

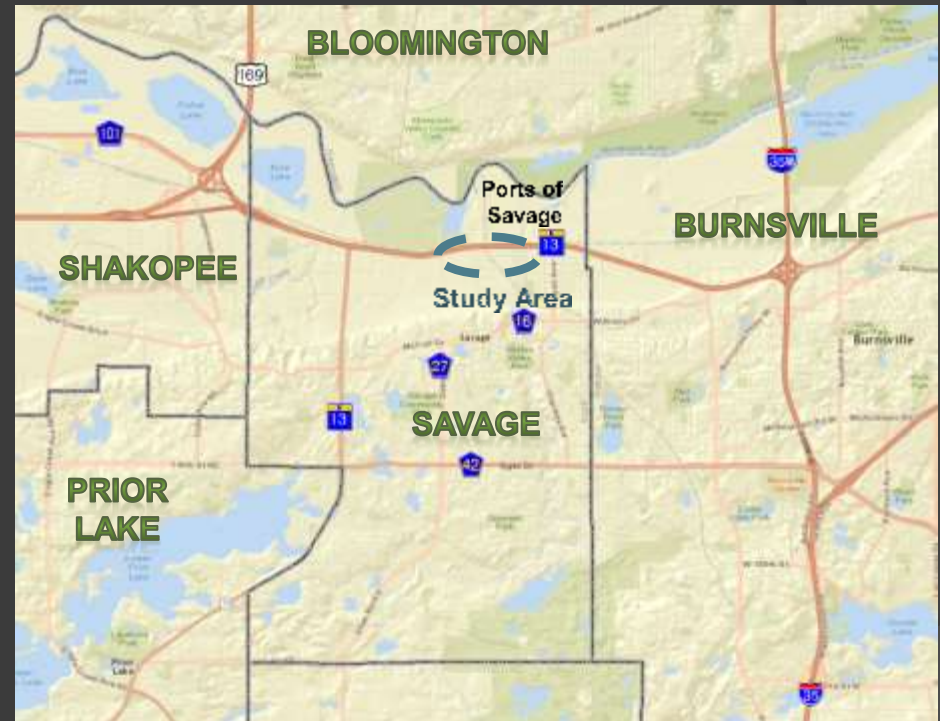


TH 13 Port of Savage Truck Access Study



TH 13 Corridor Overview

- Principal Arterial - Connects two key river crossings serving northern Scott County (US 169, I-35W)
- High commuter traffic
- Large percentage of heavy truck usage due to Ports of Savage (7 terminals) and railroad access



2017 Study Purpose

- ◉ Develop a long-term concept for Dakota/Yosemite Avenue intersections
- ◉ Continue recent efforts to address safety, access, and mobility
- ◉ Evaluate improvements that benefit freight
- ◉ Position project for State and Federal funding

2017 Study Stakeholders

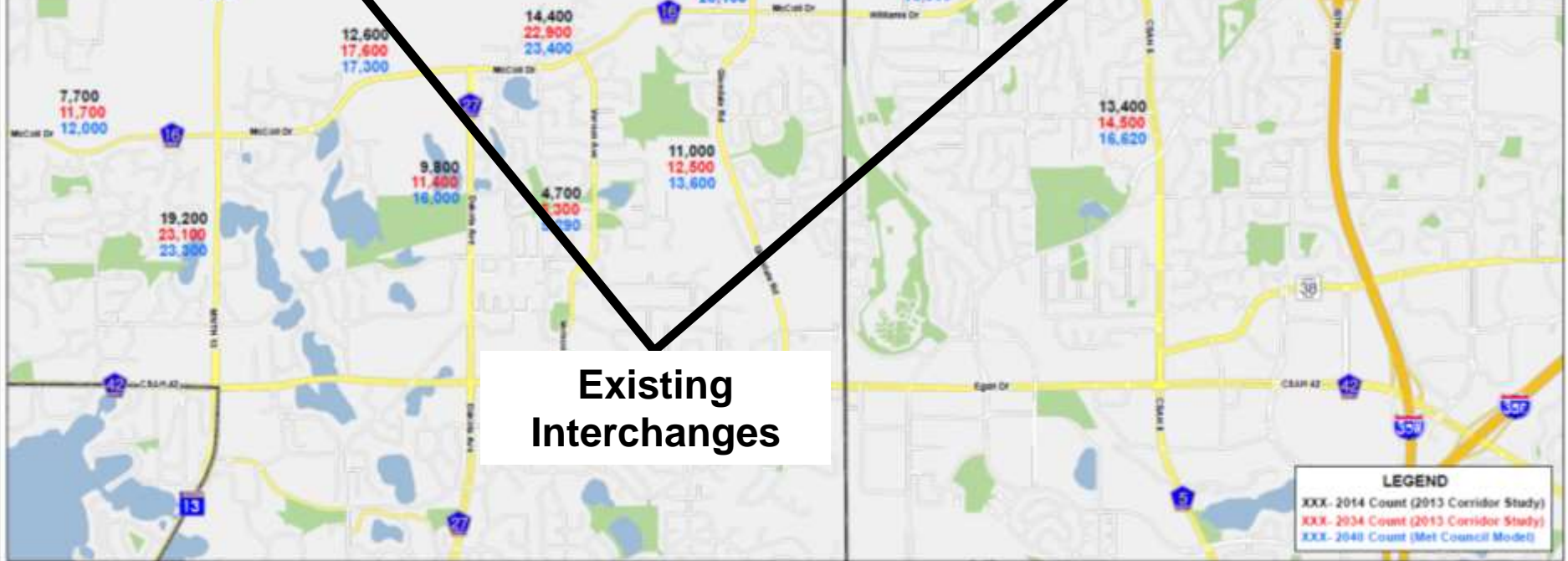
- City of Savage
- Scott County
- MnDOT
 - Metro District
 - Freight
 - Rail Offices
- Railroad Agencies
 - Union Pacific
 - Canadian Pacific
 - Twin Cities & Western
- Ports Business Representatives
- Property Owners

