Vehicular Travel	Poor	Fair	Fair	Good	Good
Right of Way impacts	Good	Good	Poor	Fair	Fair
Cost	Good	Good	Fair	Fair	Poor

* Highest ranking alternative – modified single roundabout single tee intersection

Intersection Concept Study Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

May 3, 2016

3.6 STAKEHOLDER GROUP FEEDBACK SUMMARY

Based on the workshop comment sheets, the intersection alternative layouts were evaluated based on their ranking. A summary of the rankings is found in Table 4 below.

Table 4: Stakeholder Intersection Layout Ranking

Intersection Layout	Ranking				Weighted Average Rank
	#1	#2	#3	#4	
Double Tee		2		2	3
Separated Double Tee			1	1	4
Roundabout Single Tee	5	1			1
Double Roundabout	1	2	1		2

3.7 COST ESTIMATES AND COMPARISONS

Cost estimate was updated for the double tee intersection based on anticipated costs for 2017. A cost estimate was also performed for the preferred single roundabout single tee intersection. The following table shows a cost comparison of the two layouts. Detailed Cost Summary can be found in Appendix B.

Table 5: Intersection Cost Estimate

Intersection Layout	Construction Cost	Soft Costs	Project Cost
Double Tee	\$388,000	\$97,000	\$485,000
Roundabout Single Tee	\$523,000	\$150,000	\$753,000
		Cost difference	\$268,000 or 64%

May 3, 2016

3.8 PROJECT SUMMARY

The Intersection Concept Study of Pioneer Road and Twin Bluff Road has identified the Roundabout Single Tee intersection to be the preferred layout of this intersection. The Double Tee layout has also been identified as a viable alternative.

Traffic simulation results for both the roundabout single tee layout and the double tee layout show an acceptable level of service of A or B with the forecasted growth included. It is expected that the roundabout single tee intersection layout will have reduced overall delay experienced by drivers, compared to the stop controlled Double T alternative – particularly during peak school drop off traffic. Additionally, the roundabout single tee roundabout could be expanded in the future to the double roundabout layout if traffic volumes drive the need for even greater capacity.

Based on comments from the workshop meeting, minor revisions to the layout were made to the roundabout single tee layout and are reflected in the design of the Preferred Alternate. Private property right of way impacts were eliminated from the north east side of the intersection, a RRFB pedestrian crossing signal is provided on Pioneer Road, and bus traffic into the school parking lot has been reversed. Reversing the traffic direction within the school parking lot and bus drop off area has the additional benefit of eliminating the difficult turn out of the parking lot onto Pioneer Road from west of the tennis courts. Parking restrictions/removal should be considered along Twin Bluff Road adjacent to the school which would benefit pedestrian safety.

Roundabouts are a form of access management. Access management can improve pedestrian and traffic safety (FHWA 2011), reduce delays, and decrease environmental impacts by a reduction in fuel consumption and emissions. The single roundabout design brings these benefits to three of the four legs of the intersection. Additionally, during peak traffic volumes, traffic from the tee intersection may utilize a right turn maneuver to travel west by utilizing the roundabout. Furthermore, roundabouts increase the capacity of the intersection. Should any significant development occur nearby, beyond what is expected, the roundabout design will be better equipped to accommodate the resulting increase in traffic than the Double Tee.

Intersection Concept Study Intersection Reconstruction at Twin Bluff Middle School and Crossing Improvements

May 3, 2016

4.0 REFERENCES

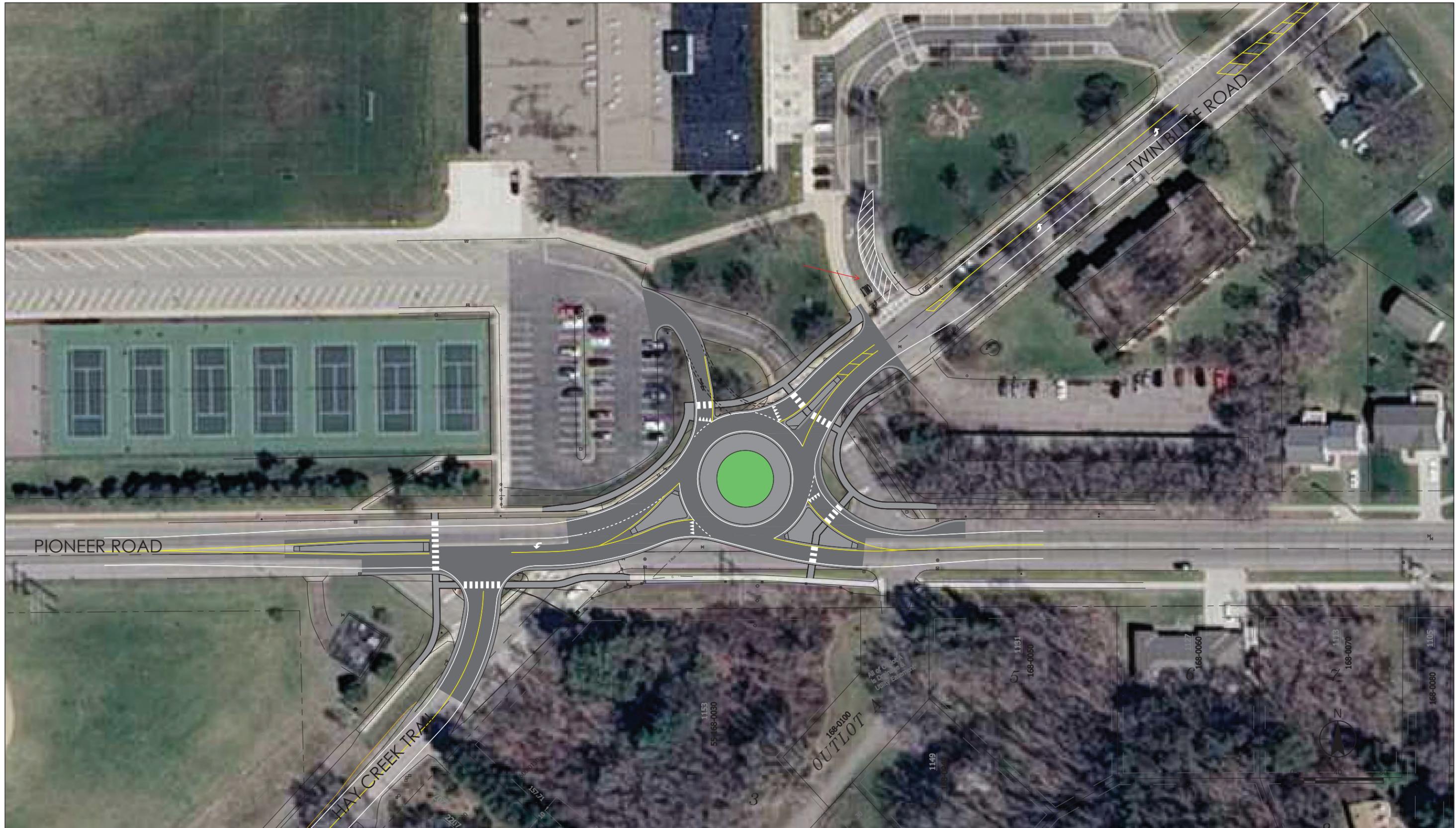
- MnDOT Office of Traffic, Safety and Technology. 2013. Minnesota's Best Practices for Pedestrian/Bicycle Safety. MnDOT Report 2013-22
- U.S. Department of Transportation, Federal Highway Administration. 2011. Wisconsin Roundabouts Calm Traffic, Improve School Zone Safety. FHWA-SA-11-031

**INTERSECTION CONCEPT STUDY INTERSECTION RECONSTRUCTION AT TWIN BLUFF MIDDLE SCHOOL
AND CROSSING IMPROVEMENTS**

Appendix A
May 3, 2016

Appendix A

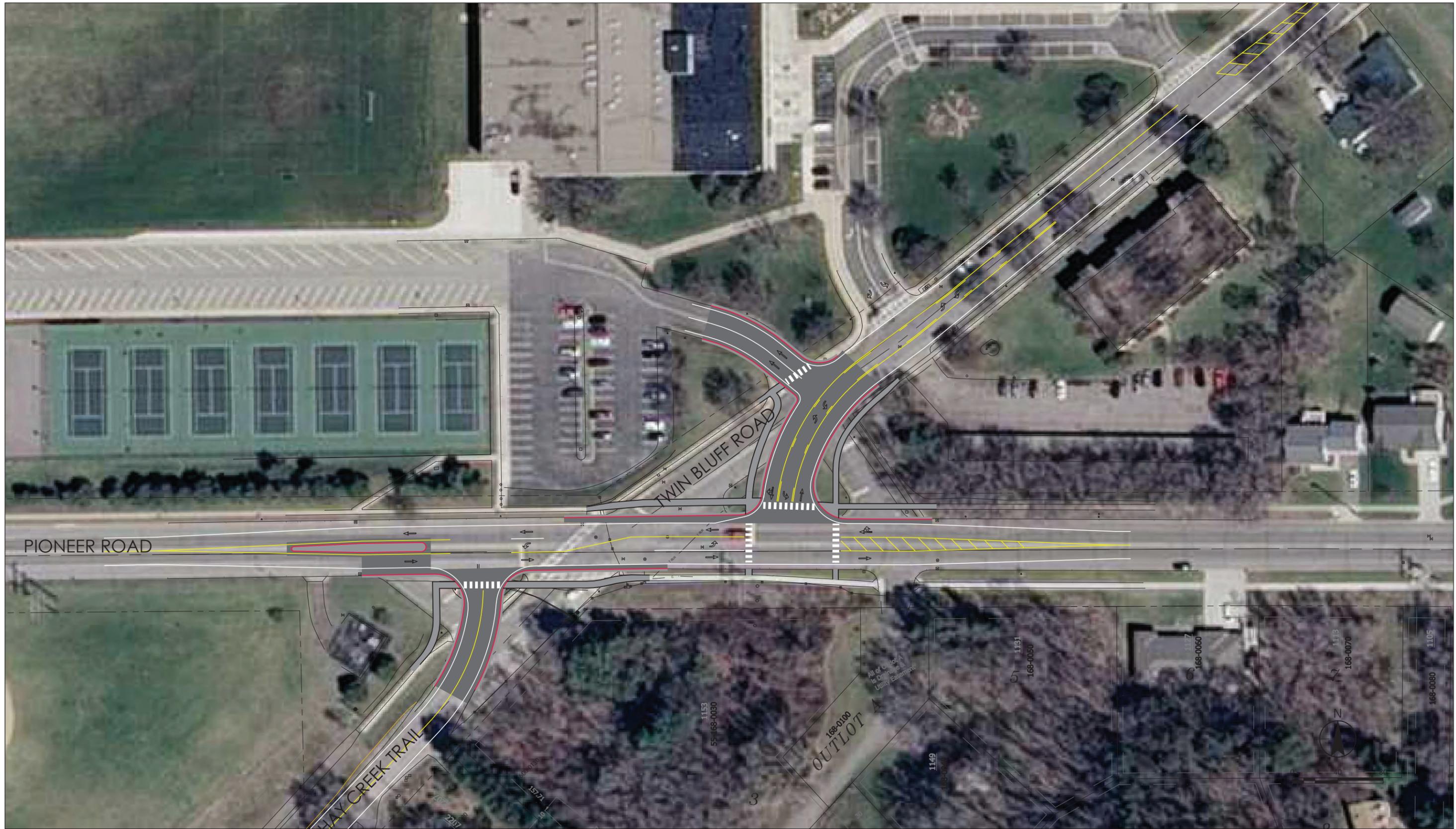
INTERSECTION CONCEPT FIGURES



MODIFIED ROUNDABOUT AND SINGLE TEE

CITY OF RED WING
 SRTS - INTERSECTION CONCEPT STUDY

FIGURE 1



DOUBLE TEE INTERSECTION

CITY OF RED WING
 SRTS - INTERSECTION CONCEPT STUDY

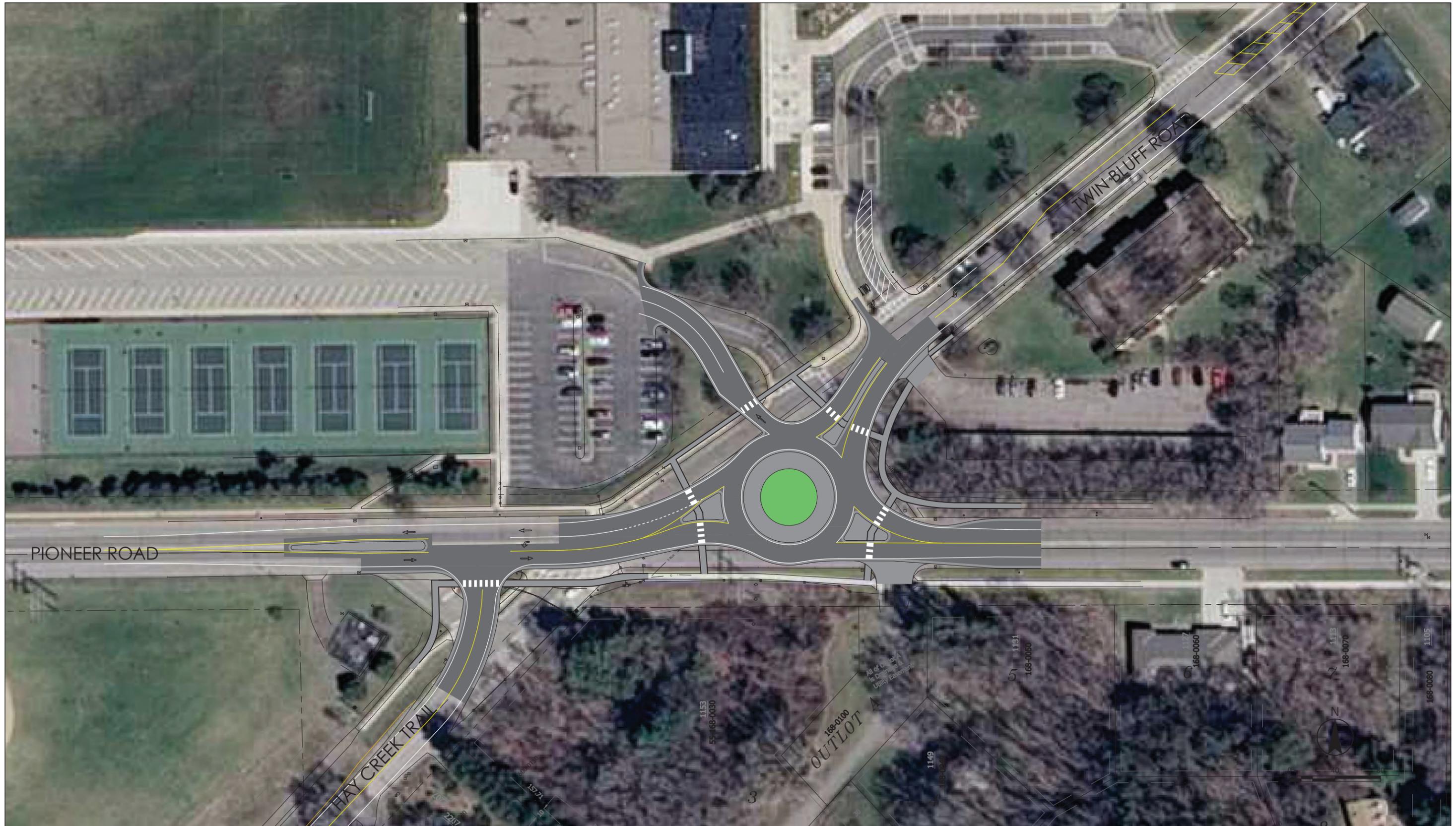
FIGURE 3



SEPARATED DOUBLE TEE INTERSECTION

CITY OF RED WING
 SRTS - INTERSECTION CONCEPT STUDY

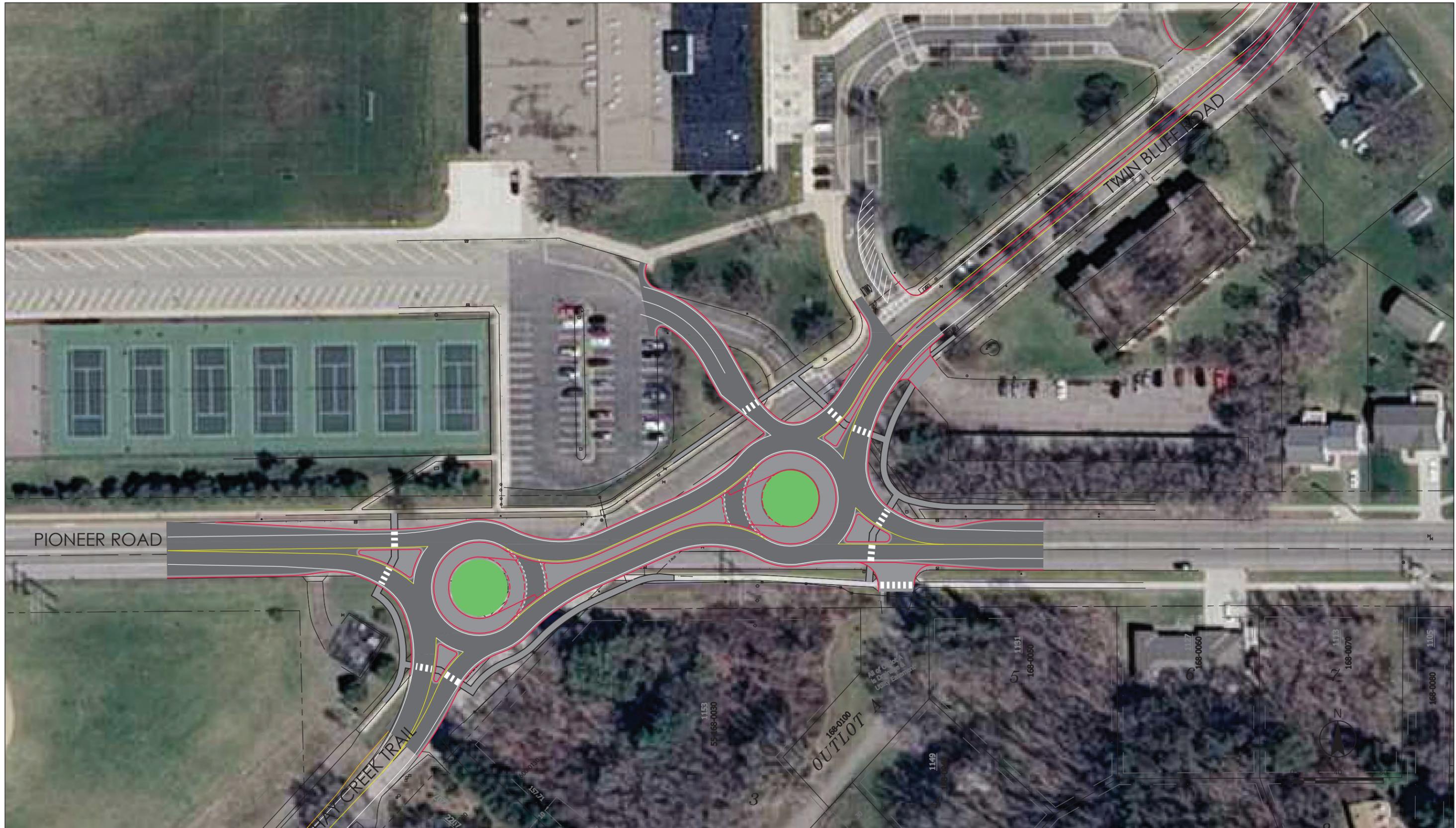
FIGURE 4



ROUNDBOUT AND SINGLE TEE

CITY OF RED WING
 SRTS - INTERSECTION CONCEPT STUDY

FIGURE 5



ROUNDBOUT / DOUBLE ROUNDBOUT

CITY OF RED WING
 SRTS - INTERSECTION CONCEPT STUDY

FIGURE 7

**INTERSECTION CONCEPT STUDY INTERSECTION RECONSTRUCTION AT TWIN BLUFF MIDDLE SCHOOL
AND CROSSING IMPROVEMENTS**

Appendix B
May 3, 2016

Appendix B

COST ESTIMATES



OPINION OF PROBABLE COST

CITY OF RED WING
SRTS - DOUBLE TEE INTERSECTION
STANTEC PROJECT NO. 193803461

DATE: 3/7/2106

NO.	ITEM	UNIT	UNIT PRICE	TOTAL PROJECT	
				QUANTITY	COST
1	MOBILIZATION	LUMP SUM	\$15,000.00	1	\$15,000
2	REMOVE TREE	EACH	\$650.00	0	\$0
3	REMOVE SEWER PIPE (STORM)	LIN FT	\$13.00	150	\$1,950
4	REMOVE CURB AND GUTTER	LIN FT	\$8.00	1600	\$12,800
5	REMOVE CONCRETE WALK	SQ FT	\$1.25	2750	\$3,438
6	REMOVE BITUMINOUS PAVEMENT	SQ YD	\$5.00	3866	\$19,332
7	REMOVE MANHOLE OR CATCH BASIN	EACH	\$500.00	2	\$1,000
8	SALVAGE HYDRANT	EACH	\$1,000.00	0	\$0
9	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	\$3.00	960	\$2,880
10	COMMON EXCAVATION	CU YD	\$20.00	644	\$12,888
11	SUBGRADE EXCAVATION	CU YD	\$20.00	0	\$0
12	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	\$120.00	10	\$1,200
13	WATER	MGAL	\$50.00	20	\$1,000
14	COMMON BORROW (LV)	CU YD	\$18.00	0	\$0
15	AGGREGATE BASE (CV) CLASS 5	CU YD	\$22.00	592	\$13,018
16	3" TYPE SP 12.5 WEARING COURSE MIXTURE	TON	\$81.00	350	\$28,350
17	3" TYPE SP 12.5 NON-WEARING COURSE MIX	TON	\$76.00	350	\$26,600
18	TRUCK APRON 8.0"	SQ YD	\$45.00	0	\$0
19	RAISED CONCRETE MEDIAN	SQ YD	\$65.00	90	\$5,850
20	6" WATERMAIN DIP	LIN FT	\$100.00	0	\$0
21	INSTALL HYDRANT	EACH	\$1,500.00	0	\$0
22	12" PVC PIPE SEWER	LIN FT	\$40.00	50	\$2,000
23	15" PVC PIPE SEWER	LIN FT	\$45.00	100	\$4,500
24	CONSTRUCT BULKHEAD	EACH	\$500.00	2	\$1,000
25	CONNECT TO EXISTING STORM SEWER	EACH	\$1,000.00	2	\$2,000
26	CONNECT TO EXISTING DRAINAGE STRUCTURE	EACH	\$1,800.00	2	\$3,600
27	CONSTRUCT DRAINAGE STRUCTURE	EACH	\$4,000.00	2	\$8,000
28	CASTING ASSEMBLY	EACH	\$600.00	2	\$1,200
29	ADJUST FRAME AND RING CASTING	EACH	\$750.00	7	\$5,250
30	3.5" CONCRETE WALK	SQ FT	\$6.00	3615	\$21,690
31	6" CONCRETE WALK	SQ FT	\$7.50	540	\$4,050
32	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	\$20.00	1811	\$36,220
33	TRUNCATED DOMES	SQ FT	\$50.00	180	\$9,000
34	TRAFFIC CONTROL	LUMP SUM	\$5,000.00	1	\$5,000
35	STORM DRAIN INLET PROTECTION	EACH	\$200.00	7	\$1,400
36	COMMON TOPSOIL BORROW	CU YD	\$20.00	543	\$10,852
37	SODDING TYPE SALT TOLLERANT	SQ YD	\$3.50	3256	\$11,394
38	4" SOLID YELLOW-EPOXY	LIN FT	\$1.00	3200	\$3,200
39	4" SOLID WHITE-EPOXY	LIN FT	\$1.00	4850	\$4,850
40	4" DASHED YELLOW-EPOXY	LIN FT	\$1.00	703	\$703
41	12" CROSSWALK	SQ FT	\$4.00	360	\$1,440
42	24" STOP BAR	LIN FT	\$7.00	80	\$560
43	PERMANENT PAVEMENT MARKINGS	LUMP SUM	\$2,500.00	1	\$2,500
44	SIGNAGE	LUMP SUM	\$2,500.00	1	\$2,500
45	LIGHTING	EACH	\$6,000.00	0	\$0
45	RAPID RECTANGULAR FLASHING BEACON	LUMP SUM	\$15,000.00	2	\$30,000
46	LANDSCAPING	LUMP SUM	\$19,000.00	1	\$19,000
SUBTOTAL					\$337,215
CONTINGENCY (15%)					\$50,582
TOTAL CONSTRUCTION ESTIMATE (PRELIMINARY)					\$387,797
DESIGN AND ENGINEERING (25%)					\$96,949
TOTAL PROJECT COST (PRELIMINARY)					\$484,746

