Project Purpose: The purpose of this project is to improve traffic operations on 55th Street at the Bandel Road (East Frontage Road) and TH 52 East Ramp intersections. This segment of 55th Street will not be able to meet peak hour traffic demand in the future because of the close intersection spacing between Bandel Road and the TH 52 East Ramps.

Project Need: The 55th Street/Bandel Road (East Frontage Road) intersection and 55th Street/TH 52 East Ramp intersection currently operate at an acceptable level of service (LOS) C or better during the a.m. and p.m. peak hours. The existing distance between the Bandel Road and TH 52 East Ramp intersections is approximately 350 feet. There is not adequate storage between these two intersections to meet future traffic demand. In the future, eastbound queues will extend back from 55th Street/Bandel Road intersection to the TH 52 East Ramp intersection. Westbound queues will also extend back from the 55th Street/TH 52 East Ramp intersection to the Bandel Road intersection. These traffic queues result in traffic operations problems and delays on this segment of 55th Street.

Concept Evaluation Matrix

55th Street Phase II

S.A.P. 159-130-007 / S.A.P. 159-132-010 / J-7292

Concept Alternative	Project Needs: Traffic: YEAR 2040: Operations	P.M. Peak Hour Reserve Capacity	Travel Time Though Area (Chateau Road to 25th Avenue - PM Peak Hour)	Safety/Conflict Points (Crash rates are related to the number of conflict points)	Multi-Modal accessibility through intersection type	Corridor Continuity	Project Outcomes: Environmental: Wetland Impacts (Acres)	Change in Impervious Area	Constructability	Right of Way: Number of Commercial Parcels Impacted: Total Take (Acre)	Partial Take (Acre)	Number of Residential Parcels Impacted: Total Take (Acre)	Partial Take (Acre)	Project Cost (2015 Dollars): Right of Way	Engineering and Construction Administration	Construction	Total Project Cost
Signalized Intersection	Overall LOS C (All approaches LOS C)	10-15 percent reserve capacity (intersection will continue to operate acceptably with higher traffic volumes)	Eastbound = 125 sec. Westbound = 120 sec.	32 conflict points	Pedestrians compliant to walk signals. Push-activated pedestrian signals will be installed at crossing. Sufficient walk time will be provided for pedestrians to safely cross	Ideal for traffic progression.	0.21	-0.7	- Minimal impact to traffic on 55th Street during construction. - Minimal temporary pavement needed	3 (3.0)	4 (1.3)	3 (1.7)	2 (0.1)	Low -$3.7M High- $5.3M	Low -$1.3M High- $1.5M	Low - $4.6M High - $5.4M	Low - $9.6M High - $12.2M
Roundabout	Overall LOS D (Northbound approach LOS F)	No reserve capacity (traffic operational issues expected on days with higher traffic volumes, such as daily fluctuations, incidents, construction, weather, etc.)	Eastbound = 145 sec. Westbound = 135 sec.	8 conflict points. Design reduces vehicle speed. Case studies that have evaluated converting a four-legged intersection to a roundabout have been shown to significantly reduce crash severity and in some cases reduce crash frequency as well.	Pedestrians have the right-of-way. Pedestrians need to only cross one direction of traffic at a time at each approach. Shorter crossing distances	Having a mixture of traffic signal and roundabout traffic controls is less than ideal for traffic progression.	0.38	0.5	- Significant impact to traffic on 55th Street during construction due to complex staging. - Significant temporary pavement needed to maintain traffic during construction	2 (1.6)	4 (1.3)	-	1 (0.1)	Low - $2.0M High - $2.8M	Low -$1.4M High- $1.6M	Low - $4.8M High - $5.7M	Low - $8.2M High - $10.1M

Best fits the project needs

Fits the project needs

Does not fit project needs

Outcome best fits the other criteria reviewed

Selected Alternative: Signalized Intersection

The signalized intersection was selected based on its abilities to best meet the project's purpose and need while also minimizing environmental impacts to King's Run Creek and the adjacent wetlands. While both proposed intersection configurations increase the intersection spacing and all respective intersection options are expected to operate with acceptable levels of service under year 2040 conditions, the traffic signal has significantly more reserve capacity to continue to operate acceptably during days with higher than average traffic volumes, whereas the roundabout will experience traffic issues with higher than average traffic volumes (such as daily fluctuations, incidents, construction, weather, etc.).

Project Timeframe:

Based on the current traffic projections the Phase II improvements are anticipated to be necessary from 2025 to 2030.

PRELIMINARY
SUBJECT TO CHANGE
5-14-15
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CLEARWATER RD.
WHALERS LN.
T.H. 52
BANDEL RD.
COMFORT INN
57TH ST.
STERLING STATE BANK
56TH ST.
26TH AVE.
28TH AVE.
FAZOLI'S
MCDONALDS
SUPER AMERICA
PROGRESSIVE INSURANCE
FRONTAGE RD.
55TH ST.
GEORGETOWN HOMES
CULVERS
W. FRONTAGE RD.
NAPA
FIRESTONE
HERTZ
WENDY'S
KINGS RUN
E. FRONTAGE RD.
POWER & SPORTS
JO-ANN FABRICS
NEWT'S
WALMART
CARPET ONE
LUMBER LIQUIDATORS