OPINION OF PROBABLE COST



CITY OF RED WING
SRTS - ROUNDABOUT TEE INTERSECTION
STANTEC PROJECT NO. 193803461

DATE: 3/7/2106

NO.	ITEM	UNIT	UNIT PRICE	TOTAL PROJECT	
				QUANTITY	COST
1	MOBILIZATION	LUMP SUM	\$15,000.00	1	\$15,000
2	REMOVE TREE	EACH	\$650.00	3	\$1,950
3	REMOVE SEWER PIPE (STORM)	LIN FT	\$13.00	250	\$3,250
4	REMOVE CURB AND GUTTER	LIN FT	\$8.00	1900	\$15,200
5	REMOVE CONCRETE WALK	SQ FT	\$1.25	3150	\$3,938
6	REMOVE BITUMINOUS PAVEMENT	SQ YD	\$5.00	5453	\$27,264
7	REMOVE MANHOLE OR CATCH BASIN	EACH	\$500.00	5	\$2,500
8	SALVAGE HYDRANT	EACH	\$1,000.00	1	\$1,000
9	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	\$3.00	685	\$2,055
10	COMMON EXCAVATION	CU YD	\$20.00	909	\$18,176
11	SUBGRADE EXCAVATION	CU YD	\$20.00	0	\$0
12	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	\$120.00	10	\$1,200
13	WATER	MGAL	\$50.00	20	\$1,000
14	COMMON BORROW (LV)	CU YD	\$18.00	407	\$7,333
15	AGGREGATE BASE (CV) CLASS 5	CU YD	\$22.00	592	\$13,018
16	3" TYPE SP 12.5 WEARING COURSE MIXTURE	TON	\$81.00	550	\$44,550
17	3" TYPE SP 12.5 NON-WEARING COURSE MIX	TON	\$76.00	550	\$41,800
18	MODULAR BLOCK RETAINING WALL	SQ FT	\$50.00	200	\$10,000
19	TRUCK APRON 8.0"	SQ YD	\$45.00	350	\$15,750
20	RAISED CONCRETE MEDIAN	SQ YD	\$65.00	350	\$22,750
21	6" WATERMAIN DIP	LIN FT	\$100.00	5	\$500
22	INSTALL HYDRANT	EACH	\$1,500.00	1	\$1,500
23	12" PVC PIPE SEWER	LIN FT	\$40.00	50	\$2,000
24	15" PVC PIPE SEWER	LIN FT	\$45.00	250	\$11,250
25	CONSTRUCT BULKHEAD	EACH	\$500.00	6	\$3,000
26	CONNECT TO EXISTING STORM SEWER	EACH	\$1,000.00	3	\$3,000
27	CONNECT TO EXISTING DRAINAGE STRUCTURE	EACH	\$1,800.00	3	\$5,400
28	CONSTRUCT DRAINAGE STRUCTURE	EACH	\$4,000.00	6	\$24,000
29	CASTING ASSEMBLY	EACH	\$600.00	6	\$3,600
30	ADJUST FRAME AND RING CASTING	EACH	\$750.00	10	\$7,500
31	3.5" CONCRETE WALK	SQ FT	\$6.00	3967	\$23,802
32	6" CONCRETE WALK	SQ FT	\$7.50	900	\$6,750
33	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	\$20.00	1510	\$30,200
34	CONCRETE CURB AND GUTTER DESIGN B612	LIN FT	\$20.00	730	\$14,600
35	CONCRETE CURB AND GUTTER DESIGN D418	LIN FT	\$20.00	400	\$8,000
36	TRUNCATED DOMES	SQ FT	\$50.00	180	\$9,000
37	TRAFFIC CONTROL	LUMP SUM	\$5,000.00	1	\$5,000
38	STORM DRAIN INLET PROTECTION	EACH	\$200.00	7	\$1,400
39	COMMON TOPSOIL BORROW	CU YD	\$20.00	559	\$11,183
40	SODDING TYPE SALT TOLLERANT	SQ YD	\$3.50	3355	\$11,742
41	4" SOLID YELLOW-EPOXY	LIN FT	\$1.00	2600	\$2,600
42	4" SOLID WHITE-EPOXY	LIN FT	\$1.00	5000	\$5,000
43	4" DASHED WHITE-EPOXY	LIN FT	\$1.00	200	\$200
44	12" CROSSWALK	SQ FT	\$4.00	300	\$1,200
45	24" STOP BAR	LIN FT	\$7.00	50	\$350
46	PERMANENT PAVEMENT MARKINGS	LUMP SUM	\$2,500.00	1	\$2,500
47	SIGNAGE	LUMP SUM	\$2,500.00	1	\$2,500
48	LIGHTING	EACH	\$6,000.00	7	\$42,000
49	RAPID RECTANGULAR FLASHING BEACON	LUMP SUM	\$15,000.00	1	\$15,000
50	LANDSCAPING	LUMP SUM	\$21,000.00	1	\$21,000
SUBTOTAL					\$523,510
CONTINGENCY (15%)					\$78,526
TOTAL CONSTRUCTION ESTIMATE (PRELIMINARY)					\$602,036
DESIGN AND ENGINEERING (25%)					\$150,509
TOTAL PROJECT COST (PRELIMINARY)					\$752,545

**INTERSECTION CONCEPT STUDY INTERSECTION RECONSTRUCTION AT TWIN BLUFF MIDDLE SCHOOL
AND CROSSING IMPROVEMENTS**

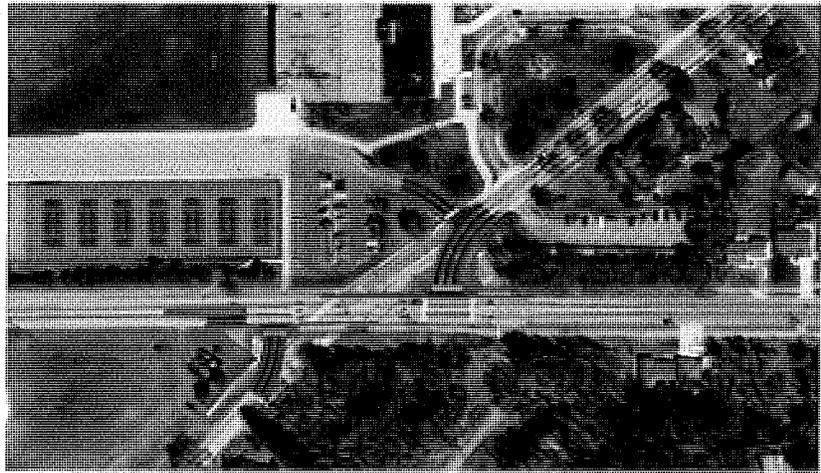
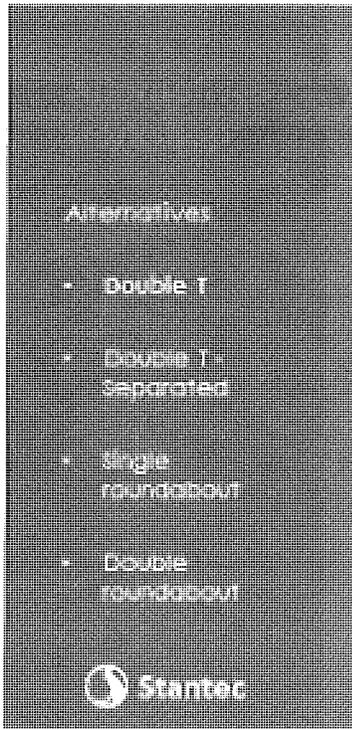
Appendix C
May 3, 2016

Appendix C

CONCEPT DEVELOPMENT MEETING – COMMENT SHEETS

Name Karsten Andersson
(RWPS)

• Double T-Intersection



DOUBLE T-INTERSECTION
STANTEC
1000 UNIVERSITY AVENUE, SUITE 1000, ST. LOUIS, MO 63102
TEL: 314.433.1000 FAX: 314.433.1001
WWW.STANTEC.COM

Benefits

Concerns

Rank (1 to 4)

single roundabout with adjustments	(1)	○
Double roundabout	(2)	
Double-T intersection or alternate	(No) or 3	

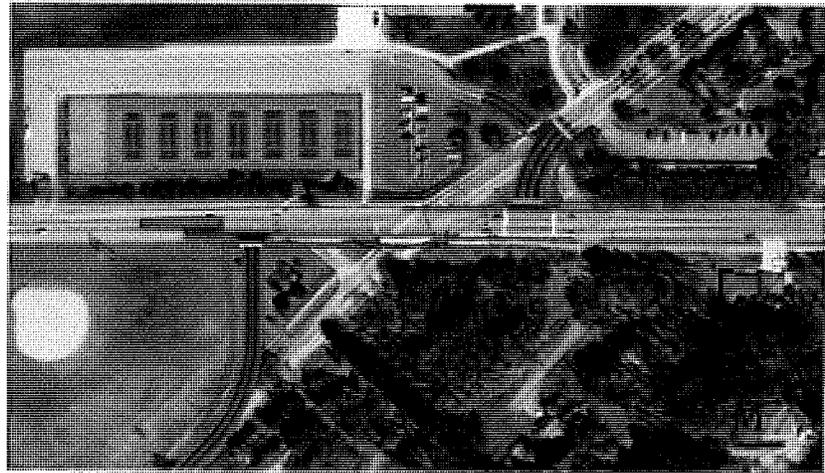
Double T intersection

4
|
| alternate unless move street further to west

• Double T-Intersection - Alternate

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout

STANTEC
 1000 W. WASHINGTON
 SUITE 1000
 ST. LOUIS, MO 63102
 TEL: 314.433.1000
 FAX: 314.433.1001
 WWW.STANTEC.COM

Benefits

Concerns

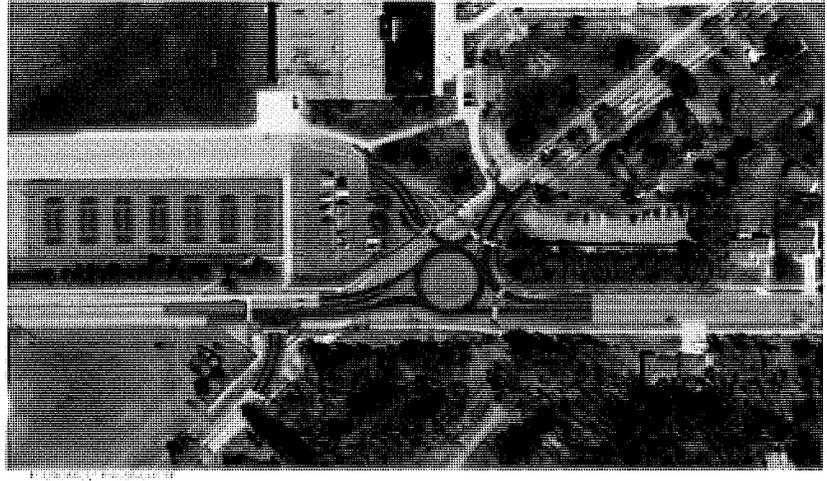
Rank (1 to 4)



• Single Roundabout

Alternatives

- Double T
- Double T Separated
- Single roundabout
- Double roundabout

Startec logo and other small text at the bottom of the image.

Benefits

Concerns

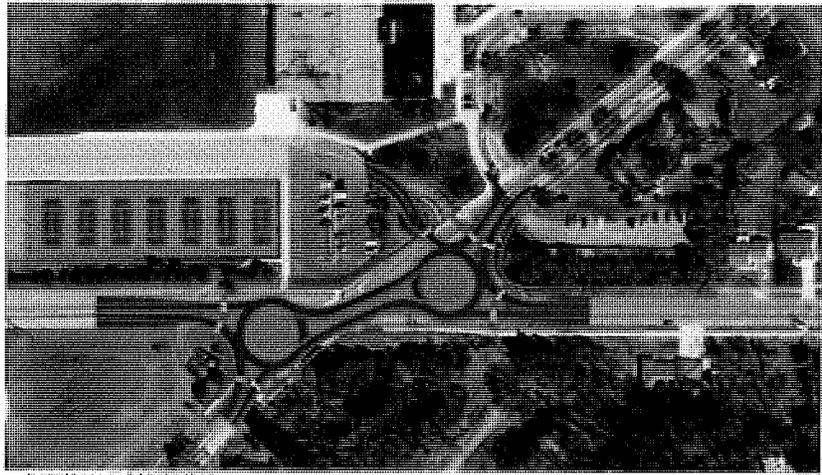
Rank (1 to 4)



• Double Roundabout

Alternatives

- Double T
- Double T - separated
- Single roundabout
- Double roundabout

PROJECT: PIONEER ROAD & TWIN BLUFFS ROAD
 CITY: RED WING, MN
 CLIENT: SRTS
 DATE: 1/2016
 PREPARED BY: STANTEC

Benefits

Concerns

Rank (1 to 4)

Benefits	Concerns	Rank (1 to 4)
		○

Name GREG ISAKSON

Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Double T-Intersection



DOUBLE T-INTERSECTION
11-17-16-1111
1111-1111-1111-1111-1111
1111-1111-1111-1111-1111
Stantec

Benefits

Concerns

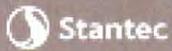
Rank (1 to 4)

Benefits	Concerns	Rank (1 to 4)
	<i>Reds. from South</i>	

Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Double T-Intersection - Alternate



SEPARATED DOUBLE T-INTERSECTION
 100% DESIGN
 100% APPROVED BY LOCAL AGENCIES

10-000-4



Benefits

Concerns

Rank (1 to 4)



Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Single Roundabout



PROJECT NAME: ...
 DATE: ...
 SCALE: ...
 STANTEC

Benefits

Concerns

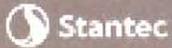
Rank (1 to 4)

Add left turn lane on North bound		○
Add second west bound lane from T		
Have two north bound lanes @ T, one for west + one for east		
Reverse flow for Buses		

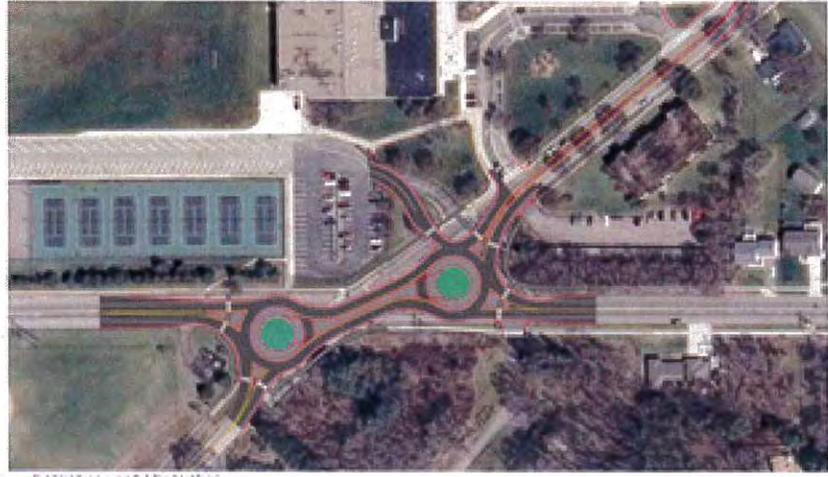
Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Double Roundabout



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Benefits

Concerns

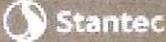
Rank (1 to 4)



Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Double T-Intersection



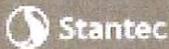
STANTEC
1111 11th Ave SW
11111 11th Ave SW
11111 11th Ave SW
Stantec

Benefits	Concerns	Rank (1 to 4)
Helps Slow down Traffic	<ul style="list-style-type: none"> • Parent picking up + dropping off students backups • Traffic blocks Twin Bluff Rd congestion 	4
	<ul style="list-style-type: none"> • School buses not able to exit west end of school bus Park Lot. • Students cross Twin Bluff Rd between Park Lot in front of Apt. Bldg. to be picked up • Pedestrian cross not convenient for students to cross NO RR signal 	

Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Double T-Intersection - Alternate



Benefits

Concerns

Rank (1 to 4)

Benefits	Concerns	Rank (1 to 4)
	<ul style="list-style-type: none"> • South Rd Hwy Creek Trail Rd hard to make left turn when busy. 	3
	<ul style="list-style-type: none"> • Traffic flow will speed up going west on Pioneer Rd. • Bussel for school buses to Exit on Pioneer Rd. • Hard to get North and South on Twin Bluff Rd with parents loading + unloading students. 	
	<p>Still dangerous students crossing Twin Bluff Rd Between parked cars to get to parent parked by apt. Cross walk to far away from tennis court sidewalk NO RR</p>	

Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Single Roundabout



Benefits

Concerns

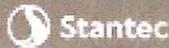
Rank (1 to 4)

<ul style="list-style-type: none"> • If School District Reverses Park for School Buses this will Reduce the problem to Exit Parking with Roundabout 		<div style="border: 2px solid orange; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">2</div>
<ul style="list-style-type: none"> • Roundabout will ease the Traffic flow out of parking + loading from front of school. 	<p>School District needs to work on changing loading & unloading student in front of school</p>	
<ul style="list-style-type: none"> • Also if school bus parking is Reversed this will make Exiting the school by Bus easier 	<ul style="list-style-type: none"> • Traffic coming from South needs A Right turn only. Go through Roundabout to make A left. to go west. 	
<ul style="list-style-type: none"> • If School: 	<ul style="list-style-type: none"> • Parking on Twin Bluffs Rd is Removed on school side to reduced safety issues 	
	<p>make the pedestrians crossing closer to Roundabout with RR lighting.</p>	
	<ul style="list-style-type: none"> • Need A Left Turn Lane for New Entrance for Buses into parking lot. This is if School District Reverses parking where buses park now. 	

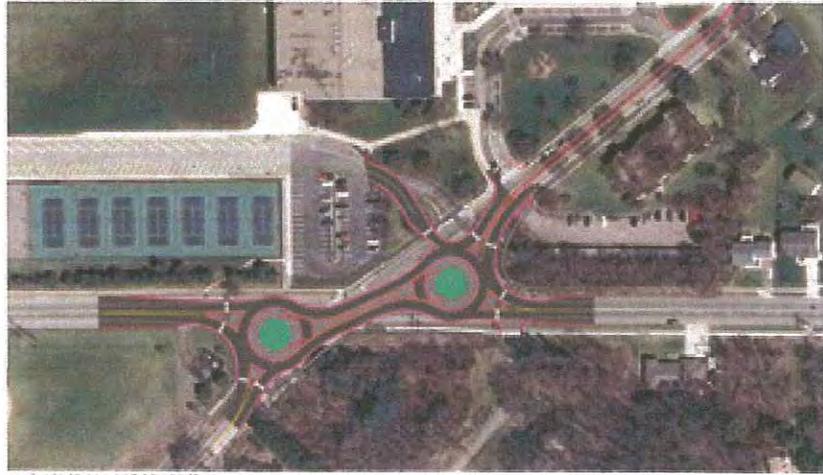
Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Double Roundabout



Benefits

Concerns

Rank (1 to 4)

• This might be a better

fix. It would meet

ALL the issues with

Twin Bluff Rd

Pioneer R + Dry Creek

Trail south.

• I would like

This one over single

Roundabout would be a
Better fix

Parking on Both Sides

of Twin Bluff Rd by

Apt.

TBMS Drop off & pick up

of students



Name Kevin Johnson
Red Wing Public Schools

Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Double T-Intersection

#2



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350,000

Benefits

Concerns

Rank (1 to 4)

Benefits	Concerns	Rank (1 to 4)



*Kevin Johnson
Red Wing Public Schools*



Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout

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• Single Roundabout



Chassiswalk

880,000

Benefits

Concerns

Rank (1 to 4)

<i>Traffic Flow</i>	<i>Cost</i>	
<i>Safety</i>		

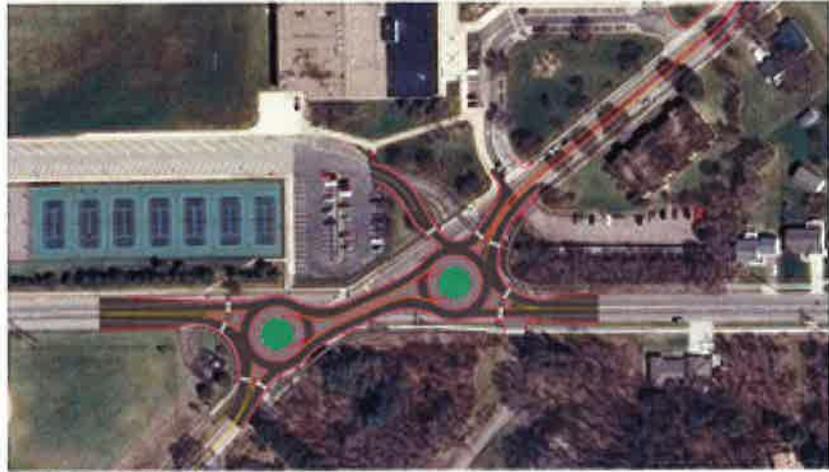
Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Double Roundabout



ROUNDABOUT - DOUBLE ROUNDABOUT

City of Red Wing
April 2015 - Final Plan - 10/20/15

Page 11



1,000,000

Benefits

Concerns

Rank (1 to 4)

Benefits	Concerns	Rank (1 to 4)



Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Double T-Intersection



DOUBLE T-INTERSECTION

CITY OF RED WING
SRTS - INTERSECTION STUDY REPORT

SCALE



Benefits

Concerns

Rank (1 to 4)



Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Double T-Intersection - Alternate



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11-11-16



Benefits

Concerns

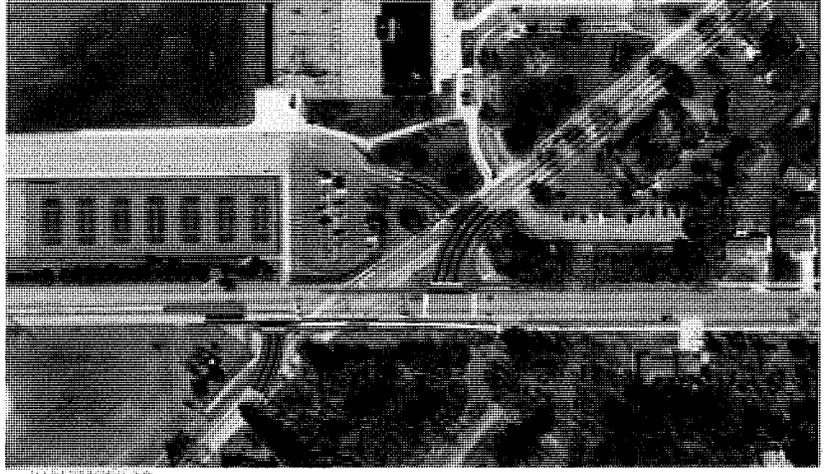
Rank (1 to 4)



• Double T-Intersection

Alternatives

- Double T
- Double T - separated
- Single roundabout
- Double roundabout

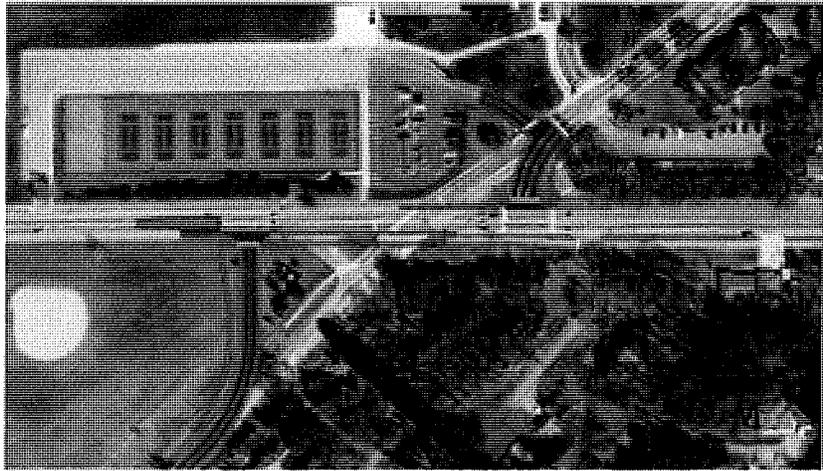
Startec logo and other small text at the bottom of the image.

Benefits	Concerns	Rank (1 to 4)
	Appears to slide traffic problems	○

• Double T-Intersection - Alternate

Alternatives

- Double T
- Double T Separated
- Single roundabout
- Double roundabout

STANTEC CONSULTING GROUP, INC.
 1100 EAST WISCONSIN
 NEW MILWAUKEE, WISCONSIN 53146
 TEL: 414.764.8000 FAX: 414.764.8001
 www.stantec.com



Benefits

Concerns

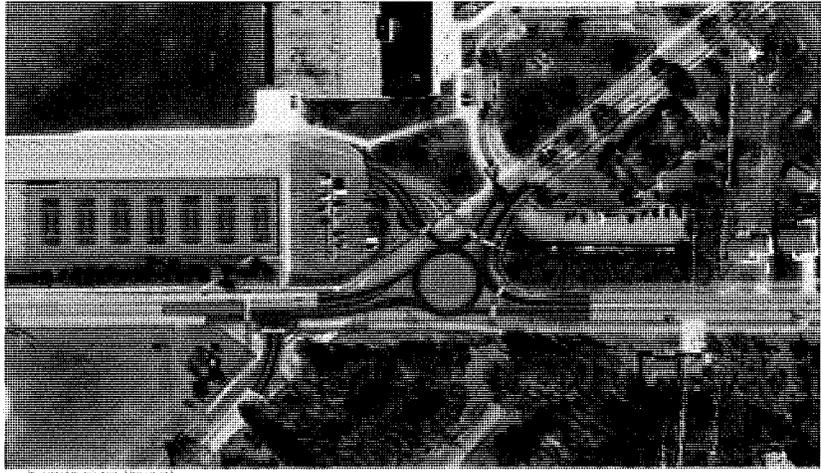
Rank (1 to 4)

Benefits	Concerns	Rank (1 to 4)
		○

• Single Roundabout

Alternatives

- Double T
- Double T Separated
- Single roundabout
- Double roundabout

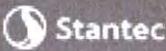
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Benefits	Concerns	Rank (1 to 4)
Keeps traffic moving	Will students (age 10-13) understand crosswalks	1
Allows improvement in routing traffic		

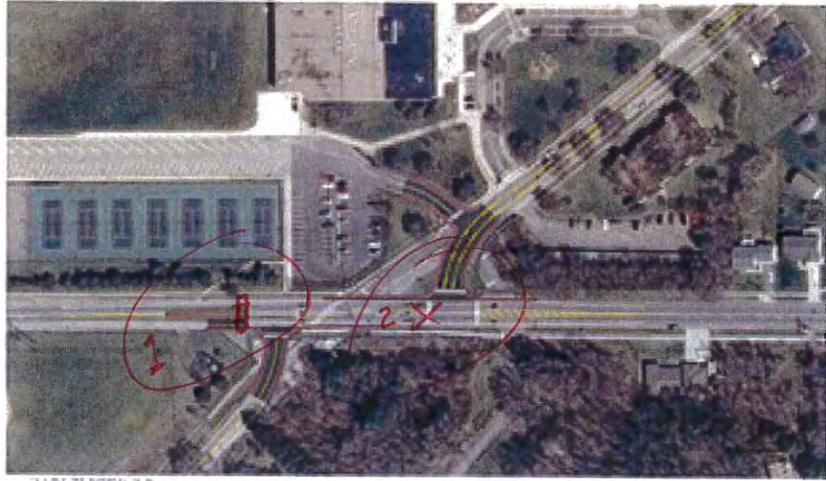
Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Double T-Intersection



Benefits **Concerns** **Rank (1 to 4)**

<p><i>Lowest cost</i></p>	<p><i>Traffic congestion may be reduced</i></p>	<p><i>2 of 4</i></p>
<p><i>No ROW impacts</i></p>		
<p><i>common traffic movements that are familiar to everyone</i></p>		
<p><u>change:</u></p> <p>① Add REB's walk and stop sign + crosswalk</p> <p>② Remove stop sign + cross walk</p>		

2 of 4
but not eliminated.

Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Double T-Intersection - Alternate



Benefits

Concerns

Rank (1 to 4)

<p>separates intersections</p>	<p>Peds will want to cross at wly intersection</p>	<p>4 of 4</p>
<p>ROW costs / cost construction costs</p>	<p>increase w/o improving congestion.</p>	

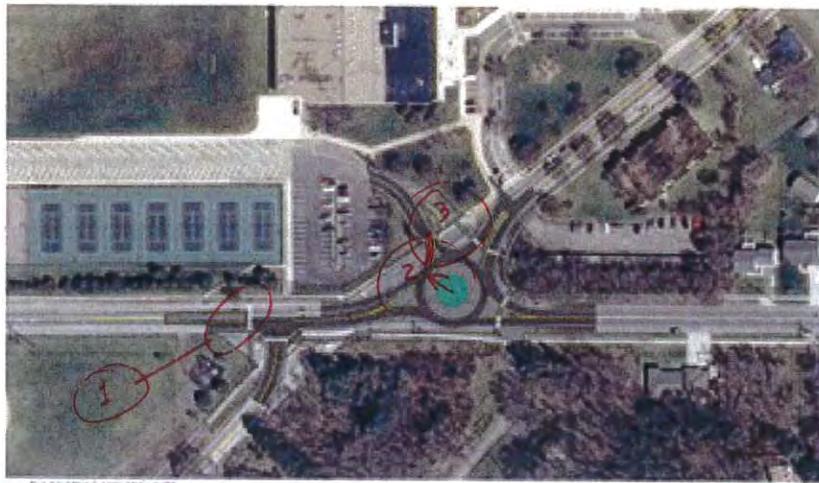
Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Single Roundabout



ROUNDABOUT AND SCHOOL LOT
 1. SCHOOL LOT
 2. TW. BL. RD.
 3. ROUNDABOUT

Benefits

Concerns

Rank (1 to 4)

① Keeps traffic moving much better than other scenarios.

\$850,000 added const. cost (1 of 4)

② Low speed traffic at x-walks (with center medians)

ROW impact on rental property

③ by switching buses from 1-way E to 1-way W to E in school lot, it will eliminate bus backups.

Some people will oppose because of perception of Roundabouts.

④ removes parking from Tw. Bl. Rd. & creates center turn lane.

— loss of parking on Tw. Bl. Rd.

change:

① add RRFB/x-walk w/o stop condition

② shift Roundabout approx. 20'± to NW

to reduce ROW acquisition impact & steeper grades in Roundabout.

③ change school park

Alternatives workshop

Alternatives

- Double T
- Double T - Separated
- Single roundabout
- Double roundabout



• Double Roundabout



PLAN ROUNDABOUT DOUBLE ROUNDABOUT
 11.16.16
 11.16.16
 Stantec

Benefits

Concerns

Rank (1 to 4)

continuous traffic flow in all directions.	Highest const. cost.
low speed traffic at ped. X-ings.	ROW impacts

3 of 4

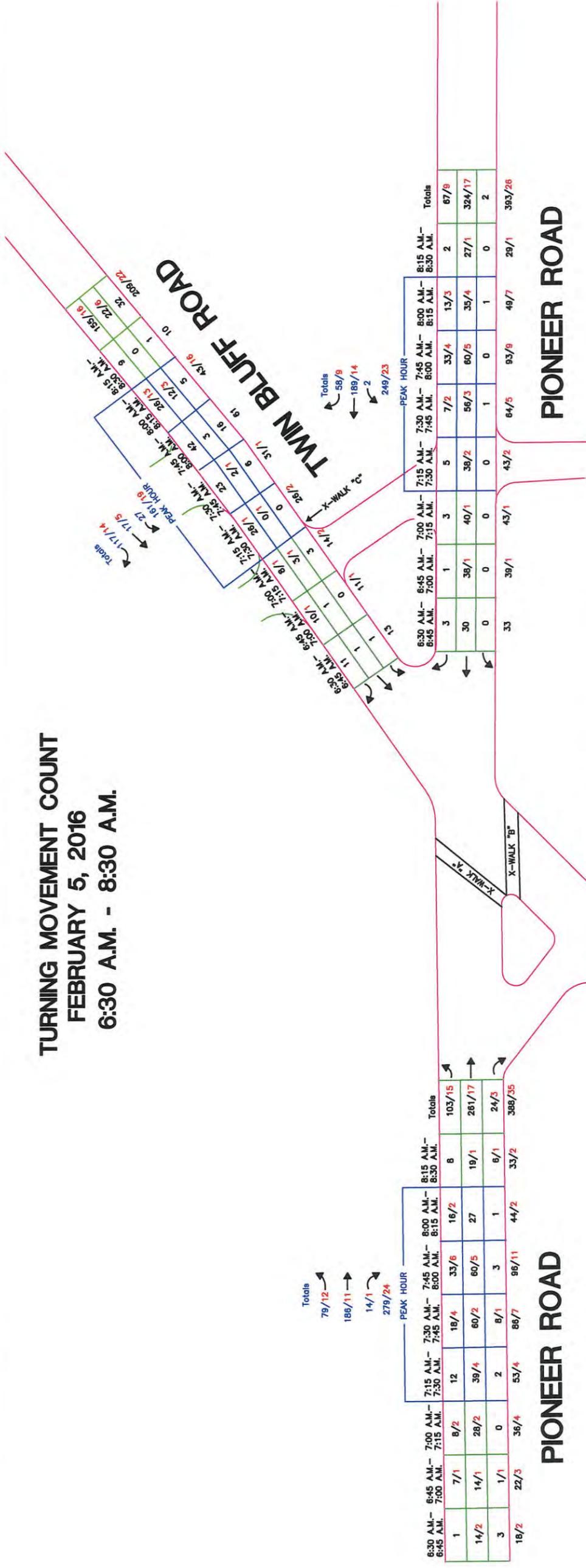
**INTERSECTION CONCEPT STUDY INTERSECTION RECONSTRUCTION AT TWIN BLUFF MIDDLE SCHOOL
AND CROSSING IMPROVEMENTS**

Appendix D
May 3, 2016

Appendix D

TRAFFIC COUNTS

**TURNING MOVEMENT COUNT
FEBRUARY 5, 2016
6:30 A.M. - 8:30 A.M.**



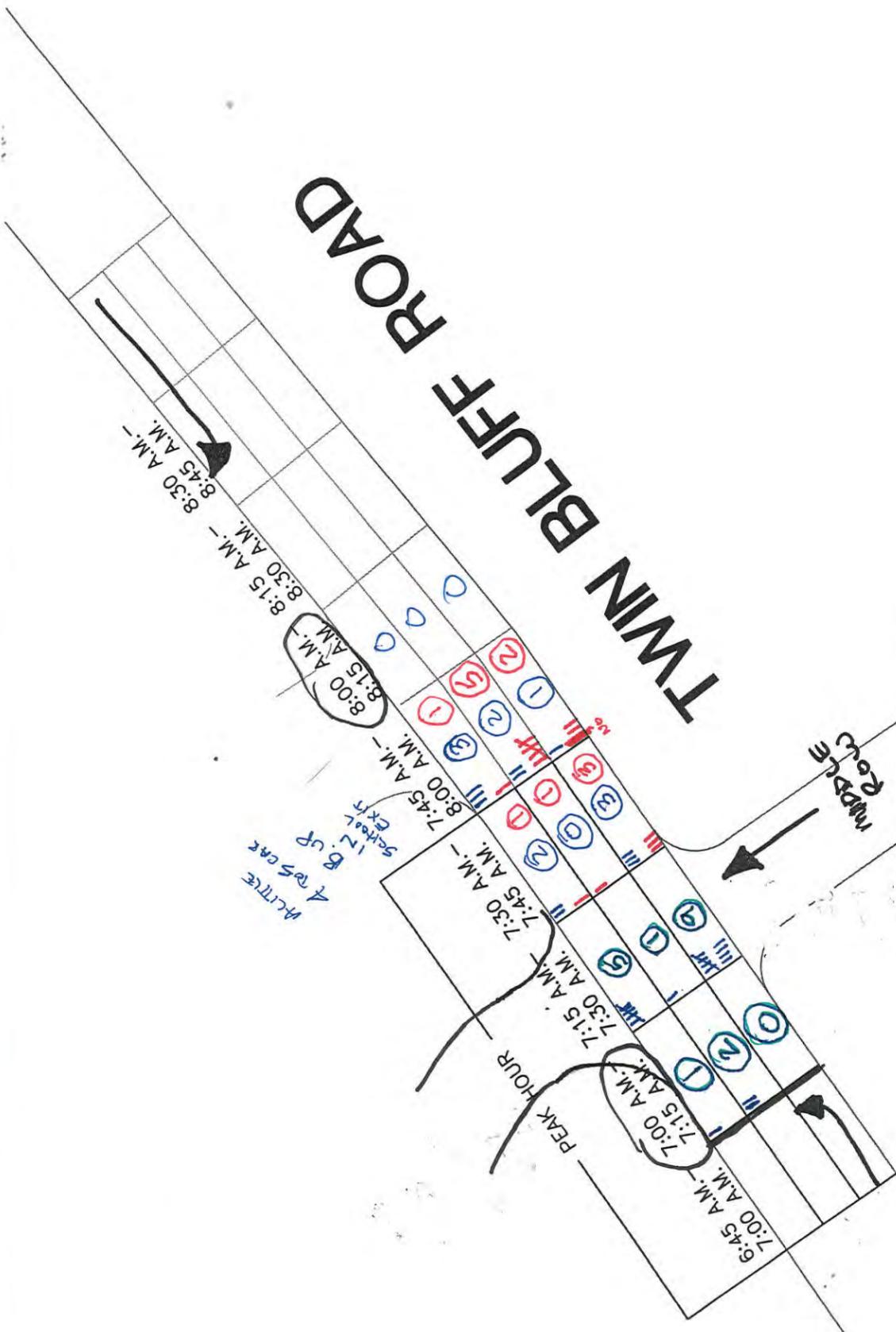
PEDESTRIAN CROSSINGS

	X-WALK "A"	X-WALK "B"	X-WALK "C"
6:30 A.M. - 6:45 A.M.	0	0	0
6:45 A.M. - 7:00 A.M.	0	1	0
7:00 A.M. - 7:15 A.M.	0	0	0
7:15 A.M. - 7:30 A.M.	1	0	0
7:30 A.M. - 7:45 A.M.	1	0	0
7:45 A.M. - 8:00 A.M.	4	0	3
8:00 A.M. - 8:15 A.M.	1	0	0
8:15 A.M. - 8:30 A.M.	0	0	0

7:00
TO
8:15

1 CAR IN LST AT 7:00 A.M.
4 " " " @ 7:15 AM

BLUE CARS
RED BUS



PEAK HOUR		7:00 A.M. - 7:15 A.M.		7:15 A.M. - 7:30 A.M.		7:30 A.M. - 7:45 A.M.		7:45 A.M. - 8:00 A.M.		8:00 A.M. - 8:15 A.M.		8:15 A.M. - 8:30 A.M.		8:30 A.M. - 8:45 A.M.		Totals
2	10	41	42	3	1	3	3	3	1	3	3	3	3	3	3	105
42	40	44	72	36	28	31	31	36	28	31	31	32	32	32	325	
0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	2	
44	51	85	114	39	30	34	35	35	35	35	35	35	35	35	432	

PIONEER ROAD



ERICKSON ENGINEERING

Consulting Engineers • Designers • Construction Inspectors

PIONEER (~~WEST~~) Eastbound

- 4 @ 7:32
- 5 @ 7:39
- 6 @ 7:41 (2nd TENNIS COURT)
- 5 @ 7:45
- 8 @ 7:45 (3rd TENNIS COURT)
- 18 @ 7:48 (2 CARS PAST EXIT ONLY)
- 21 @ 7:48 (HYDRANT EAST OF LIFT STATION ENTRANCE)
- 14 @ 7:50
- 17 @ 7:51
- 16 @ 7:52
- 21 @ 7:53 (HYDRANT EAST OF LIFT STATION ENTRANCE) *(960' from Intersection)*
- 18 @ 7:54
- 9 @ 7:55

PIONEER (~~EAST~~) Westbound

- 4 @ 7:21
- 5 @ 7:29
- 4 @ 7:36
- 5 @ 7:39
- 7 @ 7:44
- 9 @ 7:46 (CUT)
- 10 @ 7:47 (1 CAR PAST CUT)
- 7 @ 7:49
- 4 @ 7:51
- 4 @ 7:55
- 4 @ 7:59

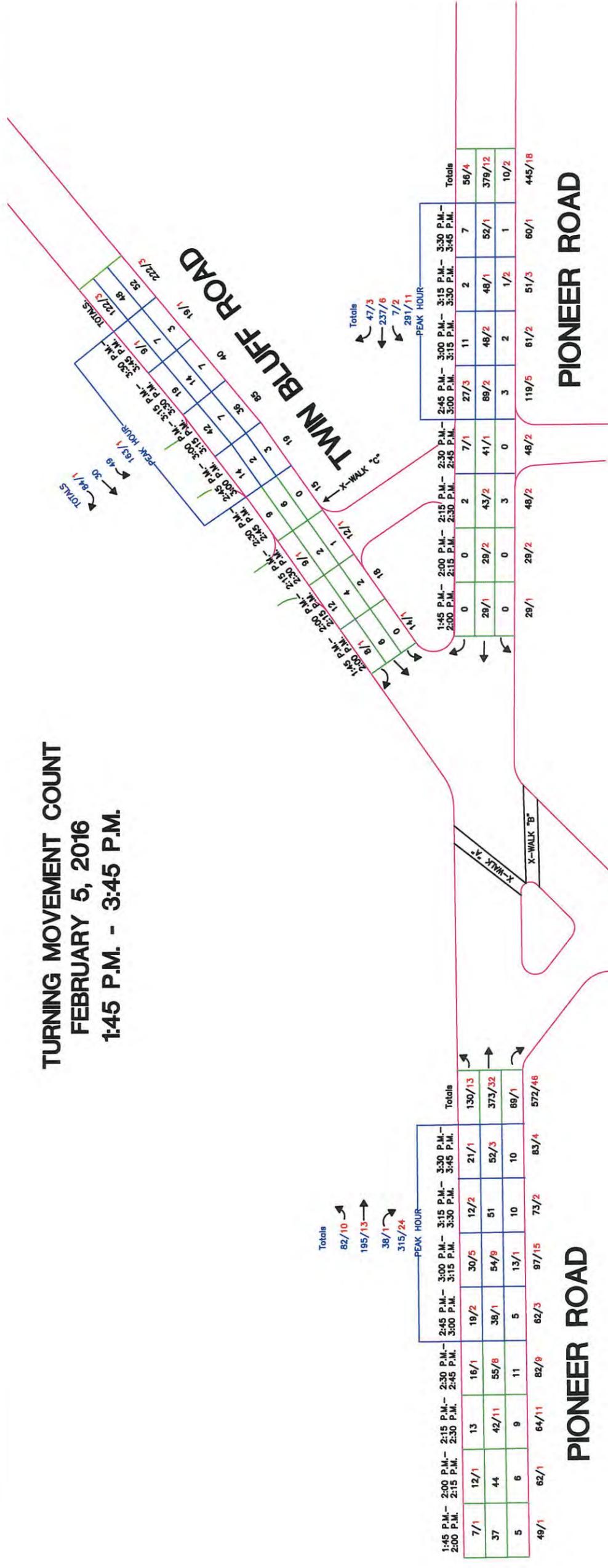
TBR (~~WEST~~) Eastbound

* NEVER MORE THAN 2 CARS

TBR (~~EAST~~) Southbound

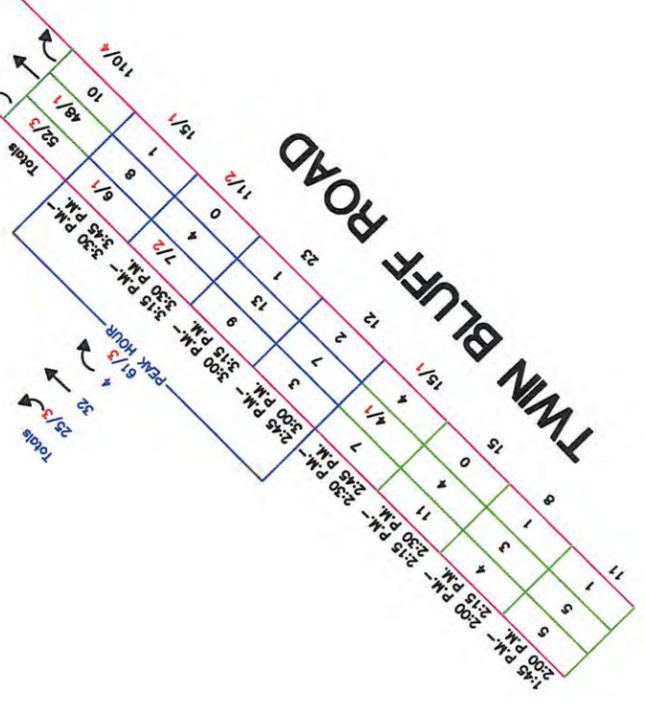
- 4 @ 7:50

**TURNING MOVEMENT COUNT
FEBRUARY 5, 2016
1:45 P.M. - 3:45 P.M.**



1:45 P.M. - 2:00 P.M.	2:00 P.M. - 2:15 P.M.	2:15 P.M. - 2:30 P.M.	2:30 P.M. - 2:45 P.M.	2:45 P.M. - 3:00 P.M.	3:00 P.M. - 3:15 P.M.	3:15 P.M. - 3:30 P.M.	3:30 P.M. - 3:45 P.M.	Totals
7/1	12/1	13	16/1	19/2	30/5	12/2	21/1	130/13
37	44	42/11	55/8	38/1	54/9	51	52/3	373/32
5	6	9	11	5	13/1	10	10	68/1
49/1	62/1	64/11	82/9	62/3	97/15	73/2	83/4	572/46

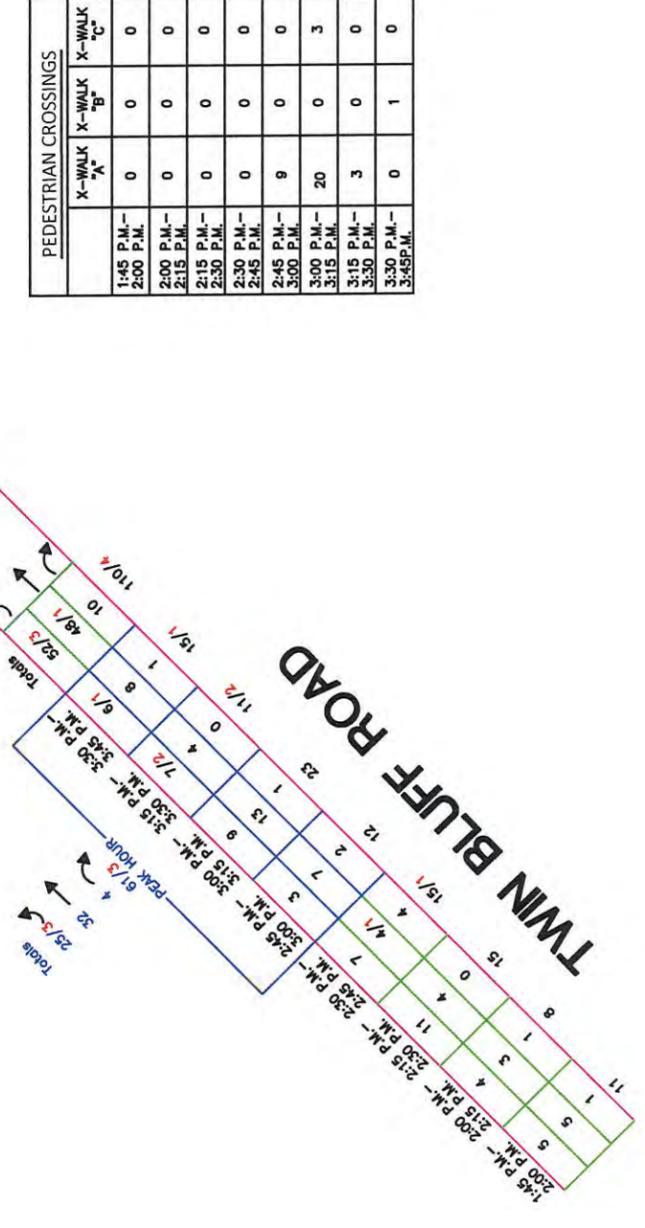
PIONEER ROAD



	PEDESTRIAN CROSSINGS		
	X-WALK "A"	X-WALK "B"	X-WALK "C"
1:45 P.M. - 2:00 P.M.	0	0	0
2:00 P.M. - 2:15 P.M.	0	0	0
2:15 P.M. - 2:30 P.M.	0	0	0
2:30 P.M. - 2:45 P.M.	0	0	0
2:45 P.M. - 3:00 P.M.	9	0	0
3:00 P.M. - 3:15 P.M.	20	0	3
3:15 P.M. - 3:30 P.M.	3	0	0
3:30 P.M. - 3:45 P.M.	0	1	0

1:45 P.M. - 2:00 P.M.	2:00 P.M. - 2:15 P.M.	2:15 P.M. - 2:30 P.M.	2:30 P.M. - 2:45 P.M.	2:45 P.M. - 3:00 P.M.	3:00 P.M. - 3:15 P.M.	3:15 P.M. - 3:30 P.M.	3:30 P.M. - 3:45 P.M.	Totals
0	0	2	7/1	27/3	11	2	7	56/4
29/1	29/2	43/2	41/1	89/2	48/2	48/1	52/1	379/12
0	0	3	0	3	2	1/2	1	10/2
29/1	29/2	48/2	48/2	119/5	61/2	51/3	60/1	445/18

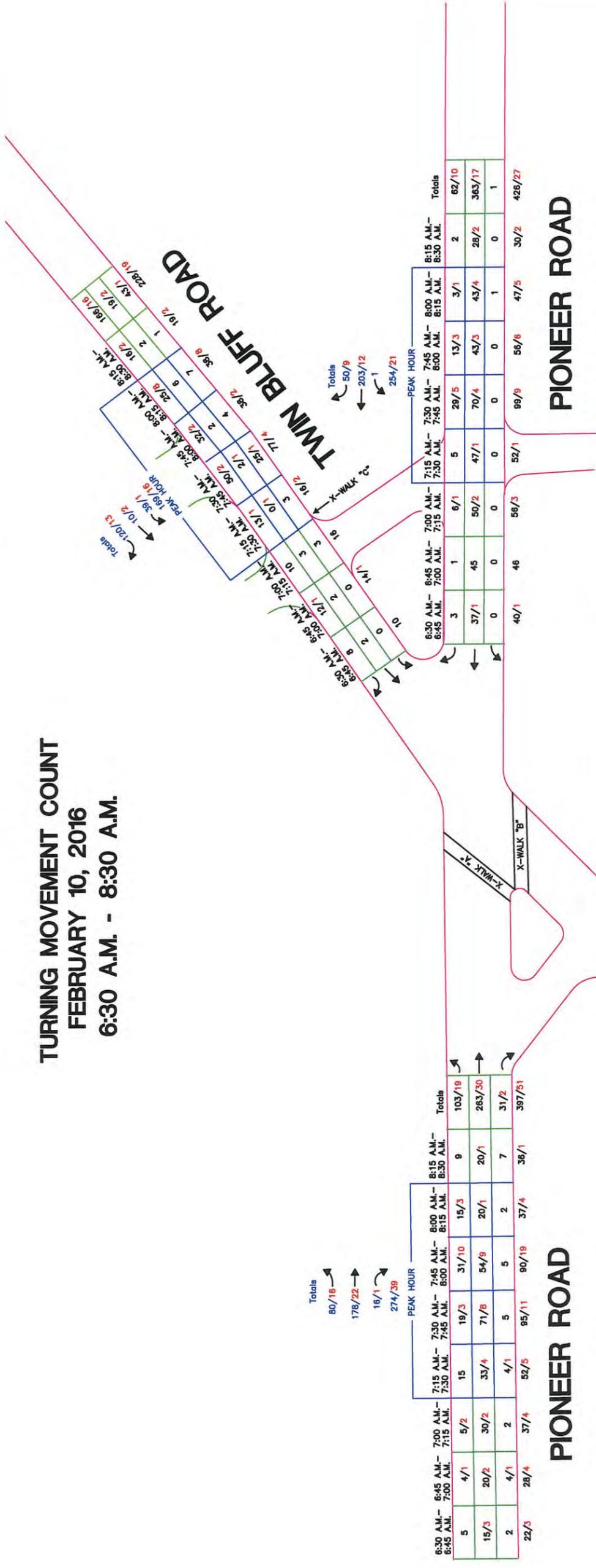
PIONEER ROAD



1:45 P.M. - 2:00 P.M.	2:00 P.M. - 2:15 P.M.	2:15 P.M. - 2:30 P.M.	2:30 P.M. - 2:45 P.M.	2:45 P.M. - 3:00 P.M.	3:00 P.M. - 3:15 P.M.	3:15 P.M. - 3:30 P.M.	3:30 P.M. - 3:45 P.M.	Totals
11	5	4	11	15	0	4	4/1	52/3
5	5	4	11	12	2	7	3	52/3
1	1	1	13	25	1	13	11/2	110/4
15/1	15/1	11/2	11/2	25	4	7/2	6/1	110/4