N

0 200 400
scale in feet

LEGEND

- PAVED ROADWAY
- DRIVEWAYS
- BRIDGES / BOX CULVERTS
- RAISED MEDIANS & CURBS
- CONCRETE TRAILS & SIDEWALKS
- 2014 CONSTRUCTION
- ROADWAY TO BE REMOVED
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL

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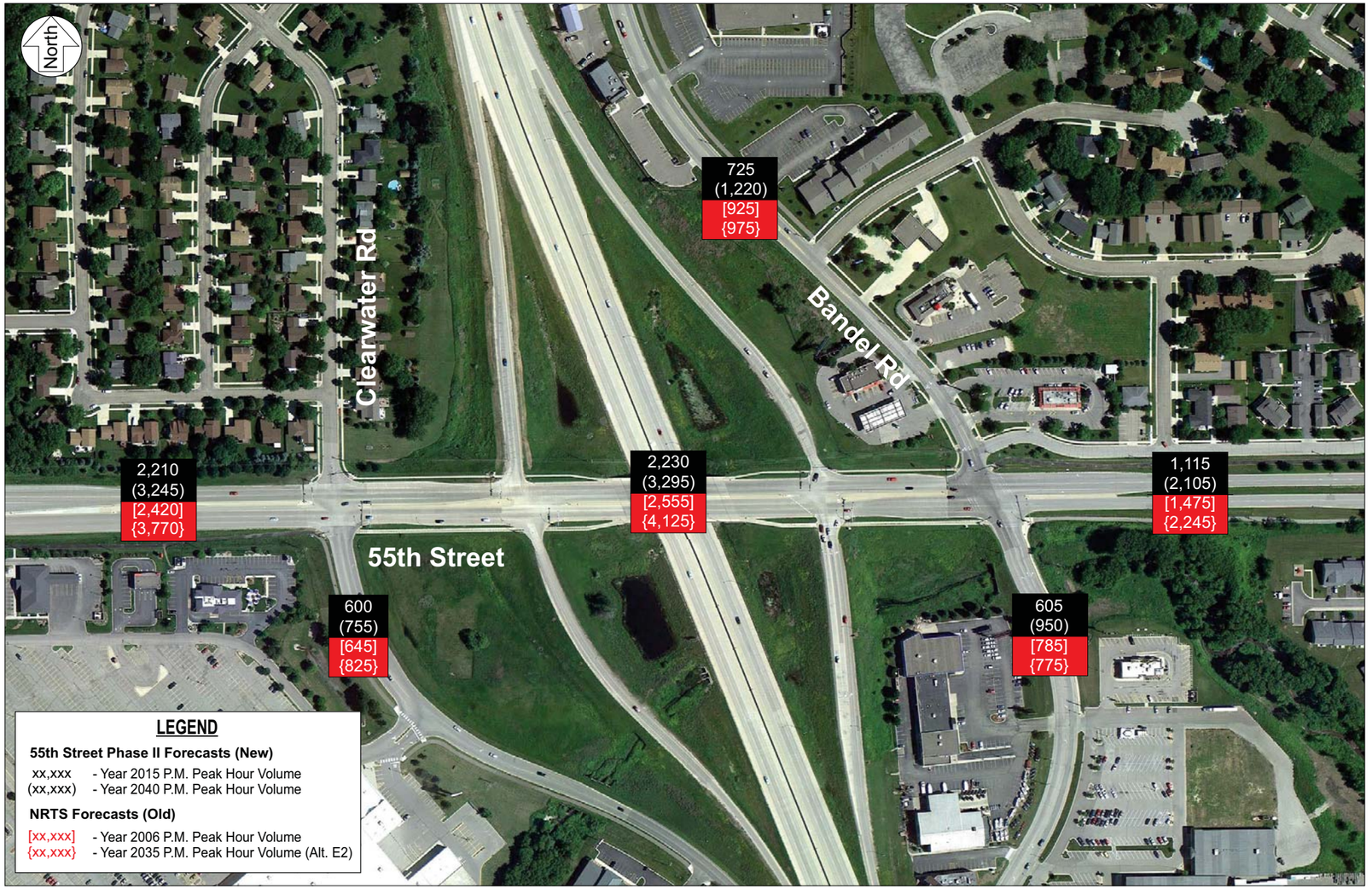
SRF Consulting Group, Inc.

Signalized Intersection Alternative

55th Street Phase II
City of Rochester, Minnesota

8216
May 2015

P.M. Peak Hour Traffic Volume Comparison



The key transportation and land use changes since 2006 include:

- TH 52/65th Street NW interchange (completed October 2013)
- TH 52 auxiliary lane between 65th Street NW and 55th Street NW (completed October 2013)
- Relocation of Menards to 65th Street NW (April 2014)
- 41st Avenue NW/Badger Hills Drive extension to 50th Avenue NW (completed June 2014)
- Bridge widening and turn lane improvements along 55th Street NW at the TH 52 East Ramps and TH 52 West Ramps intersections (Phase I, completed in Fall 2014)

Next Steps

- Create Official Map Document of the Preferred Alternative.

- Collect traffic volumes along 55th Street NW within a few years after the completion of the 55th Street NW Extension project (Zumbro River Crossing) and if/when major development projects are submitted near the study area. Compare the collected traffic volumes to the projected growth.

- Continue to monitor traffic operations in the study area. If operation and / or safety issues occur, adjust signal timing or advance the 55th Street Phase II construction schedule.