**TURNING MOVEMENT COUNT
FEBRUARY 10, 2016
6:30 A.M. - 8:30 A.M.**



Totals
80/16
178/22
16/1
274/39

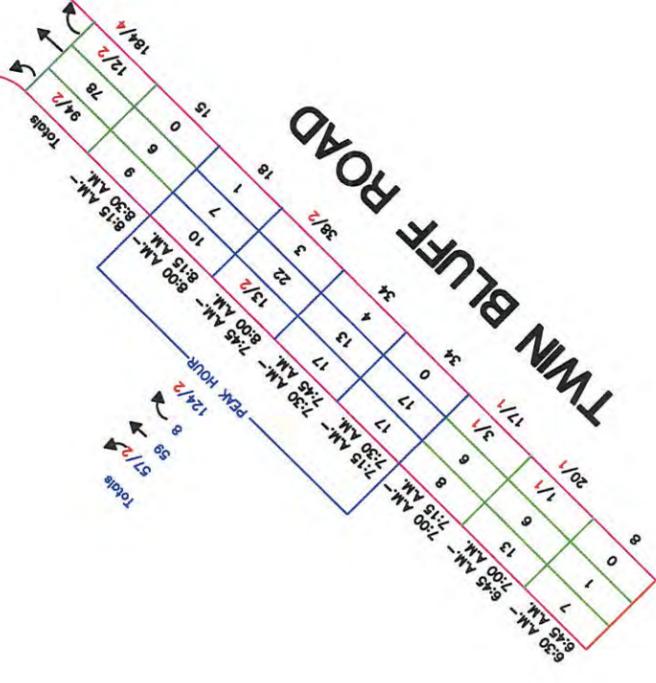
		PEAK HOUR			Totals		
		7:15 A.M.- 7:30 A.M.	7:45 A.M.- 8:00 A.M.	8:15 A.M.- 8:30 A.M.			
6:30 A.M.- 6:45 A.M.	5	4/1	5/2	15/3	9	103/19	
	15/3	20/2	30/2	31/10	20/1	283/30	
	2	4/1	2	4/1	7	31/2	
	22/3	28/4	37/4	52/5	38/1	397/51	

PIONEER ROAD

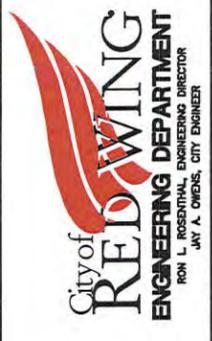
		PEAK HOUR			Totals		
		7:15 A.M.- 7:30 A.M.	7:45 A.M.- 8:00 A.M.	8:15 A.M.- 8:30 A.M.			
6:30 A.M.- 6:45 A.M.	3	1	5	29/5	13/3	3/1	2
	37/1	45	70/4	43/3	43/4	28/2	363/17
	0	0	0	0	0	1	0
	40/1	46	56/3	52/1	99/9	56/6	47/5
					30/2	426/27	

PIONEER ROAD

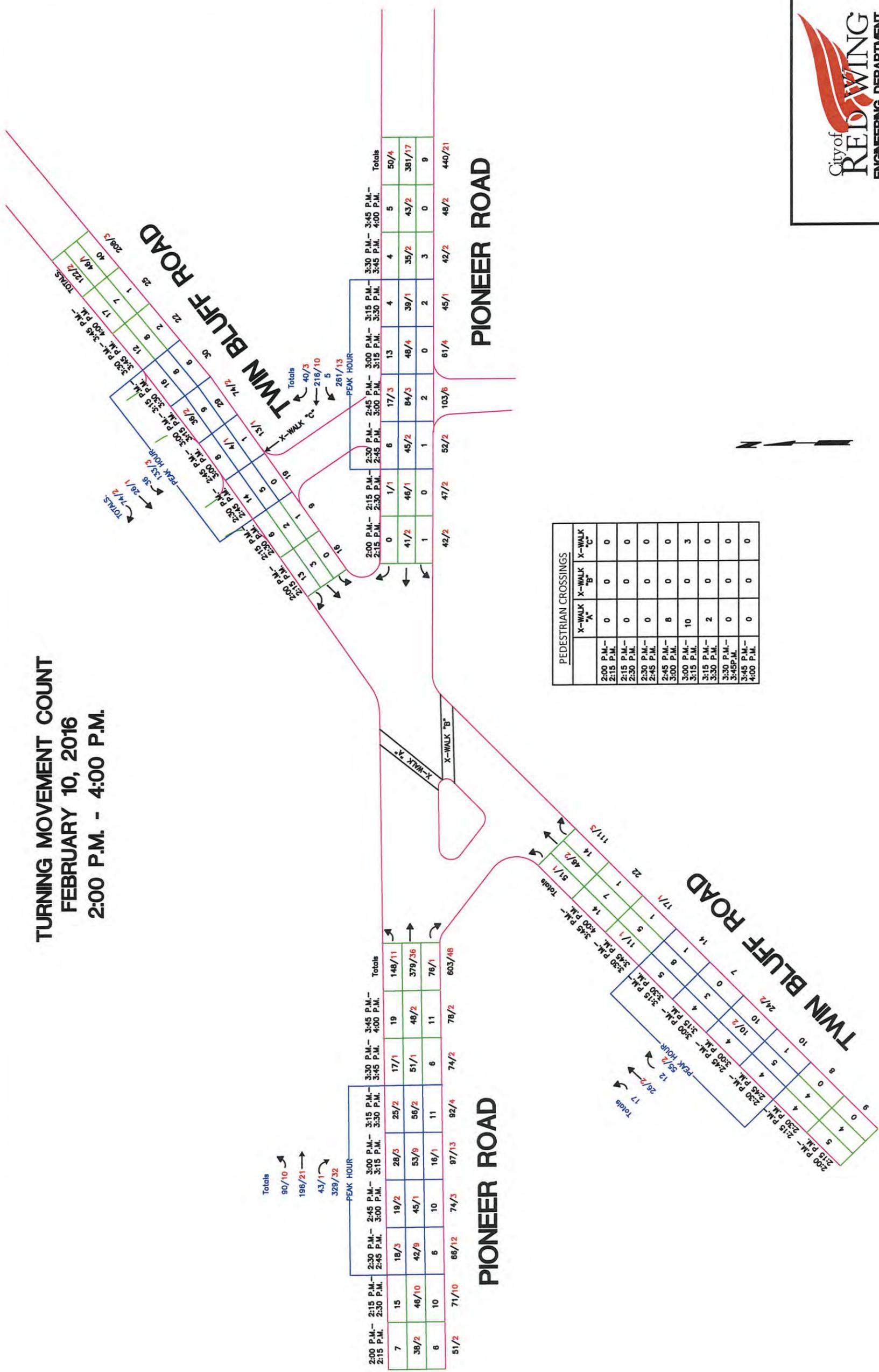
PEDESTRIAN CROSSINGS			
	X-WALK "A"	X-WALK "B"	X-WALK "C"
6:30 A.M.- 6:45 A.M.	0	0	0
6:45 A.M.- 7:00 A.M.	0	0	0
7:00 A.M.- 7:15 A.M.	1	1	0
7:15 A.M.- 7:30 A.M.	2	0	0
7:30 A.M.- 7:45 A.M.	2	0	0
7:45 A.M.- 8:00 A.M.	4	0	1
8:00 A.M.- 8:15 A.M.	1	0	0
8:15 A.M.- 8:30 A.M.	0	0	2



Totals
57/2
58
124/2



**TURNING MOVEMENT COUNT
FEBRUARY 10, 2016
2:00 P.M. - 4:00 P.M.**



Totals
 90/10
 198/21
 43/1
 329/32

PEAK HOUR

	2:00 P.M. - 2:15 P.M.	2:15 P.M. - 2:30 P.M.	2:30 P.M. - 2:45 P.M.	2:45 P.M. - 3:00 P.M.	3:00 P.M. - 3:15 P.M.	3:15 P.M. - 3:30 P.M.	3:30 P.M. - 3:45 P.M.	3:45 P.M. - 4:00 P.M.	Totals
7	15	18/3	19/2	28/3	25/2	17/1	19	148/11	148/11
38/2	48/10	42/8	45/1	53/9	56/2	51/1	48/2	379/36	379/36
6	10	6	10	16/1	11	6	11	76/1	76/1
51/2	71/0	66/12	74/3	97/13	92/4	74/2	78/2	603/48	603/48

PIONEER ROAD

PEAK HOUR

	2:00 P.M. - 2:15 P.M.	2:15 P.M. - 2:30 P.M.	2:30 P.M. - 2:45 P.M.	2:45 P.M. - 3:00 P.M.	3:00 P.M. - 3:15 P.M.	3:15 P.M. - 3:30 P.M.	3:30 P.M. - 3:45 P.M.	3:45 P.M. - 4:00 P.M.	Totals
0	1/1	6	17/3	13	4	4	5	50/4	50/4
41/2	46/1	45/2	84/3	48/4	39/1	35/2	43/2	381/17	381/17
1	0	1	2	0	2	3	0	9	9
42/2	47/2	52/2	103/6	61/4	45/1	42/2	48/2	440/21	440/21

PIONEER ROAD

PEDESTRIAN CROSSINGS

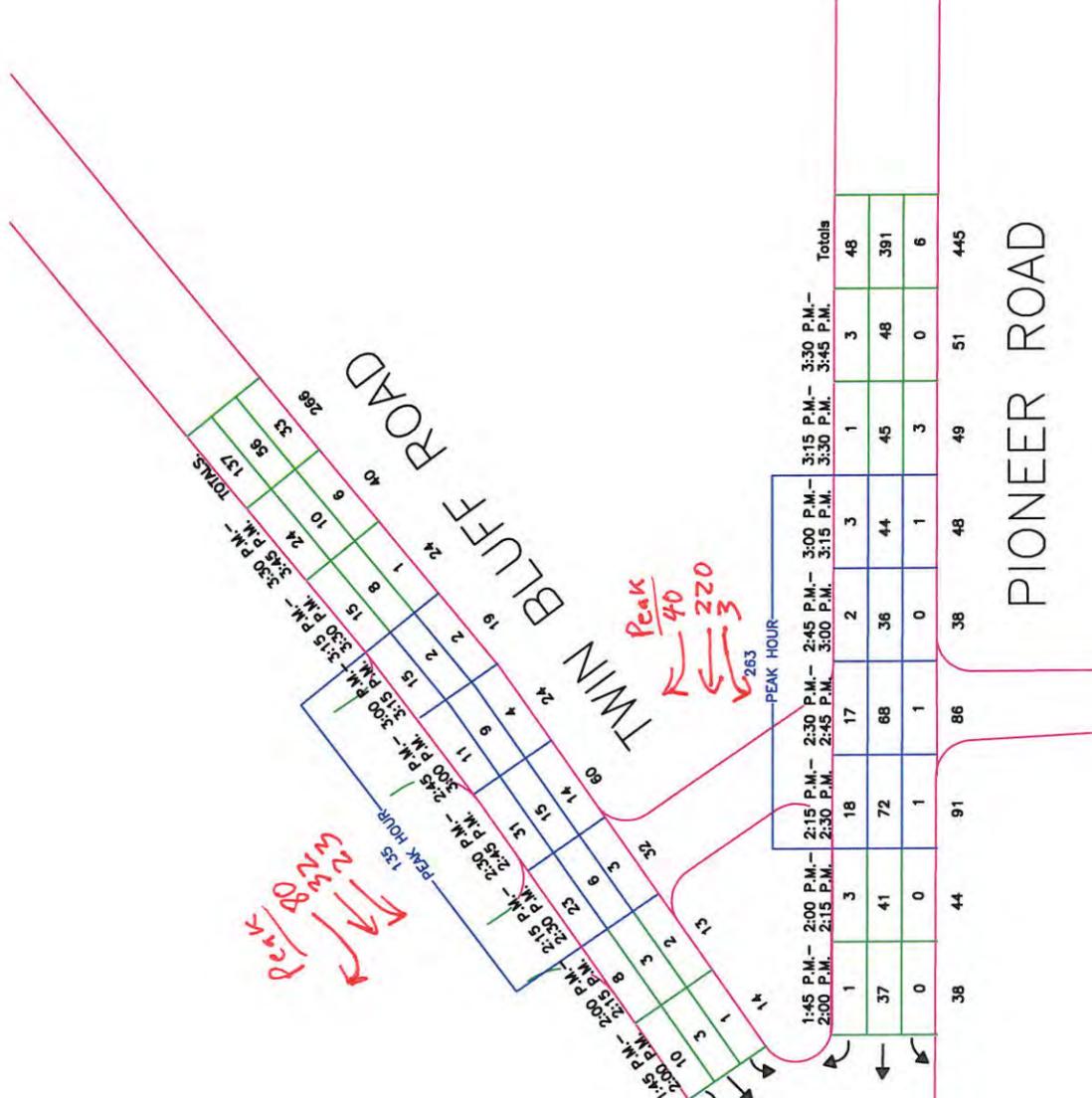
	X-WALK "A"	X-WALK "B"	X-WALK "C"
2:00 P.M. - 2:15 P.M.	0	0	0
2:15 P.M. - 2:30 P.M.	0	0	0
2:30 P.M. - 2:45 P.M.	0	0	0
2:45 P.M. - 3:00 P.M.	8	0	0
3:00 P.M. - 3:15 P.M.	10	0	3
3:15 P.M. - 3:30 P.M.	2	0	0
3:30 P.M. - 3:45 P.M.	0	0	0
3:45 P.M. - 4:00 P.M.	0	0	0



TURNING COUNT

1/9/2014

PM



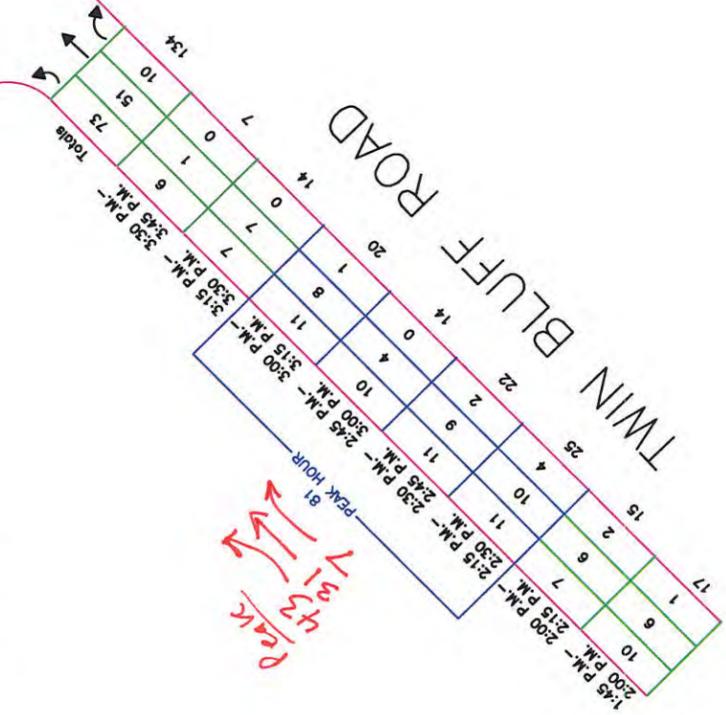
PIONEER ROAD

PIONEER ROAD

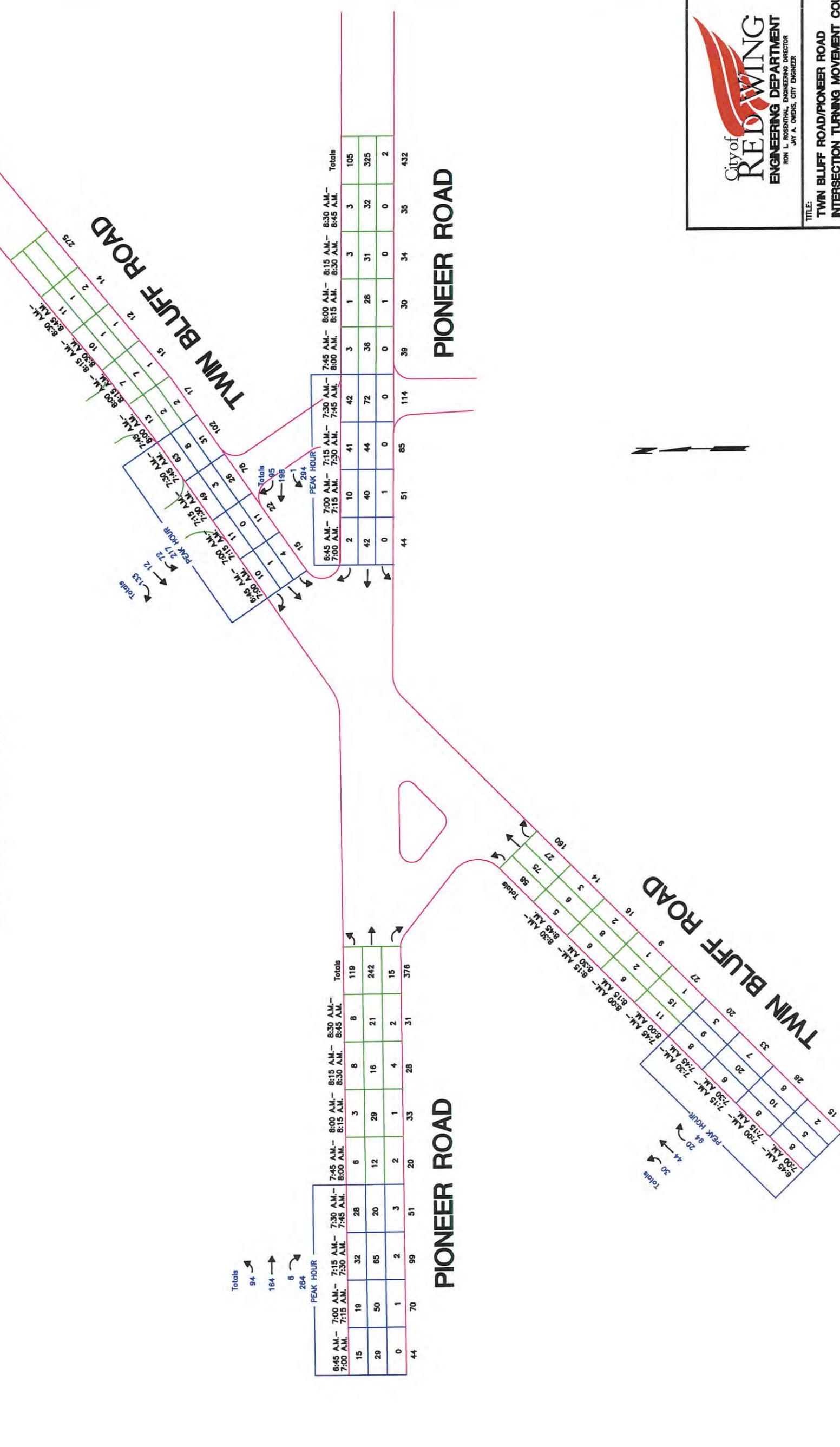
Peak
66
179
36

Eastbound Side (Twin Bluff Road to Pioneer Road)

Time Interval	1:45 P.M. - 2:00 P.M.	2:00 P.M. - 2:15 P.M.	2:15 P.M. - 2:30 P.M.	2:30 P.M. - 2:45 P.M.	2:45 P.M. - 3:00 P.M.	3:00 P.M. - 3:15 P.M.	3:15 P.M. - 3:30 P.M.	3:30 P.M. - 3:45 P.M.	Totals
Left	8	31	20	18	10	18	31	17	151
Through	36	48	45	36	48	50	46	69	378
Right	9	10	13	6	11	6	13	14	82
Totals	51	89	78	60	69	74	90	100	611



**TURNING MOVEMENT COUNT
JANUARY 9, 2014
6:45 A.M. - 8:45 A.M.**



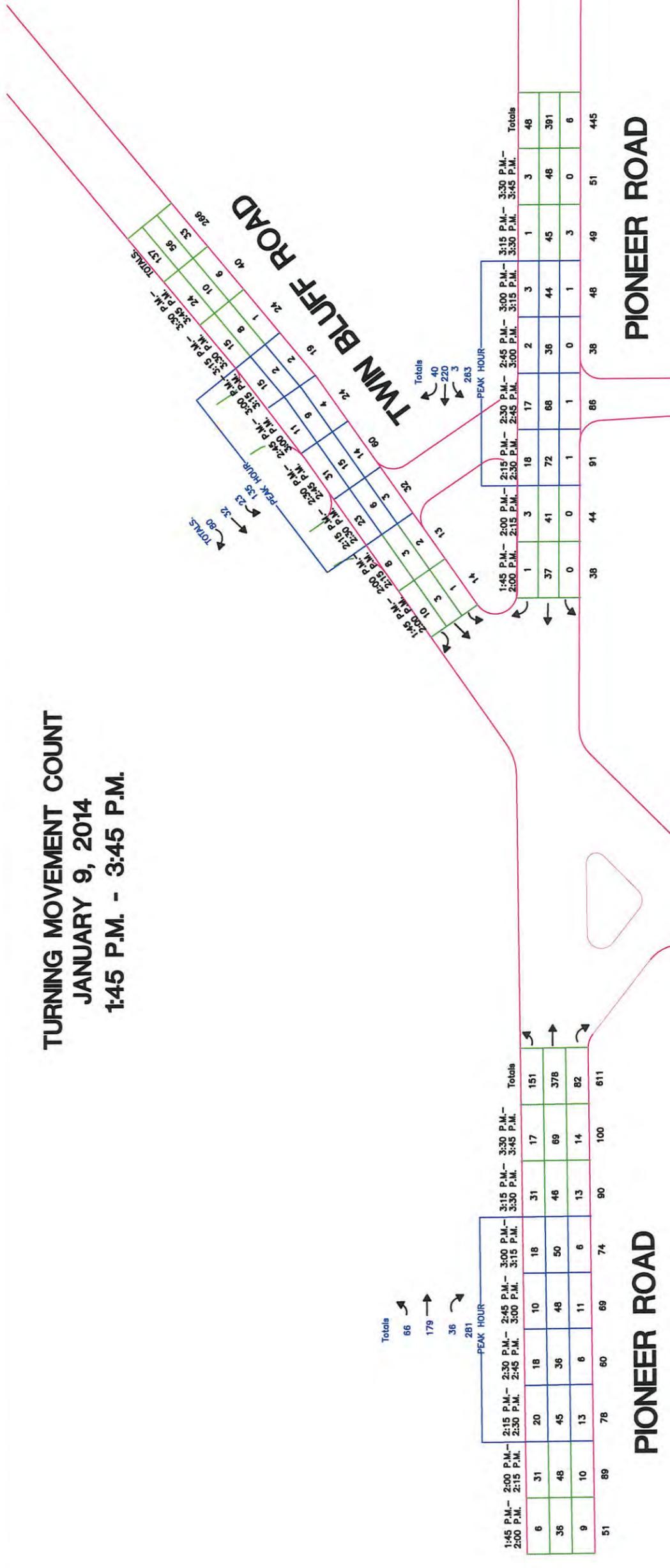


City of REDWING
ENGINEERING DEPARTMENT
RON L. ROSenthal, ENGINEERING DIRECTOR
 JAY A. OWENS, CITY ENGINEER

TITLE:
**TWIN BLUFF ROAD/PIONEER ROAD
 INTERSECTION TURNING MOVEMENT COUNT**

Sheet No. 1 of 6 Sheets

**TURNING MOVEMENT COUNT
JANUARY 9, 2014
1:45 P.M. - 3:45 P.M.**



Totals

66	179	36	281
----	-----	----	-----

1:45 P.M. - 2:00 P.M.	2:00 P.M. - 2:15 P.M.	2:15 P.M. - 2:30 P.M.	2:30 P.M. - 2:45 P.M.	2:45 P.M. - 3:00 P.M.	3:00 P.M. - 3:15 P.M.	3:15 P.M. - 3:30 P.M.	3:30 P.M. - 3:45 P.M.	Totals
6	31	20	18	10	18	31	17	151
36	48	45	36	48	50	46	69	378
9	10	13	6	11	6	13	14	82
51	89	78	80	69	74	90	100	611

1:45 P.M. - 2:00 P.M.	2:00 P.M. - 2:15 P.M.	2:15 P.M. - 2:30 P.M.	2:30 P.M. - 2:45 P.M.	2:45 P.M. - 3:00 P.M.	3:00 P.M. - 3:15 P.M.	3:15 P.M. - 3:30 P.M.	3:30 P.M. - 3:45 P.M.	Totals
1	3	18	17	2	3	1	3	48
37	41	72	68	36	44	45	48	391
0	0	1	0	0	1	3	0	6
38	44	91	86	38	48	49	51	445

PIONEER ROAD

PIONEER ROAD



1:45 P.M. - 2:00 P.M.	2:00 P.M. - 2:15 P.M.	2:15 P.M. - 2:30 P.M.	2:30 P.M. - 2:45 P.M.	2:45 P.M. - 3:00 P.M.	3:00 P.M. - 3:15 P.M.	3:15 P.M. - 3:30 P.M.	3:30 P.M. - 3:45 P.M.	Totals
17	6	10	7	8	10	15	2	75
1	2	4	10	11	9	4	25	73
14	22	14	0	4	10	20	1	85
7	31	81	7	11	8	14	7	134
43	43	81	14	20	1	14	7	134

TWIN BLUFF ROAD



**INTERSECTION CONCEPT STUDY INTERSECTION RECONSTRUCTION AT TWIN BLUFF MIDDLE SCHOOL
AND CROSSING IMPROVEMENTS**

Appendix E
May 3, 2016

Appendix E

2014 SRTS INFRASTRUCTURE GRANT APPLICATION



SAFE ROUTES TO SCHOOL

Minnesota Safe Routes to School 2014 Infrastructure Grant Application

City of Red Wing
January 2014



Design with community in mind



Table of Contents

SECTION 1.	CONTACT INFORMATION	1
1A.	LOCAL PROJECT MANAGER	1
1B.	SPONSOR	1
SECTION 2.	BACKGROUND	2
2A.	PROJECT TITLE & LOCATION	2
2B.	SCHOOL INFORMATION	2
2C.	ROADWAY INFORMATION	2
SECTION 3.	PLANNING AND SUPPORT	4
SECTION 4.	PROPOSED PROJECT	11
SECTION 5.	PROJECT COSTS	20
SECTION 6.	EVALUATION	21
 LIST OF TABLES		
	Table 1 School Information.....	2
	Table 2 Roadway Information	2
	Table 3 Crash Summary for Pioneer Rd & Twin Bluff Rd.....	6
	Table 4 Level of Service Results for Pioneer Rd & Twin Bluff Rd	13
	Table 5 Project Cost Estimate	20
 LIST OF FIGURES		
	Figure 1 Project Location Map	3
	Figure 2 Twin Bluff Middle School Issues Map	7
	Figure 3 Sunnyside Elementary School Issues Map	8
	Figure 4 Twin Bluff Middle School Proposed Infrastructure Improvements Map.....	16
	Figure 5 Sunnyside Elementary School Proposed Infrastructure Improvements Map	17
 LIST OF APPENDICES		
APPENDIX A		1
	Sponsoring Agency Resolution, Resolution Agreeing to Maintain Facility and Letters of Consurrence.....	1
APPENDIX B		2
	SRTS Parent Surveys and Student Tally Surveys	2

SECTION 1. Contact Information

1A. LOCAL PROJECT MANAGER

Jay Owens, P.E.
City Engineer
City of Red Wing
229 Tyler Road North
Red Wing, MN 55066
(651) 385-3625
jay.owens@ci.red-wing.mn.us

1B. SPONSOR

The project sponsor is the same as the local project manager.

SECTION 2. BACKGROUND

2A. PROJECT TITLE & LOCATION

A project location map is included as Figure 1.

Project Title – Red Wing, Minnesota 2014 Safe Routes to School Infrastructure Grant

City – Red Wing

County – 025 Goodhue County

MnDOT District 6

ATP 6 – Southeast Minnesota

2B. SCHOOL INFORMATION

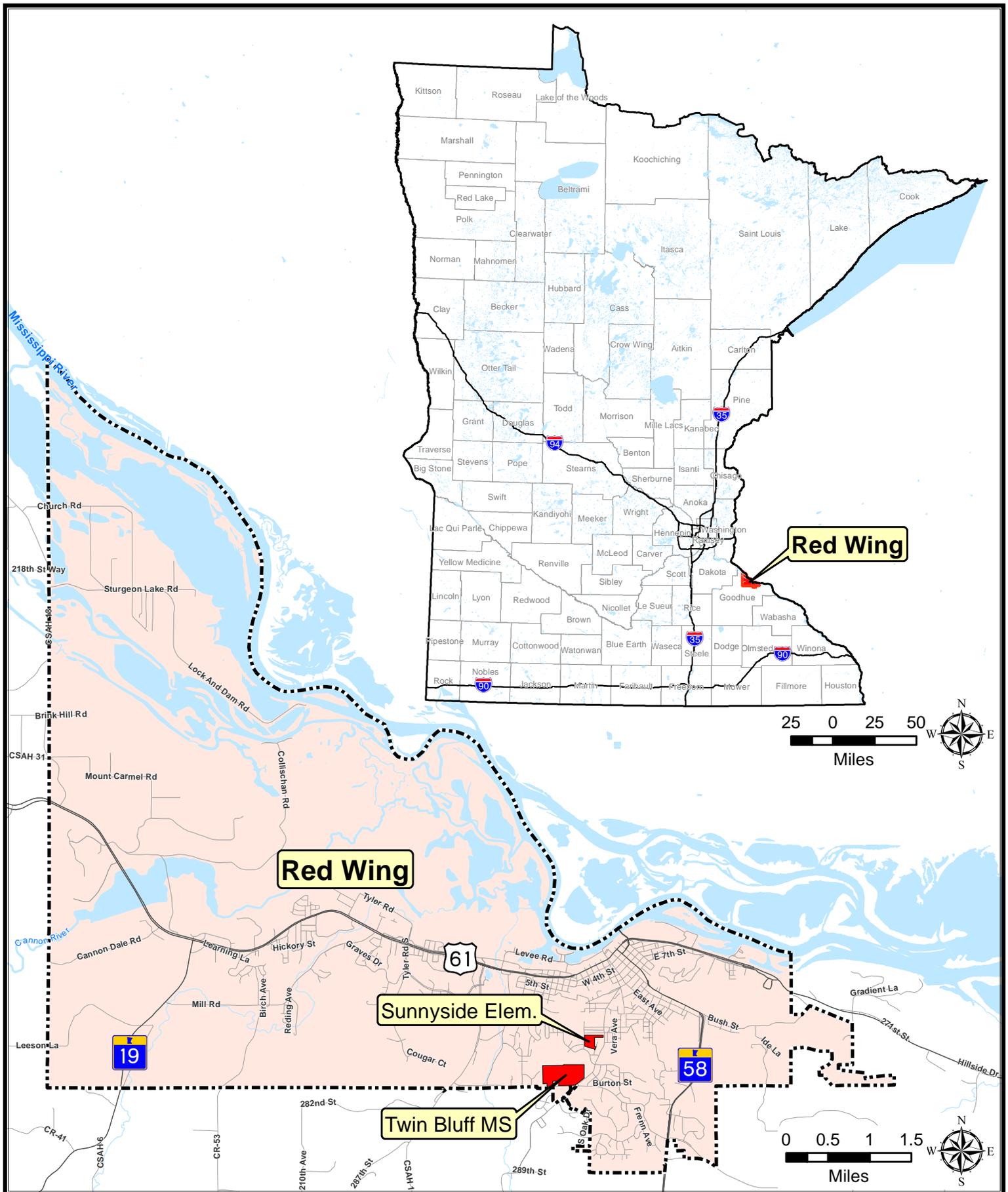
TABLE 1 SCHOOL INFORMATION

School Name	Student Population	Grades	Students to Benefit	School Contact
Twin Bluffs Middle School	601	5-7	601	Chris Palmatier – Principal
Sunnyside Elementary School	486	K-2	486	Patti Roberts - Principal

2C. ROADWAY INFORMATION

TABLE 2 ROADWAY INFORMATION

Roadway Name	Road Authority (town, city, county, state)	Contact Person
Pioneer Road – West Leg	Goodhue County	Greg Isakson, County Engineer
Pioneer Road – East Leg	City of Red Wing	Jay Owens, City Engineer
Twin Bluff Road	City of Red Wing	Jay Owens, City Engineer
West Avenue	City of Red Wing	Jay Owens, City Engineer



**2014 Minnesota Safe Routes to School
Infrastructure Grant Application**

Red Wing, Minnesota

January 23, 2014

Project Location

Figure 1



SECTION 3. PLANNING AND SUPPORT

3A. IDENTIFY THE EXISTING SRTS PLAN THAT THE PROPOSED INFRASTRUCTURE PROJECT STEMS FROM

The infrastructure projects proposed within this application stem from two Safe Routes to School Plans that were completed in August 2013. The two plans are the *Twin Bluff Middle School* and *Sunnyside Elementary School Safe Routes to School Plans*. Both plans were the result of a 2012 grant that the City of Red Wing received from the Minnesota Department of Transportation (MnDOT) Safe Routes to School (SRTS) Planning Assistance Program. A copy of each of the two plans can be found on the City of Red Wing's website at <http://www.red-wing.org/activeliving.html>.

Other related community planning efforts that have taken place in Red Wing that affect students walking and bicycling to and from school include the following: *2007 Comprehensive Plan, 2008 Sustainability Report, 2011 Complete Streets Policy Resolution, and the 2011 Bicycle and Pedestrian Master Plan*. These documents have not been attached to the application, but can be provided upon request.

3B. IF THERE IS NO PLAN WITH THE PROPOSED PROJECT, DESCRIBE YOUR PLANNING PROCESS

There is a plan behind the proposed infrastructure projects for this grant and we have summarized information from the plans to respond to questions asked within the grant application.

a. Discuss who are involved in the planning (SRTS team)

Karsten Anderson – Red Wing Public School Superintendent
Lisa Bayley – Red Wing City Council President
Ashlyn Christianson – Goodhue County Health & Human Services
Kevin Johnson – Red Wing Public Schools Facility Director
Michelle Leise – Live Healthy Red Wing Coordinator
Jay Owens – Red Wing City Engineer
Chris Palmatier – Twin Bluff Middle School Principal
Brian Peterson – Red Wing City Planning Director
Patti Roberts – Sunnyside Elementary School Principal
Michael Schultz – Red Wing City Council Member

b. Describe current student travel modes, any student travel routes, school transportation or wellness policies

Twin Bluff Middle School – As part of the SRTS Plan for Twin Bluff Middle School, head counts were collected in October and December 2012. Teachers and other volunteers counted students walking and cycling to school. The October count identified 70 walkers (12% of the school's student population) and 30 bicyclists (5% of the school's student population). The December count identified 43 walkers (7%) and 30 bicyclists (5%).

Sunnyside Elementary School – As part of the SRTS Plan for Sunnyside Elementary School, head counts were collected in October and December 2012. Teachers and other volunteers counted students walking and cycling to school. The October count identified 69 walkers (14% **of the school's student population**) and 7 bicyclists (1% **of the school's student population**). The December count identified 30 walkers (6%) and 7 bicyclists (1%).

The Red Wing School District has two grade level centers serving elementary level students – Sunnyside which serves grades K-2 and Burnside which serves grades 3-5. A bus transports students each day from Sunnyside Elementary School to Burnside Elementary School. During the December 2012 count, an additional 124 walkers and 24 bicyclists traveled to Sunnyside Elementary School to access the bus to Burnside Elementary.

c. Describe the public involvement process

The planning process for both the Twin Bluff Middle School and Sunnyside Elementary School received support and involvement from local partners such as the Live Healthy Red Wing (LHRW) program (a community coalition that promotes active living), the Red Wing School District, the City of Red Wing and local health and business organizations. The planning process also involved parent surveys for the Twin Bluff Middle School. The parent surveys indicated that after distance and weather, the top reasons for keeping parents from letting their children walk to school were (a) speed of traffic along route; (b) amount of traffic along a route; and (c) safety of intersection crossings. The Red Wing Planning Advisory Commission also conducted several reviews of the draft SRTS Plans in order to provide public feedback. The City feels this supports the need for infrastructure improvements near the schools.

In addition to the two SRTS Planning documents; in 2013, the City of Red Wing received a MnDOT Non-Infrastructure Implementation Grant to help support the SRTS program at both schools. The grant will fund a SRTS coordinator, Walk and Bike to School maps and posters, National Bike-Walk to School Day incentives, a second phase of the Walking Wednesday program, Park & Walk signs, and bike parts for the Fix a Bike program.

The City has also entered into a contract with the Center for Prevention of Blue Cross Blue Shield of Minnesota in 2013 to implement additional active living initiatives.

d. Identify assessment tools used to identify barriers to increasing the number of students safely walking and bicycling

In preparation for the SRTS Infrastructure Grant, Student Travel Tally Surveys and Parent Surveys from the National SRTS Center were completed for the schools. The results of both surveys can be found in Appendix B.

As a result from the SRTS Planning documents completed for each school, a walking audit and observation of student arrivals were conducted in October 2012 to identify current conditions and key issues. The key issues identified resulted in a list of infrastructure

recommendations for each school site to mitigate the issues. A map of key issues that are the basis for recommended infrastructure improvements as proposed in this grant has been developed for each site. The maps include the school sites, ¼ mile buffer of the school, and the location of the existing infrastructure issues. The Project Issue Site maps for Twin Bluff Middle School and Sunnyside Elementary School can be seen in Figures 2 and 3 respectively.

Peak hour turning movement counts were collected in January 2014 at the intersection of Pioneer Road and Twin Bluffs Road. The intersection, which is identified as one of the proposed improvement locations, was counted to analyze vehicle delays and resultant Levels of Service (LOS) under proposed geometric improvements. The analysis was completed to ensure that the proposed project would operate with acceptable LOS and that vehicle queues would not create additional problems with Twin Bluff Middle School site circulation. The existing turning movement counts, re-distributed counts for the proposed new intersection geometrics and resultant intersection operations are summarized within the report. Hard copies of the analysis results can be made available upon request.

Crash data was collected from MnDOT’s Crash Mapping Analysis Tool (CMAT) database for the intersection of Pioneer Road and Twin Bluffs Road from 2008 through 2012. A total of twelve crashes were reported during the five year period. Most of the collisions at the intersection are rear end crashes, which may be attributed to the existing skewed intersection and impatience during the peak hours to get through the intersection. A summary of the crash report data is identified in the table below:

TABLE 3 CRASH SUMMARY FOR PIONEER RD & TWIN BLUFF RD

Crash Types	Severity	Transportation Mode Involved	Road Conditions
Rear End – 6 Ran Off Road – 1 Sideswipe – 2 Coll. w/Object - 1 Other - 2	PDO – 11 Possible Injury – 1	Vehicle with Vehicle – 7 Vehicle with Fixed – 4 Three Vehicles - 1	Clear – 7 Snow – 4 Wet - 1



2014 Minnesota Safe Routes to School Infrastructure Grant Application

Twin Bluff Middle School Issues Map

Red Wing, Minnesota
January 28, 2013

Figure 2





2014 Minnesota Safe Routes to School Infrastructure Grant Application

Red Wing, Minnesota
January 28, 2013

Sunnyside Elementary School Issues Map

Figure 3



e. Describe how the 5Es are or will be incorporated into the school(s) SRTS program

Education – programs designed to teach children about traffic safety, bicycle and pedestrian skills and traffic decision making. Some of the educational programs that were recommended out of the two planning documents include:

- Out Your Front Door Walk and Bike to School Maps which will educate parents and children on the best route for their child to walk and bike to school;
- Bicycle Safety Training which educate children on bicycle safety and riding rules. The trainings are planned to occur annually for students grade three through six; and
- Kids on the Move! Newspaper Series is a periodic newsletter put out by Live Healthy Red Wing which includes both educational and encouragement material for children and adults regarding children walking and bicycling to school.

Encouragement – programs that make it fun for kids to walk and bike. Some of the encouragement programs that were recommended out of the two planning documents include:

- Walking Wednesdays encourages all students to walk or bike to school on **Wednesdays. It includes safe “park and walk” locations for students that live more than ¼ mile away from school as a place where their parents and buses can drop them off and they can make the remainder of the trip to school by walking or bicycling.**
- International Walk and Bike to School Day occurs every year in October and is promoted to the students and their families to have children walk and bike to school on that day. Awards and raffles may be held at the end of the event to encourage children to participate in the event.

Engineering – physical projects that are built to improve walking and bicycling conditions. The projects that are being proposed as part of this infrastructure grant qualify as engineering improvements that will help provide a safer route to both schools.

Enforcement – law enforcement strategies to improve driver behavior near schools. Some of the enforcement programs that were recommended out of the two planning documents include:

- Implementation of lower school speed zones;
- Electronic speed feedback signs to remind drivers of their speeds; and
- Law enforcement speed zone stings to ensure drivers are obeying the law.

Evaluation – strategies to help understand program effectiveness, identify improvements, and ensure program sustainability. Student Travel Tally Surveys and Parent Surveys from the National SRTS Center were completed for both affected schools. If the proposed infrastructure projects are awarded, the surveys will be completed again once all projects are constructed.

SECTION 4. PROPOSED PROJECT

4A. DESCRIBE YOUR EXISTING INFRASTRUCTURE PROBLEM, PROPOSED PROJECT AND EXPLAIN HOW IT ADDRESSES THE PROBLEM

a. Identify the project's infrastructure problem.

Twin Bluff Middle School – Existing pedestrian and bicycle related infrastructure problems associated with Twin Bluff Middle School include the following:

- The existing intersection of Pioneer Road and Twin Bluff Road is complicated and crosswalks are long due to the diagonal configuration of the intersection. The intersection has a significant skew and multiple turning movements create many possible points of conflict for pedestrians and bicyclists. The intersection is currently 4-way stop controlled with one lane of travel in each direction and no dedicated turn lanes. During the morning and afternoon peak hours, vehicles queue up creating longer than expected vehicle delays and congestion on the north leg of Twin Bluffs, where vehicles are trying to access school drop off entrances and exits. Long vehicle queues have also been reported in the eastbound direction, which result in longer than expected delays and driver impatience near the school.
- Speeding cars on Twin Bluffs road may typically be thought of as an enforcement issue and not an infrastructure issue. However, infrastructure improvements can be made along Twin Bluffs road to encourage traffic calming, especially in the area of proposed pedestrian crossings.
- The school bus entrance is located just north of the Pioneer Road/Twin Bluff Road intersection and just south of the parent drop off exit. The school bus exit is wide enough for two lanes and is often confused for an entrance and exit. The entrance needs to be reconfigured and signed so that is used only as an entrance for school buses.
- Two marked pedestrian crossings currently exist on Twin Bluff Road, north of Pioneer Road. One is located near the school bus entrance and the other is located north of the parent drop off driveway entrance. Both crosswalks have low visibility and complaints of vehicles not yielding to pedestrians.

Sunnyside Elementary School – Existing pedestrian and bicycle related infrastructure problems associated with Sunnyside Elementary School include the following:

- The existing marked crosswalk which crosses West Avenue (Twin Bluff Road becomes West Avenue to the north) located just south of the Wilkie Street and West

Avenue intersection has poor visibility due to the hill and an existing retaining wall in an adjacent **resident's yard**.

b. Were the problem(s) identified with the assessment tools?

Each of the infrastructure problems listed were identified during the walking audits as part of the development of the planning documents for each school site. Both walking audits were conducted with the SRTS Planning consultants, members of the SRTS planning committee and both school principals. In preparation for this grant application, intersection counts and crash reports were collected to further identify problems and the best solution for the Pioneer Road and Twin Bluff Road intersection.

c. Describe the infrastructure project and the types of strategies, improvements, which will be implemented on the project and how the proposed strategy (or strategies) address the problem(s) identified.

Twin Bluff Middle School – The following infrastructure improvements are the proposed projects being submitted with this grant. Each of the improvements is being proposed to mitigate the infrastructure issues previously identified within this application. Figure 4 shows the proposed recommended infrastructure improvements as identified below.

- Reconstruction of the Pioneer Road/Twin Bluff Road intersection to be two T-intersections. The western T-intersection will include the south leg of Twin Bluff Road and will be side-street stop control only on Twin Bluff Road. The eastern T-intersection will include the north leg of Twin Bluff Road and will be an all-way stop controlled intersection. The eastern T-intersection will include the addition of a southbound to westbound right turn lane and an eastbound to northbound left turn lane. Both turn lane bays will be 75-feet in length, not including the taper. The eastern T-intersection with all-way stop control will have marked pedestrian crossings on the north and east leg of the intersection. The decision not to install a crossing along the west leg of the intersection was due to the potential conflict with southbound to westbound right turners and pedestrians. Because the intersection only has 3-legs, the southbound to westbound right turn movements will only need to **look to the west (the driver's left) when making a right turn and may not look right** to see a pedestrian in the crosswalk. The proposed improvement was analyzed for traffic operations including LOS delay per vehicle and vehicle queuing during the morning and afternoon peak hours. The analysis was completed for existing year 2014 peak hour traffic and forecast year 2034 peak hour traffic. The forecast year traffic was calculated a 2% yearly increase compound annually. The results of the analysis indicate that under existing year traffic the overall intersection LOS for the new T-intersections will improve with a decrease in peak hour traffic queues. The future year traffic volumes would have a failing LOS and queuing under existing intersection conditions and would improve to overall intersection LOS A and B under the proposed intersection conditions.

TABLE 4 LEVEL OF SERVICE RESULTS FOR PIONEER RD & TWIN BLUFF RD

Scenario	Overall Intersection LOS/ Worst Movement LOS		Intersection Queues	
	AM Peak	PM Peak	AM Peak	PM Peak
Existing Intersection with Existing Traffic	B/B	A/B	EB – 114’ SB – 73’	EB-86’ SB-38’
Proposed Intersection with Existing Traffic (Western T)	A/B	A/A	WB-24’ NB-62’	WB – 39’ NB – 58’
Proposed Intersection with Existing Traffic (Eastern T)	A/A	A/A	EB Left – 63’ EB Thru – 71’ SB Rt – 60’ SB Left – 55’	EB Left – 54’ EB Thru- 63’ SB Rt – 51’ SB Left – 38’
Existing Intersection with Future Traffic	F/F	C/D	EB-470’ WB-1071’ NB-59’ SB-480’	EB-205’ WB-318’ NB-54’ SB-71’
Proposed Intersection with Future Traffic (Western T)*	A/D	A/D	WB-57’ NB-159’	WB-84’ NB-126’
Proposed Intersection with Future Traffic (Eastern T)*	B/D	A/B	EB Left – 81’ EB Thru -90’ SB Rt – 89’ SB Left – 78’	EB Left – 74’ EB Thru -82’ SB Rt – 71’ SB Left – 46’

*20 Year Future Traffic Turning Movement Volumes were calculated a 2% annual growth in traffic to ensure the proposed intersection improvement would operate under future traffic conditions.

- The proposed reconstruction of the Pioneer Road Twin Bluff Road intersection also includes the removal of parking on Pioneer road from just west of the western intersection to just east of the eastern T-intersection. Pioneer Road will also be reconstructed with a raised concrete median to the west of the western T-intersection and between the two T-intersections, up to the new eastbound left turn lane at the eastern T-intersection. The removal of parking will allow for future bike lanes once additional network connections are made. The addition of raised center medians has been shown to create a traffic calming effect on corridors where speeding is identified as an issue.
- Improved pedestrian crosswalks are being proposed at several locations near the Twin Bluff Middle School. Crosswalks are proposed at the south leg of the western T-intersection and the north and east leg of the eastern T-intersections. Each of these crosswalks are protected by stop sign control for vehicular traffic. These crossings at the new T-intersections will reduce the problems encountered at the existing Pioneer and Twin Bluff Road intersection crossing where sight issues and long crossings due to the intersection skew occur.

- Three other pedestrian crossing's additions or improvements are being proposed for the Twin Bluff Middle School area. Each of the three crossings is at a mid-block location and is proposed to be installed with a Rectangular Rapid Flashing Beacon (RRFB) to improve the safety of the crossing. A RRFB has two rapidly and alternatively flashing rectangular yellow indications attached to supplement the pedestrian warning or school crossing sign at a crosswalk. The irregular flash pattern is similar to emergency flashers on police vehicles with an **alternative "wig-wag"** flashing sequence with a pulsing light source. The beacon would be activated manually by a pedestrian and will only flash when activated. This keeps motor vehicle drivers from becoming accustomed to the beacon always flashing, and helps better bring their attention to the flashers when they are activated. The RRFB is one **of the safety measures identified within Minnesota's Best Practices for Pedestrian/Bicycle Safety Manual**. The manual notes that research on the RRFBs indicates **promising results with vehicle's yielding to pedestrians increasing from 16% to 78%** with installation of the RRFB. The three locations being proposed to install the RRFB marked crossings in addition to school crossing signs are at the following:

1. Pioneer Road – crossing of Pioneer Road approximately 50-feet east of the western T-intersection with Twin Bluff Road. This crossing will include a raised median between the two directions of traffic. The addition of the RRFB and raised medians should provide a safer crossing to pedestrians wishing to cross north/south across Pioneer Road within the vicinity of the school.
2. Twin Bluff Road – crossing of the north leg of the eastern T-intersection, located between the school bus entrance and parent drop off exit. This is an existing crossing that is currently on the south side of the bus entrance that will be moved to the north side of the entrance so that it is between or mid-block between the two access points. The crossing is being enhanced with the installation of the RRFBs, striping and school crossing signage. The bus driveway entrance will also be narrowed to delineate it as an entrance only. This will result in a shortened pedestrian crossing of the bus driveway entrance.
3. Twin Bluff Road – existing crossing of the north leg of the eastern T-intersection, located just north of the parent drop off entrance. This crossing **currently exists at this location but will be supplemented with the RRFB's** due to complaints about drivers yielding to pedestrians at this location.

Sunnyside Elementary School – The following infrastructure improvements are the proposed projects being submitted with this grant. Each of the improvements is being proposed to mitigate the infrastructure issues previously identified within this application. Figure 5 shows the proposed recommended infrastructure improvements as identified below.

- Eliminate the existing crosswalk at West Avenue and Wilkie Street intersection and relocate it further north on West Avenue, just south of the bus access on West Avenue. This will align the crosswalk directly with an east/west sidewalk that provides direct access to Sunnyside Elementary School. The new crosswalk would be striped and signed as a mid-block school crosswalk and will include the pedestrian activated RRFB. It is also proposed that parking be eliminated at the location of the crosswalk and curb extensions be constructed to reduce the street width that pedestrians would be crossing at this location. This new crossing location will eliminate the sightline issues that are occurring with the existing crossing at West Avenue and Wilkie Street. It will also act as a traffic calming improvement aimed at reducing vehicle speed on West Avenue.

The recommended improvements proposed for each school site are shown in Figures 4 and 5. This includes plan view drawings and typical sections of proposed roadway section for Pioneer Road.

d. Discuss what other strategies were considered to address the problems?

When reviewing potential improvements to the Pioneer Road and Twin Bluff Road intersection improvements, several other options were evaluated in regards to intersection turn lanes and control at both the west and east T-intersections. These alternatives included the review of no additional turn lanes, stop control at the side streets only for both T-intersections and all-way stop control at both T-intersections. The recommended alternative was chosen because it gave the best overall network, intersection and individual movement LOS and indicated that it handled the vehicle queuing better than any other alternatives.

When reviewing options for improving safety at the mid-block pedestrian crossings, the City of Red Wing considered installing Pedestrian Hybrid Beacon Systems. However, in reviewing the minimum requirements in the MnMUTCD, the minimum thresholds for pedestrian crossings in the peak hours were not met. The cost of the Pedestrian Hybrid Beacon Systems is also about 5 to 6 times more than the RRFB systems. Using the lower cost/high effective beacons allowed them to apply for installation of four RRFB systems within the grant application as compared to one Pedestrian Hybrid Beacon System.

e. What resource(s) or studies support the proposed implementations (if applicable)?

All of the proposed infrastructure improvements are supported by the Safe Routes to School Planning document for each school site. Other resources that support many of the recommended infrastructure improvements such as medians and crossing islands, curb extensions, and the rectangular rapid flashing beacon are identified in the September 2013 *Minnesota's Best Practices for Pedestrian/Bicycle Safety* and the ITE *Safe Routes to School Briefing Sheets*.



**2014 Minnesota Safe Routes to School
 Infrastructure Grant Application**

**Sunnyside Elementary
 School Proposed Improvements**

Red Wing, Minnesota
 January 28, 2013

Figure 5

f. What guidance(s) were used in the design of the proposed project? Guidance used could include but are not limited to: the MnMUTCD, AASHTO guides, State-Aid Standards, or the MnDOT Bikeway Facility Design Manual.

The following guidance documents were used in the preparation of the planning level design for the proposed infrastructure projects: 1) MnMUTCD, 2) Minnesota's Best Practices for Pedestrian/Bicycle Safety, and 3) AASHTO Design guidelines.

4B. EXPLAIN HOW THE PROJECT IS READY FOR CONSTRUCTION IN 2015 OR 2016. SELECT THE YEAR YOU WOULD PREFER TO HAVE YOUR PROJECT FUNDED AND CONSTRUCTED.

The City of Red Wing would prefer to have their project constructed in 2015 to improve the pedestrian facilities as soon as possible. This schedule also works best for the City in terms of fitting the project into their overall Capital Improvement Program. Planning level assessment for the project does not indicate the need to obtain private right of way or any major environmental impacts.

a. Describe any field survey or field assessments of the project location?

The City of Red Wing has existing base files for all of the proposed project areas. A topographic survey would likely be needed for the reconstruction of the Pioneer Road and Twin Bluff Road intersection. Since it is a new alignment, the reconstruction of the Twin Bluff Road legs of the intersection would definitely be needed. Depending on grade changes needed for the Twin Bluff Road intersection, it is likely that Pioneer Road would need complete reconstruction and this is how the cost estimate was developed at this location. All other improvements would be a pavements signing and striping exercise.

All of the proposed improvement locations have logical termini to make infrastructure improvements to an existing pedestrian crossing, a relocated pedestrian crossing or an existing intersection. The current location of the proposed project is well maintained and meets ADA compliance. The proposed new infrastructure improvements will only improve the ability to maintain the bicycle/pedestrian facilities and will all be installed with ADA compliance.

b. What are the right of way needs for the proposed project?

No right of way needs have been identified for the proposed infrastructure improvements.

c. Are there environmental impacts (wetland, Section 4(f), historic properties, endangered species, etc.)?

At this time, there have been no environmental impacts identified with the project including no impacts to existing wetlands, Section 4(f) or parkland properties, historic properties or

endangered species. If awarded the grant, the City of Red Wing is prepared to complete the necessary environmental documentation required for a Federal-aid funded project.

d. Is this project controversial in any way that would impact support and timeline for completion?

During the development of the SRTS Planning documents including the infrastructure recommendations, no controversial comments were brought forward by the general public or any other project stakeholder.

e. Have private and public owners impacted by the project been notified?

At this time, there are no property impacts outside of the existing public right of way. Therefore, no private owners are directly impacted by the proposed infrastructure improvements. All public owners including the City, County and affected Schools have been notified of the project, and letters of support for the project by all three entities are included with this grant application in Appendix A.

f. Identify additional public participation hearings or events for the specific proposed project.

Approval for project support and local funding match were presented and discussed at City Council meetings on January 13, 2014 and January 27, 2014. The council meetings for the City of Red Wing are open to the public. The project was also discussed at public meetings held by the Red Wing School Board on January 14, 2014 and by the Red Wing Advisory Planning Commission on January 21, 2014. If the project is awarded, an additional public meeting will likely be held during development of the project's environmental documentation.

g. Describe the community's or sponsor's experience in delivering federal transportation projects (if applicable).

The City of Red Wing has demonstrated their ability to successfully deliver federal aid transportation projects. Some of the federally funded projects that the City has completed to date include the following:

- 1993 – City Wide Bituminous Overlay;
- 1997 – Burnside Bike Trail;
- 2002 – Hay Creek Featherstone Road/Riverfront Bike Trail;
- 2003 – Bench Street North Realignment/North Service Drive Bituminous Overlay; &
- 2008 – SRTS Sidewalk & Walking Trail (Sunnyside and Twin Bluff School areas)

SECTION 5. PROJECT COSTS

The estimate in Table 4 reflects the cost estimate developed for the construction of the proposed infrastructure improvement projects as outlined within this grant application. The majority of the unit prices were taken from 2012 MnDOT prices and inflated 4% compound annually out to the proposed construction year 2015. The total project cost of \$528,575.00 includes construction costs, design and construction engineering fees and contingencies. Although the grant is eligible for 80% Federal Funding with a 20% Local Match, the City of Red Wing is only requesting 65% of the total project cost in SRTS Federal aid at \$343,575.00 with the remaining 35% Local Match of \$185,000 to be paid for by the City of Red Wing through their General Fund. **The City of Red Wing's City Council approved and committed to** this funding split at their regular council meeting on January 17, 2014. The signed resolution is included in Appendix A.

TABLE 5 PROJECT COST ESTIMATE

ITEM	UNIT	UNIT PRICE	QUANTITY	TOTAL COST
TWIN BLUFF & PIONEER				
MOBILIZATION	LS	\$6,000.00	1.0	\$6,000.00
TRAFFIC CONTROL	LS	\$3,000.00	1.0	\$3,000.00
REMOVAL - ASPHALT PAVEMENT	SY	\$5.87	5,541.2	\$32,526.97
REMOVAL - CURB & GUTTER	LF	\$2.97	1,878.7	\$5,579.74
REMOVAL - CONC SIDEWALK	SY	\$7.00	128.4	\$898.88
SALVAGE TOPSOIL	CY	\$6.50	173.4	\$1,127.05
12" AGGREGATE BASE CL V	TON	\$14.00	2,662.0	\$37,268.19
6" ASPHALT PAVEMENT (SP 12.5)	TON	\$78.00	1,419.7	\$110,739.78
RAISED CONC MEDIAN	SY	\$62.00	96.2	\$5,963.71
CONC CURB & GUTTER	LF	\$13.80	2,088.3	\$28,818.54
CONC SIDEWALK 5'	SF	\$4.50	3,332.9	\$14,998.05
ADA TRUNCATED DOME RAMP	SF	\$42.00	168.0	\$7,056.00
RECT. RAPID FLASHING BEACON	EA	\$15,000.00	3.0	\$45,000.00
REFLECTIVE SIGN SHEETING	SF	\$26.00	236.8	\$6,156.80
SEEDING & MULCHING	SY	\$1.50	3,303.8	\$4,955.68
24" ZEBRA CROSSWALK (EPOXY)	SF	\$4.50	240.0	\$1,080.00
24" STOP BAR	LF	\$7.00	105.0	\$735.00
12" CROSSWALK	LF	\$4.00	210.0	\$840.00
8" PAVEMENT STRIPE (EPOXY)	LF	\$1.00	155.0	\$155.00
4" PAVEMENT STRIPE (EPOXY)	LF	\$0.50	3,225.0	\$1,612.50
			SUBTOTAL	\$314,511.90
SUNNYSIDE RRFB CROSSING				
REMOVAL - ASPHALT PAVEMENT	SY	\$5.87	137.8	\$808.89
REMOVAL - CURB & GUTTER	LF	\$2.97	105.0	\$311.85
CONC CURB & GUTTER	LF	\$13.80	125.0	\$1,725.00
ADA TRUNCATED DOME RAMP	SF	\$42.00	42.0	\$1,764.00
RECT. RAPID FLASHING BEACON	EA	\$15,000.00	1.0	\$15,000.00
REFLECTIVE SIGN SHEETING	SF	\$26.00	44.0	\$1,144.00
24" ZEBRA CROSSWALK	SF	\$4.50	84.0	\$378.00
			SUBTOTAL	\$21,131.74
COMBINED PROJECTS SUBTOTAL				\$335,643.64
3 YEARS OF INFLATION @ 4%/YR*				\$377,553.44
DESIGN AND CONSTRUCTION ENGINEERING (25%)				\$94,388.36
CONTINGENCY (15%)				\$56,633.02
TOTAL ESTIMATED COST				\$528,574.82

*Most Unit Prices are based on MnDOT 2012 Bid Prices

SECTION 6. EVALUATION

If this proposed project is awarded to the City of Red Wing, the City has agreed to complete the student tally and parent surveys from the National Safe Routes to School website after implementation surveys for both the Twin Bluff Middle School and Sunnyside Elementary School within one year of project completion.

Appendix A
January 28, 2014

Appendix A

SPONSORING AGENCY RESOLUTION, RESOLUTION AGREEING TO MAINTAIN FACILITY AND
LETTERS OF CONSURENCE

RESOLUTION NO. 6643

RESOLUTION IDENTIFYING THE CITY OF RED WING AS THE SPONSORING AGENCY AND AGREEING TO MAINTAIN THE FACILITY RELATED TO A 2014 SAFE ROUTES TO SCHOOL INFRASTRUCTURE IMPLEMENTATION GRANT APPLICATION

WHEREAS, the Minnesota Department of Transportation (MnDOT) released a solicitation notice seeking applicants for federal Safe Routes to School (SRTS) infrastructure implementation grants; and

WHEREAS, in 2012, the City of Red Wing received a grant from the MnDOT for the School Planning Assistance Program for Twin Bluff Middle School and Sunny Side Elementary School; and

WHEREAS, a broad based SRTS Planning Committee made up of representatives of the City of Red Wing, Red Wing School District, Live Healthy Red Wing (local active living coalition), and Goodhue County have been participating in the development of the two SRTS plans; and

WHEREAS, in the Spring of 2013 the City of Red Wing received a MnDOT Non Infrastructure Implementation Grant to help support SRTS programs at Twin Bluff Middle School and Sunnyside Elementary School; and

WHEREAS, the City of Red Wing and its partnership SRTS agencies and organizations have developed an application for school infrastructure improvements identified in the SRTS plans; and

WHEREAS, the SRTS Infrastructure Implementation Grant program requires a resolution from an eligible State Aid sponsoring agency that acknowledges that it is willing to be the project sponsor knowing full well that such sponsorship includes a willingness to secure and guarantee the local share of costs associated with this project and responsibility for seeing this project through to its completion, with compliance of all applicable laws, rules and regulations; and

WHEREAS, the Federal Highway Administration (FHWA) requires that states agree to design, construct, operate and maintain facilities constructed with federal transportation funds for the useful life of the improvement and not change the use of right of way acquired without prior approval from the FHWA; and

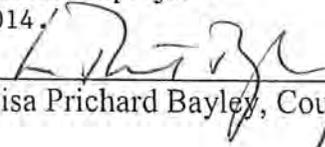
WHEREAS, Transportation enhancement projects receive federal funding from the reauthorization of the Surface Transportation Program (STP) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) of 2005; and

WHEREAS, the MnDOT has determined that for projects implemented with SRTS funds, this requirement should be applied to the project sponsors.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Red Wing, that:

1. The City of Red Wing act as sponsoring agency for the 2014 SRTS infrastructure implementation grant project located within the City of Red Wing and acknowledges herewith that it is willing to be the project sponsor knowing full well that such sponsorship includes a willingness to secure and guarantee the local share of costs associated with this project and responsibility for seeing this project through to its completion, with compliance of all applicable laws, rules and regulations; and
2. The City Engineer is hereby authorized to act as agent on behalf of the City of Red Wing; and
3. The City of Red Wing hereby agrees to assume full responsibility for the design, construction, operation and maintenance of property and facilities related to the aforementioned transportation enhancement project.

Adopted this 27th day of January, 2014.



Lisa Prichard Bayley, Council President

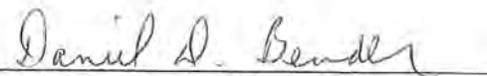
Attest:



Kathy Seymour Johnson, City Clerk

(seal)

Presented to the Mayor at 10:14 p.m. on this 27th day of January, 2014.
Approved this 27th day of January, 2014.



Daniel D. Bender, Mayor



January 30, 2014

Mao Yang
State Aid Division
395 John Ireland Blvd.
Mail Stop 500
St. Paul, MN 55155

Dear Mao Yang:

Please accept this letter as my concurrence of the proposed Safe Routes to School 2014 Infrastructure Grant application which will allow the City of Red Wing and its partner agencies to improve the safety for pedestrians and bicyclist near Twin Bluff Middle School and Sunnyside Elementary School.

The City of Red Wing's SRTS request supports recommendations developed in two plans that were completed in August of 2013 and funded by a grant received from the Minnesota Department of Transportation (MnDOT) Safe Routes to School Planning Assistance Program. Both plans incorporated recommendations related to the 5Es involving Education, Encouragement, Engineering, Enforcement, and Evaluation. Key issues that were identified in the Twin Bluff Middle School SRTS and the Sunnyside Elementary SRTS plans include:

- The intersection of Pioneer Road and Twin Bluff Road, where there is a significant skew and multiple turning movements that create long crossings and many points of conflict.
- Need for improvement to several mid-block crossings with low compliance of drivers yielding to pedestrians at the crosswalks.
- High motorist speed on Twin Bluff impacting both schools.
- A number of internal circulation issues at Twin Bluff Middle School that create conflict between pedestrians, bicyclist, bus drop off and student drop off from vehicles.
- A blind spot at the intersection of Twin Bluff Road and Wilkie Street that impacts children crossing to Sunnyside Elementary School.

This SRTS Infrastructure grant application will address all of the key issues listed above, except the internal circulation issue at Twin Bluff Middle School and our planning committee is working with the Red Wing School District and their facilities planning efforts to address these in the near future.

If the City of Red Wing is selected to receive this grant, we will work with MnDOT, Goodhue County, the Red Wing School District, and our community partner (Live Healthy Red Wing) on the coordination and construction of the proposed improvements. On behalf of the City of Red Wing, I would like to thank MnDOT for making Safe Routes to School grant available.

Please feel free to contact me with any questions at Jay.Owens@ci.red-wing.mn.us or 651/385-3625.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jay Owens", is written over a horizontal line.

Jay Owens, P.E.
City Engineer

315 West 4th Street
Red Wing, MN 55066
Website: www.red-wing.org
Phone: 651.385.3600
Fax: 651.388.9608



Greg Isakson, P.E.
Public Works Director/County Engineer
Goodhue County Public Works Department
www.co.goodhue.mn.us

2140 Pioneer Road
P.O. 404
Red Wing, MN 55066
Office (651) 385.3025
greg.isakson@co.goodhue.mn.us

January 29, 2014

Mao Yang
State Aid Division
395 John Ireland Blvd.
Mail Stop 500
St. Paul, MN 55155

RE: Red Wing SRTS Application Letter of Concurrence

Dear Mao Yang,

I understand that the City of Red Wing is applying for a Safe Routes To School (SRTS) grant for improvements to the intersection of Pioneer Road and Twin Bluffs Road in front of the Twin Bluffs Middle School. One segment of Pioneer Road is also designated as Goodhue County State Aid Highway 66. The existing roads intersect at a severely skewed angle that causes additional complications for drivers to process when traffic levels spike with school buses and parents dropping off (or picking up) their kids. Middle school aged pedestrians crossing the intersection further increases the confusion and potential conflict at this intersection.

We agree that improvements can be made at this skewed intersection to improve the safety of students walking to school. If the City of Red Wing's SRTS project is selected for funding, we will work with the City to finalize their intersection design and to implement these improvements.

Sincerely,

Greg Isakson, P.E.
Goodhue County Public Works Director /County Engineer



RED WING POLICE DEPARTMENT
ROGER D. POHLMAN, CHIEF OF POLICE

January 29, 2014

Mao Yang
State Aid Division
395 John Ireland Blvd., Stop 500
St. Paul, MN 55155

RE: Support for Safety Improvement in the Vicinity of Twin Bluff Middle School

Dear Mao Yang,

I am writing in support of the proposed Safe Routes to School 2014 Infrastructure Grant application for the City of Red Wing to improve traffic safety for pedestrians, bicyclists and the motoring public in the vicinity of Twin Bluff Middle School and Sunnyside Elementary School.

The intersection of Pioneer Road and Twin Bluff Road is a key crossing area for students in our community, traveling from the south end of Red Wing to the Middle School, Elementary School and Downtown areas. The school crosswalks in this area are presently supported by antiquated flashing yellow lights and signage. The intersection itself is at an angle (non-perpendicular approach) with shortcuts on the north and south side, creating added blind spots and visibility concerns. To support my concern, this past September I fielded a call from a concerned parent that witnessed a squad car having a near miss with pedestrians in the south school crossing area. Upon checking the vehicle GPS system, we identified the officer and squad car in question. The officer stated that due to the angle of approach and vehicle traffic in the area, he was unable to see the pedestrians until the very last moment and was fortunate to not hit them with his vehicle. This incident involving a marked patrol vehicle and my experience in law enforcement leads me to believe that there are other near misses that we are not aware of. Therefore, my Department fully supports the proposed improvements to this intersection and school area.

Thank you for your consideration of our application and if you have any further questions or comments regarding this very important Safe Routes to School grant application.

Sincerely,

Roger D. Pohlman
Chief of Police

January 15, 2014

Chris Palmatier
Twin Bluff Middle School
2120 Twin Bluff Road
Red Wing, MN 55066



To Whom It May Concern,

My name is Chris Palmatier, principal at Twin Bluff Middle School in Red Wing, Minnesota, and I am writing to extend my full support to the 2014 Safe Routes to School Infrastructure Grant application.

This grant opportunity offers a way for our school to ensure safety of all our students—especially those who walk and bike—at a time when it is needed most. Over the last four years, the number of walkers and bikers to our middle school has increased significantly. In 2009, the bike racks were almost empty; today, they are full in fall and spring and many students walk year-round.

Safety, however, continues to be an issue. Every weekday morning and afternoon I stand outside our building greeting students and directing cars so our parking lot is safer for kids. I see firsthand the congestion caused by traffic at the intersection of Pioneer and Twin Bluff Roads, the potential dangers at our mid-street crossings, and the risk caused by high school students and others as they rush down Pioneer to our nearby high school at the same time middle school students and families are arriving and leaving our school property.

Over the last few years, we at Twin Bluff Middle School have worked closely with the City of Red Wing and Live Healthy Red Wing, and been a member of the local Safe Routes to School team. As partners in a 2012 SRTS Planning Grant, we were all able to collaborate with Alta Planning to look at specific solutions to our traffic safety concerns. As partners in a 2013 SRTS Non-Infrastructure Grant, we are currently working with LHRW on walking and biking to school maps, park-and-walk locations, bike safety education, a crossing guard pilot program, a Fix-a-Bike program for at-risk students, and a publicity-enforcement campaign this spring. Our school administrators and teachers encourage walking and biking to school and know it is a key way to get students ready to learn each day.

Until we change the landscape of our school's streets and intersections, however, we will continue to battle unsafe conditions.

For all these reasons, I pledge my full support to this grant request and ask that you fund this project for the safety of our Red Wing students. Thank you for your time and consideration.

Sincerely,

A handwritten signature in black ink that reads "Chris Palmatier". The signature is written in a cursive style with a large, stylized "A" at the end.

Chris Palmatier
Principal, Twin Bluff Middle School



January 29, 2014

Mao Yang
State Aid Division
395 John Ireland Blvd.
Mail Stop 500
St. Paul, MN 55155

Dear Mao Yang:

Please consider this letter my full endorsement of the proposed Safe Routes to School 2014 Infrastructure Grant application which will allow the City of Red Wing and its partner agencies to improve the safety for pedestrians and bicyclist near Twin Bluff Middle School and Sunnyside Elementary School.

The City of Red Wing's SRTS request supports recommendations developed in two plans that were completed in August of 2013 and funded by a grant received from the Minnesota Department of Transportation (MnDOT) Safe Routes to School Planning Assistance Program. Both plans incorporated recommendations related to the 5Es involving Education, Encouragement, Engineering, Enforcement, and Evaluation. The City of Red Wing has been a full partner in the development of these plans, along with the Red Wing School District and Live Healthy Red Wing, a coalition of agencies, businesses, and organizations that are committed to making active living the easy choice. This SRTS Infrastructure project will address a number of key issues that have been identified in the two SRTS plans.

The Red Wing City Council is fully committed to the projects listed in this grant application. They discussed the need to improve the Twin Bluff Road/Pioneer Road intersection at several meetings and adopted Resolution No. 6643 that commits the City to be the project sponsor and maintain the improvements. Importantly, the City Council has committed 35 percent of the funding needed for the projects (over and above the required 20 percent match) which is an indication of the City's strong commitment.

If the City of Red Wing is selected to receive this grant, we will work with MnDOT, Goodhue County, the Red Wing School District, and our community partner (Live Healthy Red Wing) on the coordination and construction of the proposed improvements. Thank you very much for your consideration.

Please feel free to contact me with any questions at Kay.Kuhlmann@ci.red-wing.mn.us or at 651/385-3612.

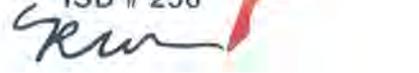
Sincerely,

Kay Kuhlmann
City Council Administrator

January 15, 2014

Karsten Anderson
Superintendent, Red Wing Public Schools
2451 Eagle Ridge Drive
Red Wing, MN 55066

Red Wing
Public Schools
ISD # 256



To Whom It May Concern,

Please accept this letter as my concurrence and full support of the proposed 2014 Safe Routes to School Infrastructure Grant application.

We as a district place high priority on our children walking and biking to school. We believe that getting our students active before, during, and after school helps them become better students and healthier individuals, and ensuring they have safe ways to get to and from school is a priority we take very seriously.

For those reasons, we are asking for your help. Key roads and intersections around Twin Bluff Middle School and Sunnyside School are often dangerous areas that Red Wing has struggled with for decades. Now the number of bicyclists and pedestrians is growing, and the way our schools are divided by age has also changed. Twin Bluff Middle School today includes fifth and sixth graders, and Sunnyside now has all-day kindergarten for every child so more students (and younger students) are traveling on the roads and through these intersections than ever before. This grant would allow us to finally build a safe landscape that hundreds of students and families use every day.

Our district is committed to SRTS work. We were pleased and honored to have been a part of MnDOT's 2012 SRTS Planning Grant and 2013 Non-Infrastructure Grant. Our district has worked with Live Healthy Red Wing and the City of Red Wing to collect data through student counts, traffic counts, and parent surveys. We've encouraged our students through walking programs and incentives. We're also actively working with the community and elected officials to add Safe Routes to School best practices and policies to our city documents over the course of 2014.

As superintendent of Red Wing School District #256, I have been very involved in the work of our local Safe Routes to School team, as has my Director of Building and Grounds, Kevin Johnson, and principals Chris Palmatier and Patti Roberts. As a district we commit to educating our students and families about the changes being made. We will also ramp our programming and encouragement of walking and biking throughout 2014 and 2015 through park-and-walk locations, bike education, a publicity campaign, and more.

I thank you for your consideration of this 2014 SRTS Infrastructure Grant application. I hope that together we can make Red Wing a safer place for all our students. If you have any questions, please contact me at 651-385-4500 or klanderson@rwps.org.

Sincerely,

Karsten Anderson
Superintendent, Red Wing Public School District

January 15, 2014

Patti Roberts
Sunnyside Elementary
1669 Southwood Avenue
Red Wing, MN 55066

Red Wing
Public Schools
ISD # 256



To Whom It May Concern,

As the principal of Sunnyside Elementary School, I pledge my wholehearted support to the City of Red Wing's 2014 Safe Routes to School Infrastructure Grant.

Sunnyside School is home to 486 kindergartners, first graders, and second graders. It is also a bus hub for more than 150 second, third, and fourth graders who live within a mile of our school and often walk or bike each day. Sunnyside sits in a busy residential area on roads used by the whole community. It's within walking distance of downtown, multiple neighborhoods, and Twin Bluff Middle School, and with our young student population, we have many parent drivers, numerous school busses, busy parking lots, and unsafe mid-block crossings.

At Sunnyside we are committed to teaching our children healthy habits early, and that includes encouraging biking and walking to school and providing safe routes for each student. Over the last few years, we have worked with multiple partners through our local SRTS team, Live Healthy Red Wing, and the City of Red Wing, and we've made important safety improvements. We added sidewalks to two adjacent neighborhood streets through a former SRTS grant. We changed our pick-up and drop-off procedures and built a sidewalk from our playground to a street-side parking area. We evaluated our current traffic issues and reviewed possible solutions through a 2012 SRTS Planning Grant. And this year, through a 2013 SRTS Non-Infrastructure Grant, we are working with LHRW to create walking and biking to school maps, park-and-walk locations, bicycle education, and a publicity-enforcement campaign in April. We also currently fund two adult crossing guards daily and hold a Walking Wednesday program that continues to energize our students and staff each week.

All this planning, evaluation, and preparation has shown us three things: 1) Red Wing students want to walk and bike to school; 2) Safety has increased but because of where Sunnyside is located, the age of our students, and the high rate of traffic, we need to do more; 3) We must make physical changes to the roads and crossings around our building to ensure the safety of all our students and families.

As principal of Sunnyside for the last 14 years, I know that students who get activity are more ready to focus and learn in the classroom. Walking and biking to school helps everyone—children, families, school staff, and the community. I ask that you fund the 2014 Safe Routes to School Infrastructure Grant to Red Wing so all our students grow up safe, active, and healthy.

Sincerely,



Patti Roberts
Principal, Sunnyside Elementary



**GOODHUE COUNTY
HEALTH AND HUMAN SERVICES
PUBLIC HEALTH DIVISION**

509 W. 5th St. ☐ Red Wing, MN 55066
651/385-6100 • Fax 651/385-6472

"PROMOTE, PRESERVE AND PROTECT THE HEALTH OF OUR COMMUNITIES"

January 20, 2014

To Whom It May Concern,

As the Community Health Specialist at Goodhue County Health and Human Services, it is my pleasure to write a letter of support for the Safe Routes to School Infrastructure Grant. This grant funding would accomplish tackling key problem areas specifically along school walking and biking routes.

Because evidence based research shows that environment influences behavior, it is important for Twin Bluff and Sunnyside schools to have a physical environment surrounding them that complements the programming and policy work that Live Healthy Red Wing and the Red Wing School District have done. Goodhue County Health and Human Services has been working with Live Healthy Red Wing to create and encourage physical activity throughout the city of Red Wing for many years.

Goodhue County Health and Human services is committed to working with Live Healthy Red Wing, the City of Red Wing, the Red Wing School District and other community partners to provide easy access to physical activity through safe routes to school.

Sincerely,

Ashlyn Christianson

Goodhue County Health and Human Services
Community Health Specialist

January 16, 2014

Mao Yang
State Aid Division
395 John Ireland Blvd.
Mail Stop 500
St. Paul, MN 55155

Dear Mao Yang,

My name is Pete Willi and I am writing today to pledge my support and commitment to the City of Red Wing's Safe Routes to School 2014 Infrastructure Grant for street and crosswalk improvements around Sunnyside Elementary and Twin Bluff Middle School.

I am a Red Wing firefighter, a board member of the United Way, and a member of Live Healthy Red Wing's Safe Routes to School team here in Red Wing. In all of these facets, I work to make Red Wing a better, safer place where every child can reach his or her greatest potential.

I see firsthand what happens when intersections and roads are not a safe place for children. So giving children safe ways to get to and from school is a priority – for me and for the collaborative efforts I belong to.

Red Wing has made great strides in improving the safety of its children and teens, and helping families see the importance of getting active before and after school. But the areas around Sunnyside and Twin Bluff schools are in dire need of help. With your support, we can make changes that will dramatically increase safety and physical activity.

Through my work as a public safety employee and a community volunteer and advocate, I pledge my support and time in continuing to help Red Wing families understand the benefits of walking and biking to school, learning how to do it safely, and teaching that it's important for healthy bodies and minds.

I ask that you approve this 2014 Safe Routes to School Infrastructure Grant request to Red Wing and help us increase the physical activity and safety of our students.

Sincerely,

A handwritten signature in black ink, appearing to read 'Pete Willi', with a stylized flourish at the end.

Pete Willi

January 16, 2014

To Whom It May Concern,

Please accept this letter as my full support of the proposed 2014 Safe Routes to School Infrastructure Grant application for street and intersection improvements around Sunnyside Elementary and Twin Bluff Middle School in Red Wing, Minnesota.

Obesity was the top assessed need in the recent Mayo Clinic Health System Community Health Needs Assessment for Red Wing. We understand the need to encourage more physical activity for all our youth, and safe intersections and safe routes in school are keys in helping us achieve that goal.

I thank you for your consideration of this 2014 SRTS Infrastructure Grant application and lend our full support. I hope that together we can make Red Wing a safer place for all our students.

Sincerely,



Tom Witt M.D.
Chief Executive Officer

United Way of
Goodhue, Wabasha &
Pierce Counties

413 West Third Street
Red Wing, MN 55066
tel 651.388.6309
www.uw-gwp.org



January 30, 2014

Grant Review Committee
2014 Safe Routes to School Infrastructure Grant

Dear Grant Review Committee:

I am Maureen Nelson, Executive Director of the United Way of Goodhue, Wabasha, and Pierce Counties. The health of the communities we serve is one of three focus areas of concern to our United Way, and we know that towns are healthier if there are safe, easy places for residents to walk and bike. For that reason we are a committed partner with Live Healthy Red Wing and the work they do so well. This grant will enable Red Wing to reach its goals of making streets safer for children getting to schools and promoting outside activity for our young people. These are worthy goals that United Way strongly supports.

At United Way of Goodhue, Wabasha and Pierce Counties we work hard to support programs that help our children grow into productive, contributing adults. We feed and clothe them. We work with schools to ensure they have wonderful educational opportunities. But we know that none of that is helpful if a child is unhealthy. Activity and movement are key to a child's health, academic success and happiness and being able to walk, skip, run or even hop to school safely is vital. This grant will enable our children to do just that.

There is a strong commitment from this United Way to support this project. We will act as one avenue of communication to the community in encouraging children and their parents to get out and walk or bike to school.

If you have any questions regarding this letter of support, feel free to contact me at 651-388-6309 or Maureen.nelson@uw-gwp.org.

Sincerely,

A handwritten signature in cursive script that reads "Maureen Nelson".

Maureen Nelson
Executive Director
United Way of Goodhue, Wabasha & Pierce Counties

January 12, 2014

Mao Yang
State Aid Division
395 John Ireland Blvd.
Mail Stop 500
St. Paul, MN 55155



Dear Mao Yang:

Please accept this letter as Live Healthy Red Wing's concurrence and full support for the 2014 Safe Routes to School Infrastructure Grant for improvements around Twin Bluff Middle School and Sunnyside Elementary in Red Wing.

Live Healthy Red Wing is a collaborative made up of businesses, non-profits, schools, and city and county agencies working together to make it easier to eat healthy and get active every day. We focus on changing policies, making physical improvements to the environment, and creating a culture of active, connected citizens so our community is a healthier place to live.

Safe Routes to School is a focus we care deeply about and have been working on since our inception five years ago. We commit to being the key organization that educates, encourages, and implements initiatives that increase walking and biking to school.

Through a 2012 SRTS Planning Grant, Red Wing worked together with designers on a plan for Twin Bluff and Sunnyside that will increase safety and physical activity. Through a 2013 SRTS Non-Infrastructure Grant, LHRW is working closely with Twin Bluff and Sunnyside on a variety of initiatives: walk and bike to school maps, bike education classes, a crossing-guard pilot program, a publicity campaign that includes police enforcement, a Fix a Bike program for at-risk middle school youth, and piloting a bus hub system that encourages all children to walk and bike more before and after school.

LHRW has also worked with the school district to organize and convene our local Safe Routes to School task force that includes the superintendent, principals, parents, city engineer, city planner, city council member, county healthy communities specialist, and LHRW members (our police force and school board are the newest members).

Over the years, we have done numerous student tallies, parent surveys, and observations in different seasons. We've conducted interviews and videotaped traffic situations. We have reached out in talking with staff, administrators, parents, kids, law enforcement, and other community partners. We launched a book read that started the community talking about giving children more freedom to be active outdoors, including walking and biking to school. And, we helped create more neighborhood trails so walking and biking home from school is safe and fun.

We ask that you approve Red Wing's 2014 Safe Routes to School Infrastructure Grant. Red Wing feels a strong commitment to helping children walk and bike to school safely, and we are committed to continue working together to make this community a safe, active, healthy place to grow.

Thank you for your time and consideration.

Sincerely,

A handwritten signature in black ink that reads "Michelle Leise". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Michelle Leise,
Live Healthy Red Wing Coordinator

Live Healthy Red Wing:

Pam Horlitz, Mayo Clinic Health System-Red Wing
Dave Borgen, Director, Red Wing Community Recreation
Ashlyn Christianson, Healthy Communities Specialist, Goodhue County Health & Human Services
Laurel Achen, Director of Benefits and Wellness, Red Wing Shoe Company
Brian Peterson, Director of Planning, City of Red Wing
Karsten Anderson, Superintendent, School District #256
Jason Jech, Director, Environmental Learning Center
Pete Willi, Board Member, United Way
Becky Alsop, Associate Dean of Academics, Southeast Technical College

Appendix B
January 28, 2014

Appendix B

SRTS PARENT SURVEYS AND STUDENT TALLY SURVEYS

Parent Survey Report: One School in One Data Collection Period

School Name: Twin Bluff Middle School

Set ID: 10700

School Group: Red Wing SRTS

Month and Year Collected: June 2013

School Enrollment: 642

Date Report Generated: 12/03/2013

% Range of Students Involved in SRTS: Don't Know

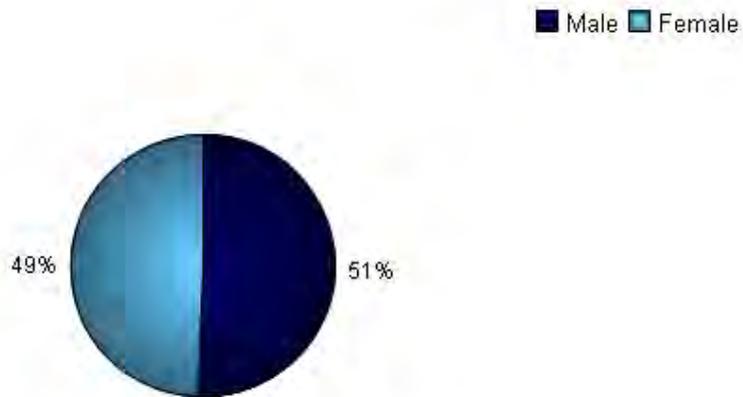
Tags:

Number of Questionnaires Distributed: 149

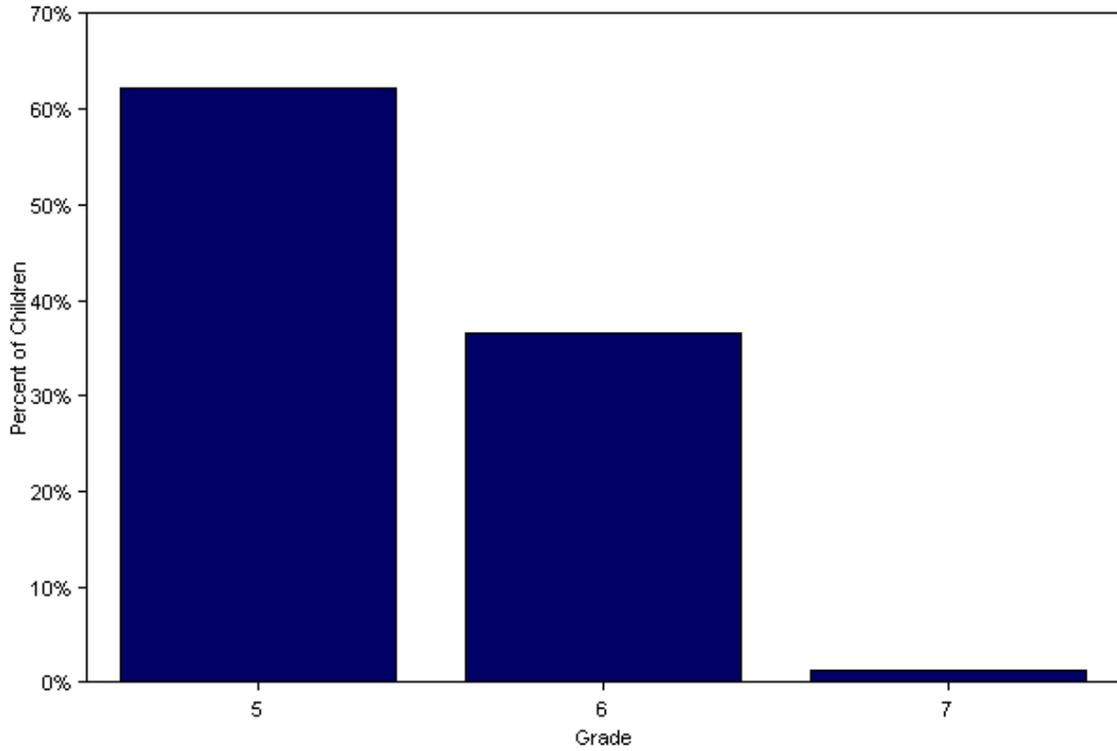
Number of Questionnaires Analyzed for Report: 151

This report contains information from parents about their children's trip to and from school. The report also reflects parents' perceptions regarding whether walking and bicycling to school is appropriate for their child. The data used in this report were collected using the Survey about Walking and Biking to School for Parents form from the National Center for Safe Routes to School.

Sex of children for parents that provided information



Grade levels of children represented in survey



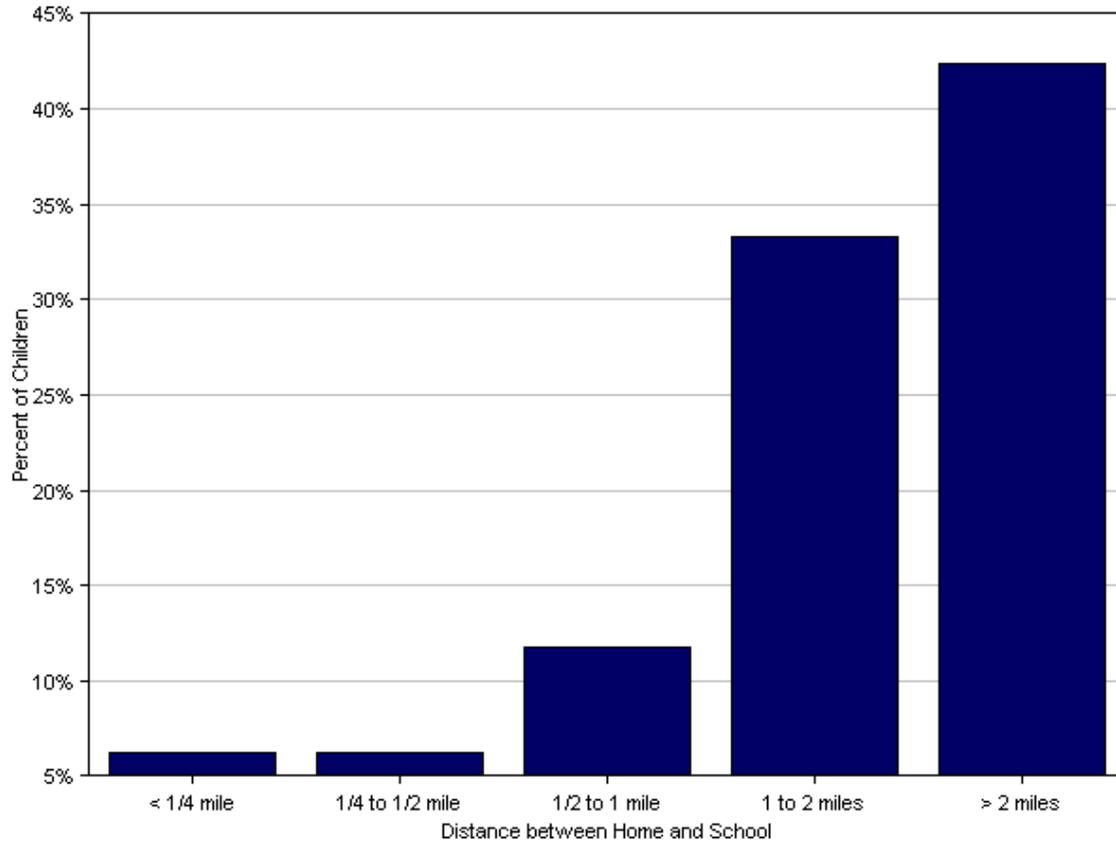
Grade levels of children represented in survey

Grade in School	Responses per grade	
	Number	Percent
5	92	62%
6	54	36%
7	2	1%

No response: 0

Percentages may not total 100% due to rounding.

Parent estimate of distance from child's home to school



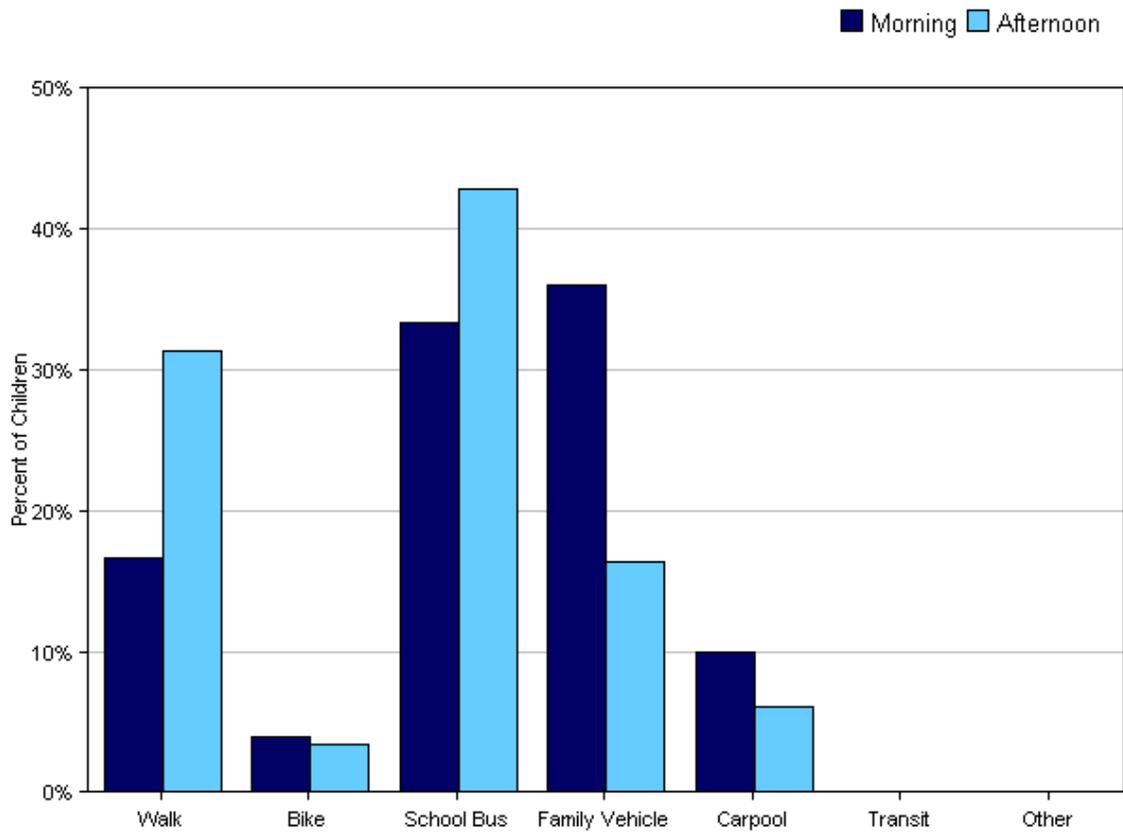
Parent estimate of distance from child's home to school

Distance between home and school	Number of children	Percent
Less than 1/4 mile	9	6%
1/4 mile up to 1/2 mile	9	6%
1/2 mile up to 1 mile	17	12%
1 mile up to 2 miles	48	33%
More than 2 miles	61	42%

Don't know or No response: 7

Percentages may not total 100% due to rounding.

Typical mode of arrival at and departure from school



Typical mode of arrival at and departure from school

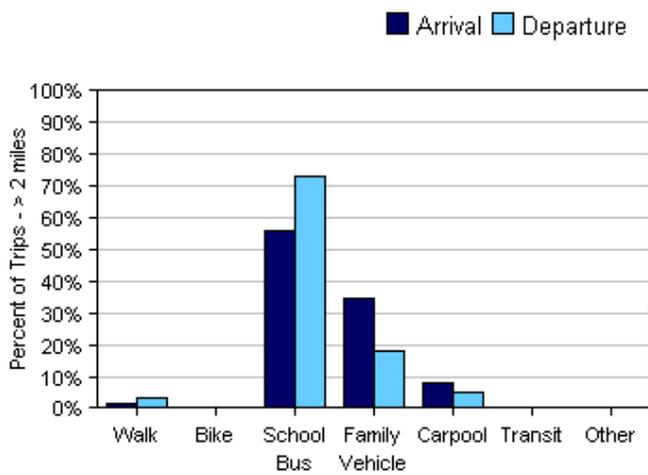
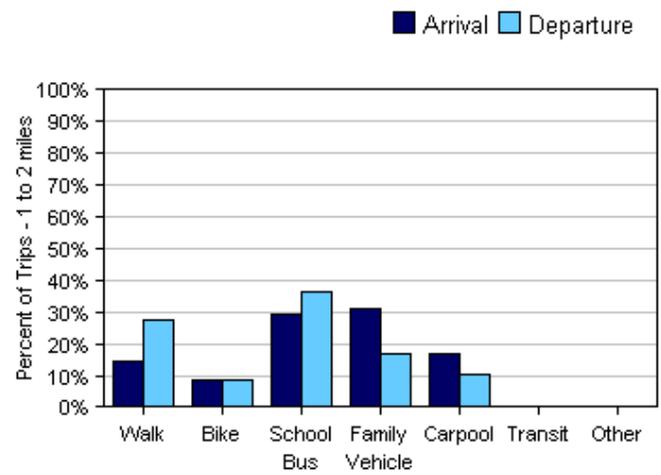
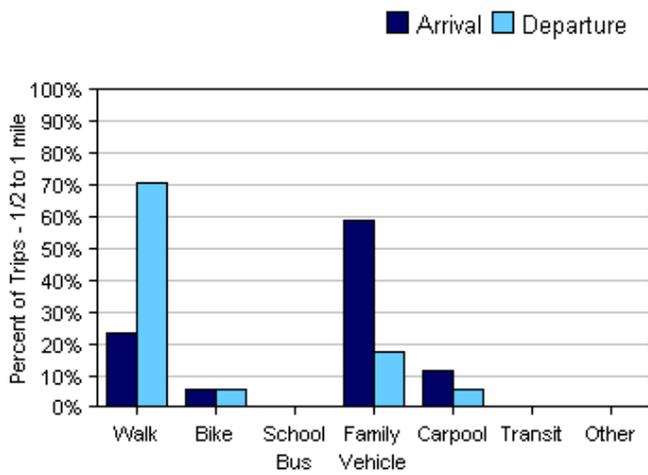
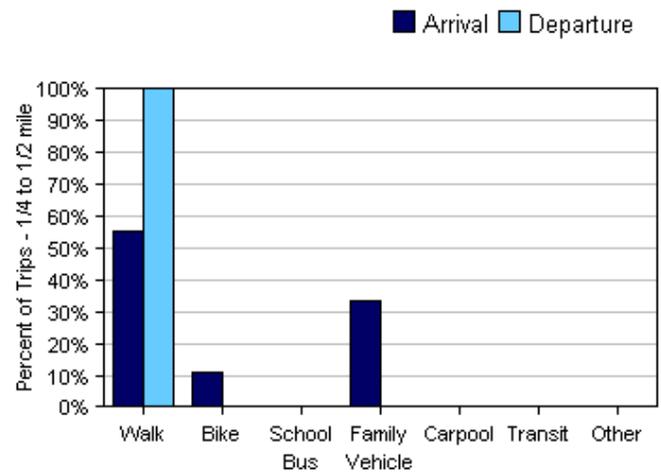
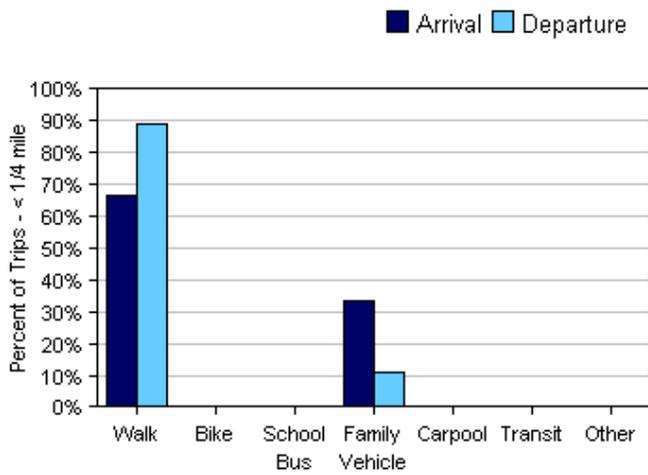
Time of Trip	Number of Trips	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Morning	150	17%	4%	33%	36%	10%	0%	0%
Afternoon	147	31%	3%	43%	16%	6%	0%	0%

No Response Morning: 1

No Response Afternoon: 4

Percentages may not total 100% due to rounding.

Typical mode of school arrival and departure by distance child lives from school



Typical mode of school arrival and departure by distance child lives from school

School Arrival

Distance	Number within Distance	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Less than 1/4 mile	9	67%	0%	0%	33%	0%	0%	0%
1/4 mile up to 1/2 mile	9	56%	11%	0%	33%	0%	0%	0%
1/2 mile up to 1 mile	17	24%	6%	0%	59%	12%	0%	0%
1 mile up to 2 miles	48	15%	8%	29%	31%	17%	0%	0%
More than 2 miles	61	2%	0%	56%	34%	8%	0%	0%

Don't know or No response: 7

Percentages may not total 100% due to rounding.

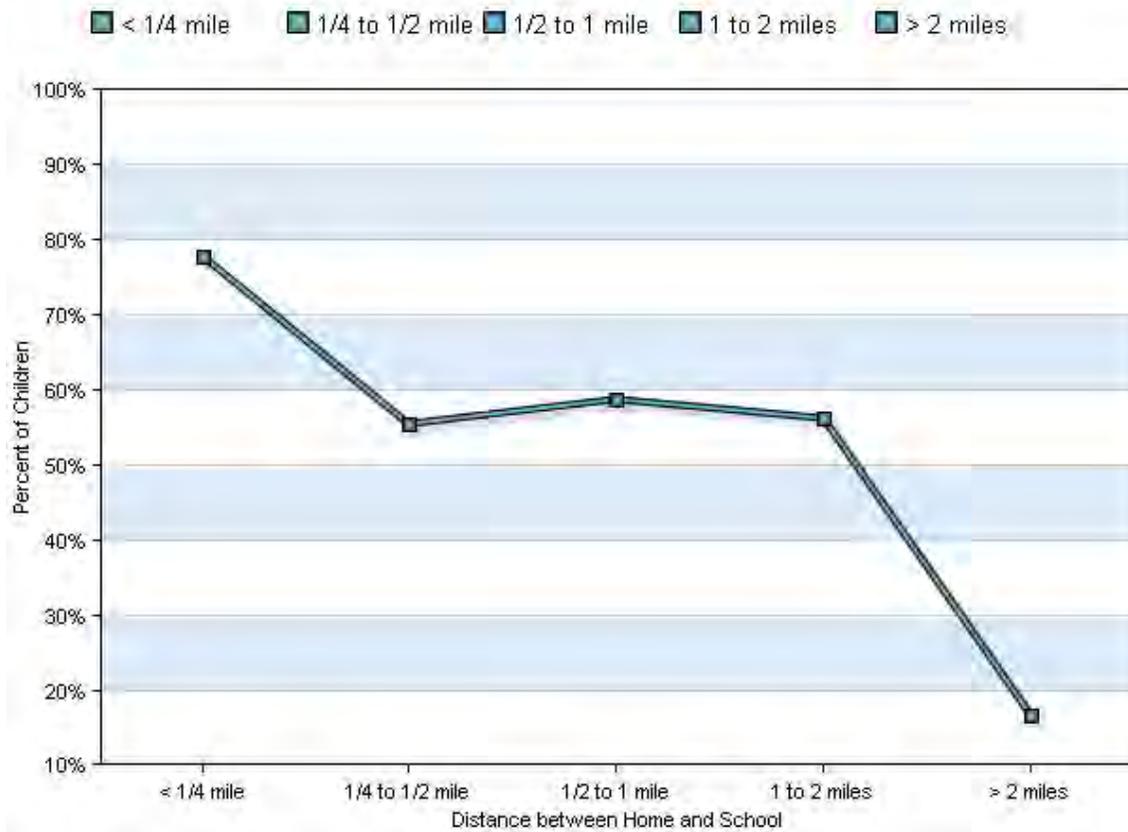
School Departure

Distance	Number within Distance	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Less than 1/4 mile	9	89%	0%	0%	11%	0%	0%	0%
1/4 mile up to 1/2 mile	8	100%	0%	0%	0%	0%	0%	0%
1/2 mile up to 1 mile	17	71%	6%	0%	18%	6%	0%	0%
1 mile up to 2 miles	47	28%	9%	36%	17%	11%	0%	0%
More than 2 miles	60	3%	0%	73%	18%	5%	0%	0%

Don't know or No response: 10

Percentages may not total 100% due to rounding.

Percent of children who have asked for permission to walk or bike to/from school by distance they live from school

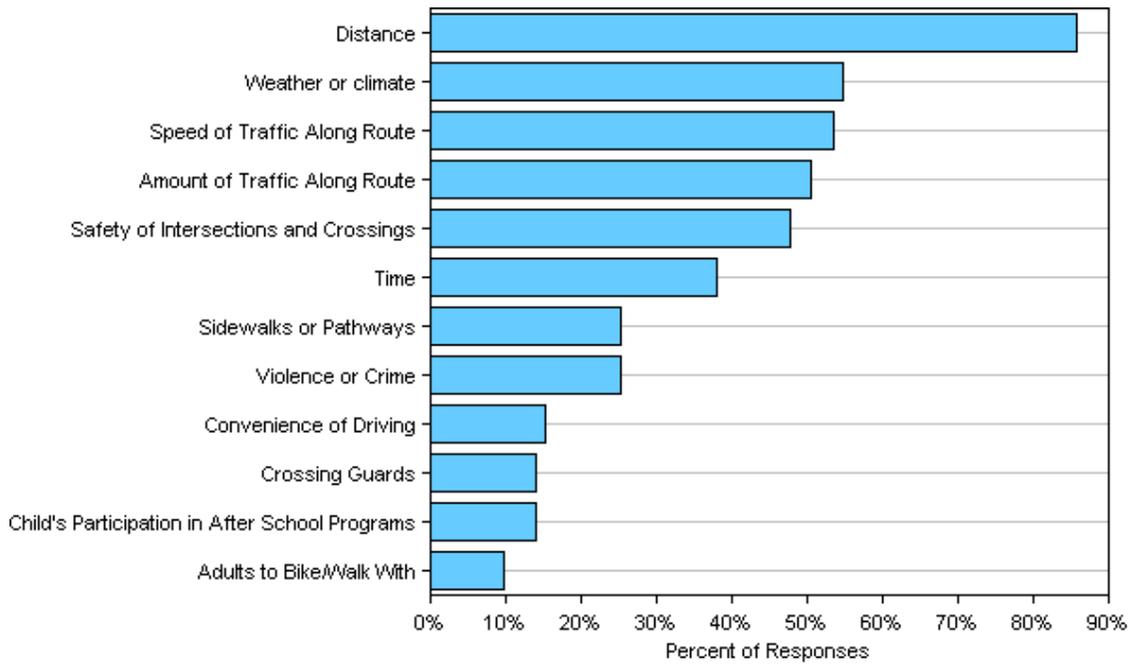


Percent of children who have asked for permission to walk or bike to/from school by distance they live from school

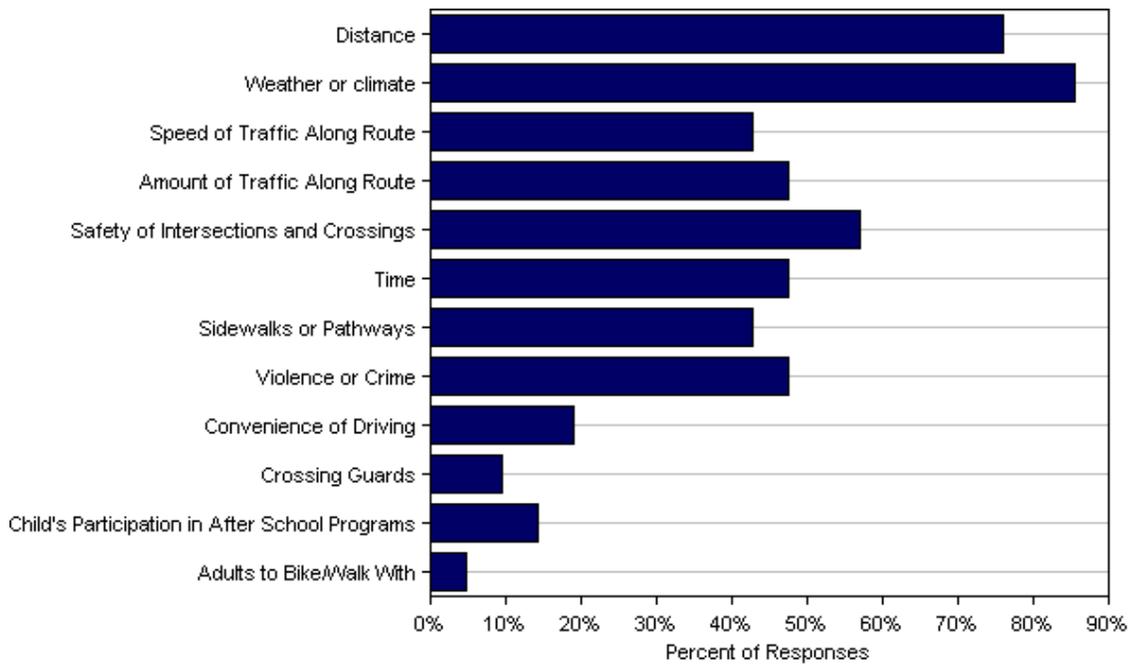
Asked Permission?	Number of Children	Less than 1/4 mile	1/4 mile up to 1/2 mile	1/2 mile up to 1 mile	1 mile up to 2 miles	More than 2 miles
Yes	59	78%	56%	59%	56%	17%
No	84	22%	44%	41%	44%	83%

Don't know or No response: 8
 Percentages may not total 100% due to rounding.

Issues reported to affect the decision to not allow a child to walk or bike to/from school by parents of children who do not walk or bike to/from school



Issues reported to affect the decision to allow a child to walk or bike to/from school by parents of children who already walk or bike to/from school



Issues reported to affect the decision to allow a child to walk or bike to/from school by
parents of children who already walk or bike to/from school

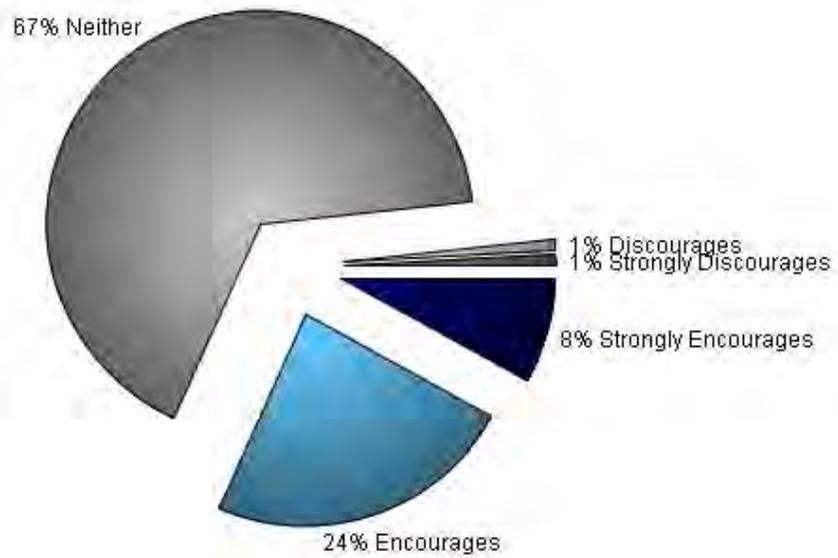
Issue	Child does not walk/bike to school	Child walks/bikes to school
Distance	86%	76%
Weather or climate	55%	86%
Speed of Traffic Along Route	54%	43%
Amount of Traffic Along Route	51%	48%
Safety of Intersections and Crossings	48%	57%
Time	38%	48%
Sidewalks or Pathways	25%	43%
Violence or Crime	25%	48%
Convenience of Driving	15%	19%
Crossing Guards	14%	10%
Child's Participation in After School Programs	14%	14%
Adults to Bike/Walk With	10%	5%
Number of Respondents per Category	71	21

No response: 59

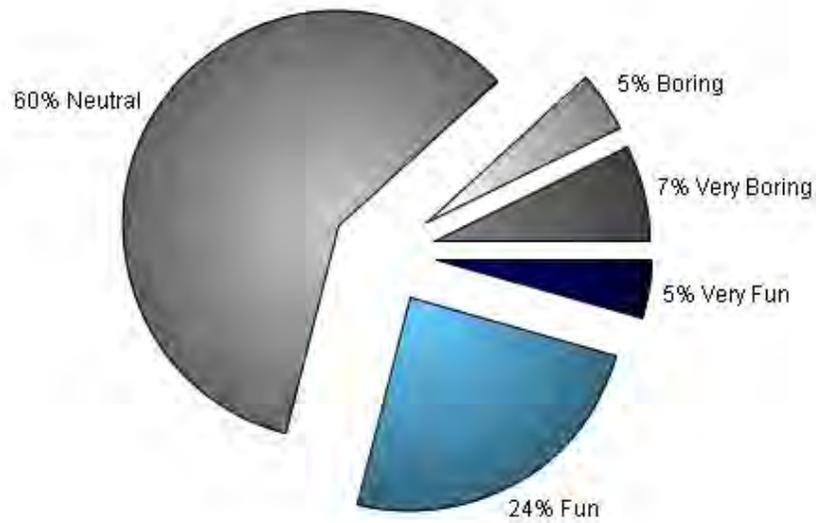
Note:

- Factors are listed from most to least influential for the 'Child does not walk/bike to school' group.
- Each column may sum to > 100% because respondent could select more than issue
- The calculation used to determine the percentage for each issue is based on the 'Number of Respondents per Category' within the respective columns (Child does not walk/bike to school and Child walks/bikes to school.) If comparing percentages between the two columns, please pay particular attention to each column's number of respondents because the two numbers can differ dramatically.

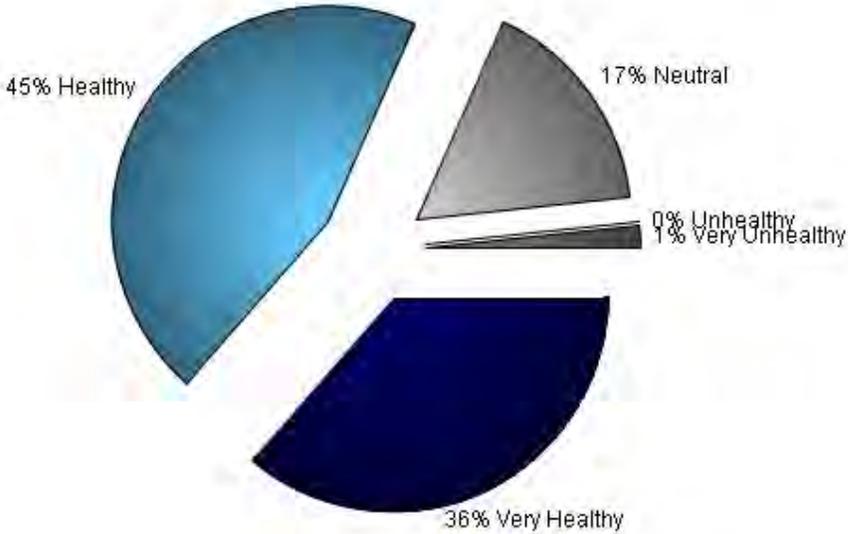
Parents' opinions about how much their child's school encourages or discourages walking and biking to/from school



Parents' opinions about how much fun walking and biking to/from school is for their child



Parents' opinions about how healthy walking and biking to/from school is for their child

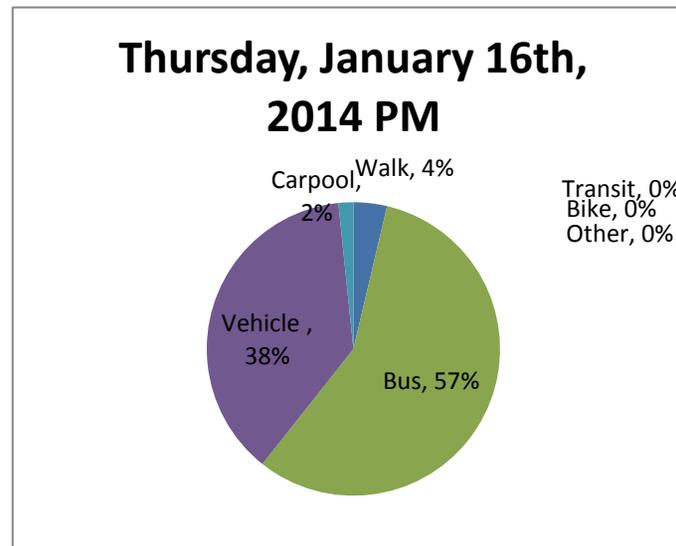
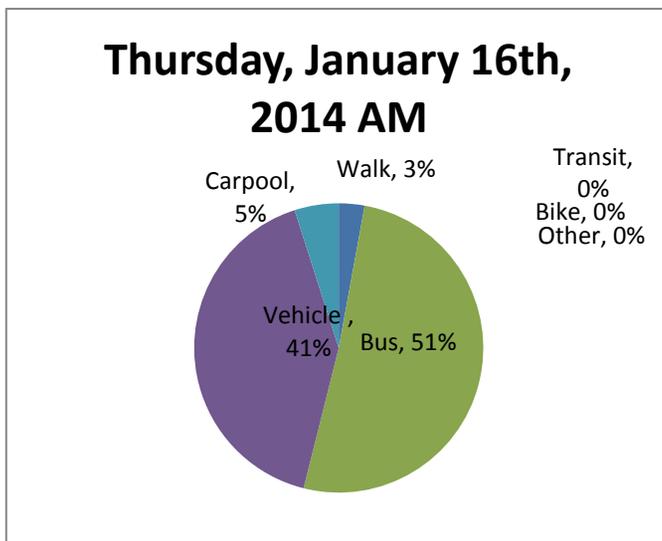
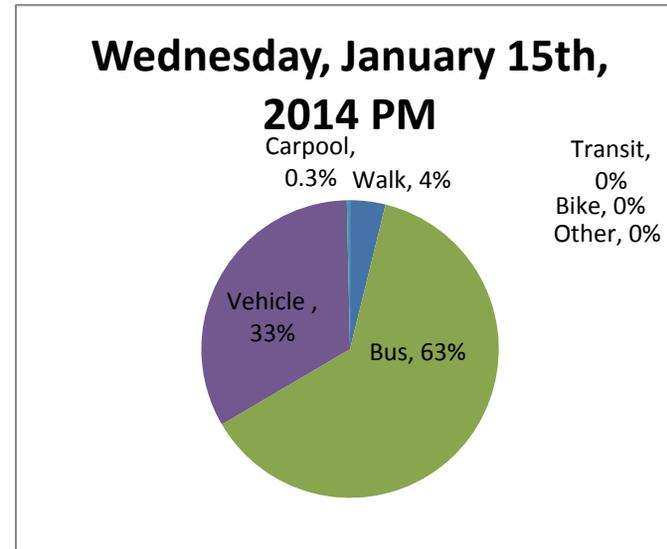
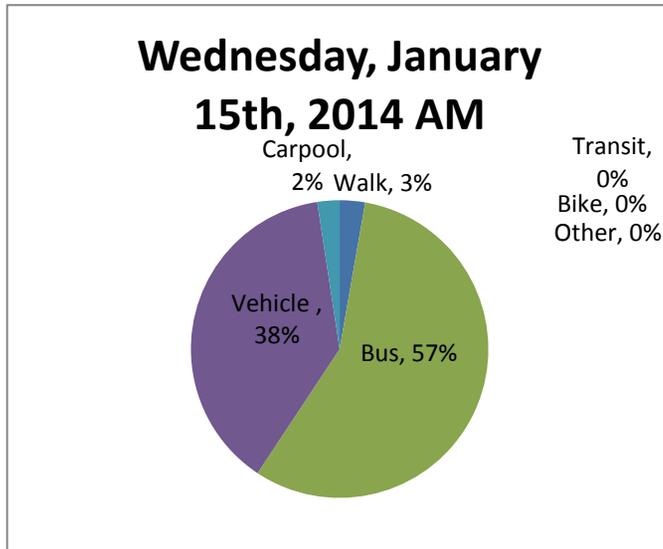


Comments Section

SurveyID	Comment
1102194	We live to far from the schools for my children to walk and I will not allow them to walk alongside Hwy 61.
1102195	We live to far from the schools for my children to walk and I will not allow them to walk alongside Hwy 61.
1102219	We would have our daughter walk but we have 2 major hills, no sidewalks it would not be safe.
1102226	My children walk home from school because they are not eligible for bussing and we work at the time of dismissal, it is not a decision we make.
1102317	My daughter gets a ride to school, but walks home to her grandparents after school.
1102320	School start time means my student would walk to school in the dark the majority of the school year.
1099267	great survey :)
1099344	Can't change distance unless you move closer to, or farther from, school.
1102183	This district needs to do more to encourage walking/biking to school. This city needs to make more intersections safer for kids to walk/bike to school.
1102225	My child walks will never ride bike, he don't have a choice we work before school starts and work past he gets off. I feel that 5th graders should get bussed.
1102305	Walking/biking is not an option for us, as we live in the country. If we were in, I would encourage and allow it.
1102214	We live too far from school to have walking or biking be an option.
1102215	I feel anything over 1 mile should ride the bus. Especially on busy roads etc. (Pioneer Rd)
1102298	These budget cuts need to stop! Buses should be provided for every child. Education is important to succeed (sic)!
1102302	I believe my child should have been eligible for riding the school bus, but for some reason, we were told we were in the walking distance zone this year even though we are approx. 1.57 miles from the school. Therefore, I had to drive her each day.
1102312	We live within walking distance, but the route she would take has no sidewalks and cards do go fast on that road.
1102315	We would also be more apt to letting our daughter ride her bike to school if there wasn't an opportunity for other students to steal her bike off the bike rack, other than the security provided from her own chain.
1102328	I'd prefer my child to walk with other children if she was close enough to walk to school.
1102338	We don't live close enough for my children to walk/bike to school. Otherwise I would consider it.
1099356	Do not feel comfortable with my child walking, but I have no choice. I work. Walking is less fun in the winter months.
1102173	1.42 miles is a LONG walk in the cold weather
1102188	I do have issues with SOME of the kids that walk home. We are close to school. I feel like I need to watch when they come home due to older kids bullying younger kids. Several times they are up by the houses in yards and flowers. It would be nice to have a patrol car after school 4 kids and traffic.
1102191	Bus won't pick them up so only 2 choices walk or get a ride.
1102201	Crossing guards need to be used at the corner of pioneer & Twin Bluff. There are a number of high school students who travel on this road. There are a large number of vehicles that use this route in the mornings and they do not always yield to the middle school children.
1102209	My child would have gone to daycare after school if he was able to ride a bus there. When it is cold, rainy I do not want my child walking. Also I feel daycares should be able to have busing.
1102217	My children live over 8 miles away from the school, so I don't know how well my input will be.
1102224	The highway 61 bridge over the train tracks by the correctional facility is not wide enough to be safe for kids.

1102227	Having walked the distance from our home to the school, I'm not interested in my son or daughter walking, riding bike there as it takes over an hour to walk and there are very busy intersections.
1102335	I would prefer to have bussing available in the winter rather than my child walking or biking in inclement weather.
1102177	Red Wing does not allow for safe biking to Twin Bluff or High School. Burnside is unsafe for any walking to major trafficed roads.
1102316	I would be highly upset if the school district insisted that at 1.3m from the school my daughter needed to walk.
1102207	In severe weather, it would be nice to know that bus transportation could be optional.
1102223	As we live in the country, many of these questions do not apply.
1102295	We live 10 miles (approximately) from TBMS. Walking or biking would involve the highway and I would not allow that. The only way I would allow my child to walk/bike would be if we moved to town.
1102323	Every year we have issues with the bus system. We live far enough that Andru should be bussed. Its too far fro them to be required to walk, and every year we are told no to the bus system.
1102330	I feel that we live to far away for my son to walk to school. And it is not possible for us to drive him to and from school.
1102319	This survey was a waste of time based on where we live. It takes us 15 minutes to DRIVE to school! This is also a waste of paper.
1102180	I would prefer they ride the bus but they live just under 2 miles and can't because they are too close which is ridiculous. Walking or biking would be a huge safety factor to me because of the distance and the chaos at the school during pick up and drop off times.
1102211	We live to far out of town for my child to walk or ride a bike.
1102325	What does number 15 have to do with this survey if my child walks or rides bike to school? Please reply to www.rickyallen40@yahoo.com .
1102308	Because of the crime going on, I don't feel safe that my child will be walking or riding a bike to/from school.

Sunnyside Elementary School SRTS Survey - Student Transportation Mode Tally Results January 13th - 17th*



* The week of the student tally survey's included a Monday holiday and school cancellations on Tuesday and Friday due to weather.

Student Tally – Sunnyside Shuttle

5/29/2013

Number of Buses: 3

Weather: Overcast/rainy

Totals

Walkers: 42

Bikers: 6

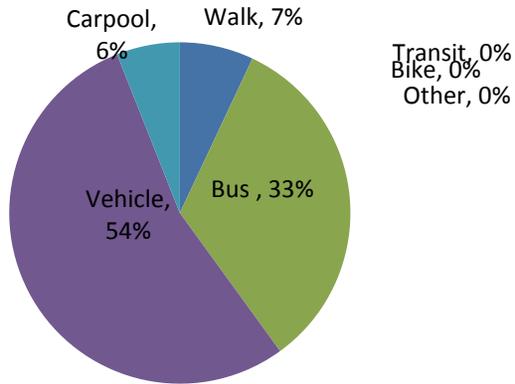
Car: 32

Total Students: 80

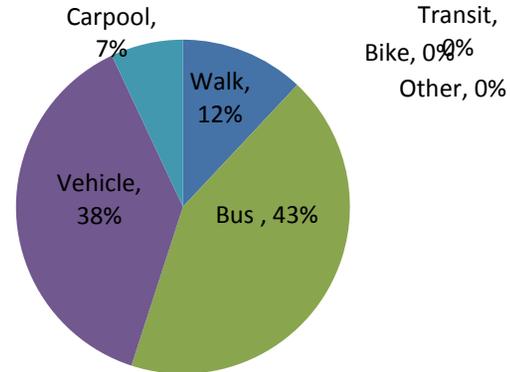
	Walk	Bike	Car	Total
Bus #1	11	2	13	26
Bus #2	25	1	4	30
Bus #3	6	3	15	24
Total	42	6	32	80

Twin Bluff Middle School SRTS Survey - Student Transportation Mode Tally Results January 13th - 17th*

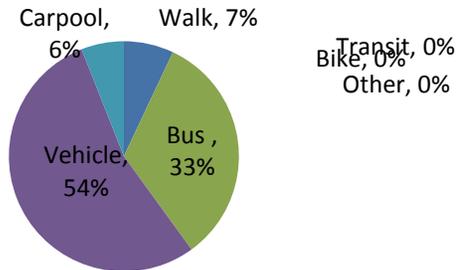
**Wednesday, January 15th,
2014 AM**



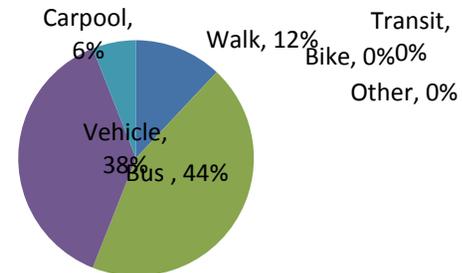
**Wednesday, January
15th, 2014 PM**



**Thursday, January 16th,
2014 AM**



**Thursday, January 16th,
2014 PM**



* The week of the student tally survey's included a Monday holiday and school cancellations on Tuesday and Friday due to weather.

Student School Transportation Modes

Timestamp	Homebase teacher	Total number of students in homebase:	Number of students who walk:	Number of students who ride their bike:	Number of students who ride the bus:	Number of students who have a parent/family member/friend/neighbor drive them:	Number of students absent today from poll:	Other Notes:
12/5/2012 8:00:56	Bergeson	25	1	0	9	10	0	one student walked half way and rode half way—put them in the walk category
12/5/2012 7:50:01	Biomstad	18	2	0	11	5	0	
12/5/2012 7:56:45	Brent Wyatt	22	0	0	12	9	1	
12/5/2012 7:53:21	Carlson	24	4	0	12	8	2	
12/5/2012 7:55:37	Dalsin	18	0	1	6	9	2	
12/5/2012 7:59:50	Devery	24	1	0	11	9	3	
12/5/2012 7:57:08	Dietrich	17	0	0	8	9	0	
12/5/2012 7:55:32	Heizog	18	2	0	6	8	2	One of my walkers usually rides his bike, but now he will walk because of cold weather.
12/5/2012 7:58:07	Julie Thompson	25	3	0	11	10	1	One student rides the bus sometimes and walks sometimes. I counted him as a walker because that's what he does most of the time.
12/5/2012 7:58:58	Martin	22	3	1	8	10	5	
12/5/2012 7:57:45	Mayer	18	1	0	5	11	1	
12/5/2012 7:55:50	Mr. Casci	23	0	1	9	13	0	We are all happy that we have a wonderful school to come to...
12/5/2012 7:59:23	Mr. Hanson	22	3	1	11	7	0	Happy Holidays I have 1 student who receives special transportation - IEP (he was absent from the survey today)
12/5/2012 7:56:17	Mrs. Mann	23	2	0	9	9	3	
12/5/2012 7:55:16	Newman	18	2	0	8	8	0	

Student School Transportation Modes

Timestamp	Homebase teacher:	Total number of students in homebase:	Number of students who walk	Number of students who ride their bike:	Number of students who ride the bus:	Number of students who have a parent/family member/friend/neig drive them:	Number of students absent today from poll:	Other Notes:
12/5/2012 8:07:41	Otteson	23	1	0	9	11	2	
12/5/2012 7:57:37	Person	18	1	0	8	7	2	
12/5/2012 7:59:33	Reding	18	2	0	4	12	0	
12/5/2012 7:56:27	Sara Shannon	19	3	1	5	9	1	one of the 6 moved last week, but is still on my roster. I counted her as absent.
12/5/2012 7:57:45	Simonson	25	1	1	7	10	6	
12/5/2012 8:52:28	Snyder	26	1	1	14	10	0	
12/5/2012 7:56:11	Strom	18	0	3	2	12	1	
12/5/2012 7:59:01	Toivonen	19	1	1	5	12	4	
12/5/2012 8:12:50	Weibel	24	2	0	9	13	2	
12/5/2012 7:56:37	Wolter	18	0	0	10	7	1	
12/5/2012 9:21:46	Goetz	27	2	0	13	11	1	
12/5/2012 10:42:	58 Petterson	21	0	0	10	9	2	Some students ride the bus and have a neighbor/family member bring them to school other parts of the 2 week
12/5/2012 11:46:	57 Carpenter	27	5	3	12	15	2	
12/5/2012 12:44:	46 Berkeland	9	0	0	9	0	0	
	Total	609	43	14	253	273	49	
	Percentage of Total		7.06%	2.30%	41.54%	44.83%	8.05%	
*Survey completed December 5, 2012 *17 degrees on the way to school								