Study funded by City of Savage, Scott County, and grant from the Scott County CDA



Study Area

Existing At-Grade Expressway

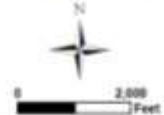


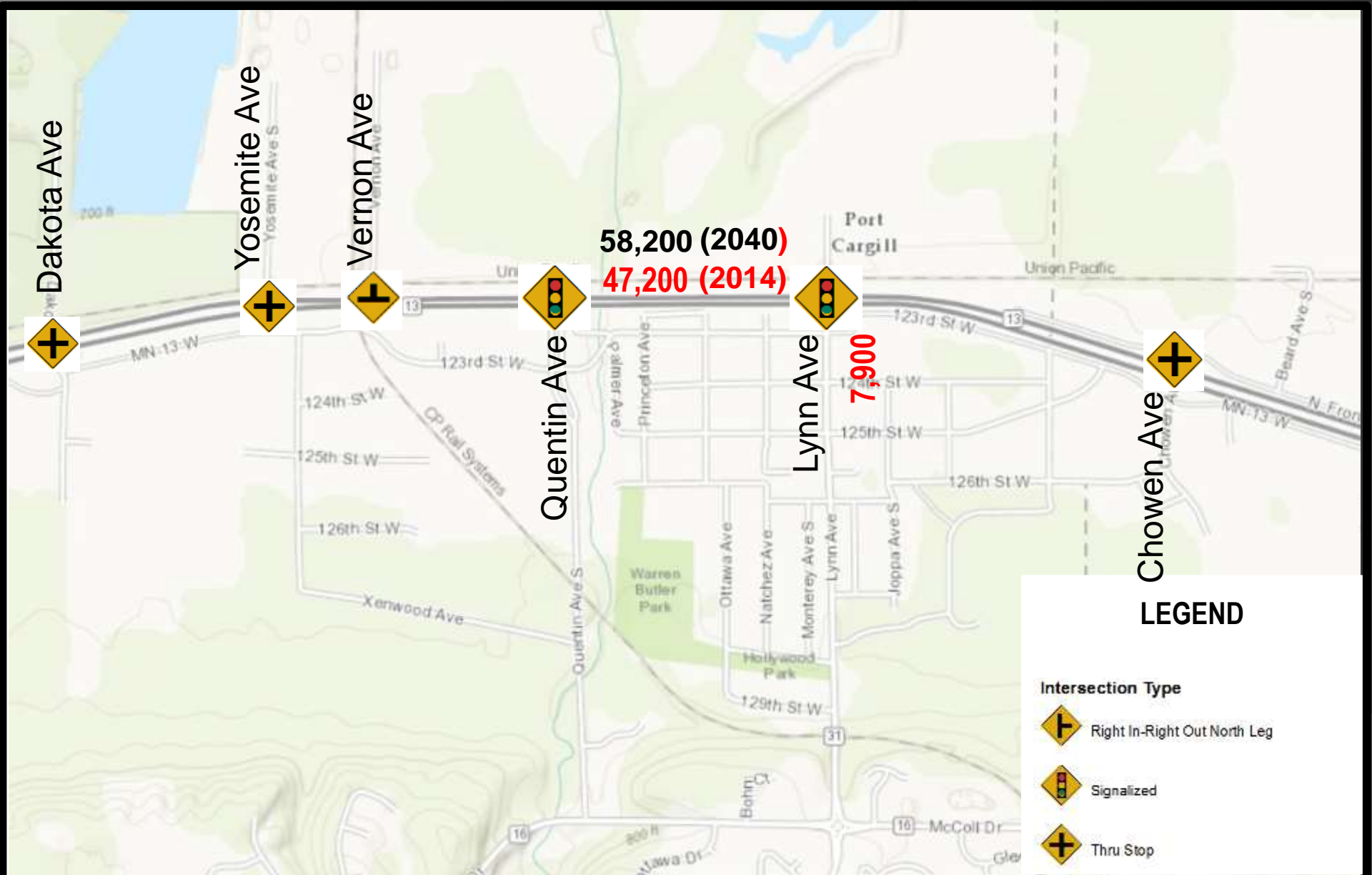
Existing Interchanges

LEGEND
 XXX- 2014 Count (2013 Corridor Study)
 XXX- 2034 Count (2013 Corridor Study)
 XXX- 2040 Count (Met Council Model)



**Existing & Forecasted Traffic
 TH 13 Design Study
 Savage, MN - Scott County**





LEGEND

- Intersection Type**
-  Right In-Right Out North Leg
 -  Signalized
 -  Thru Stop



TH 13 Traffic Operations Study
 City of Savage, Minnesota



Resources for enriching lives.

Drive Safely! Thank You!

**Keep your
rear clear.**







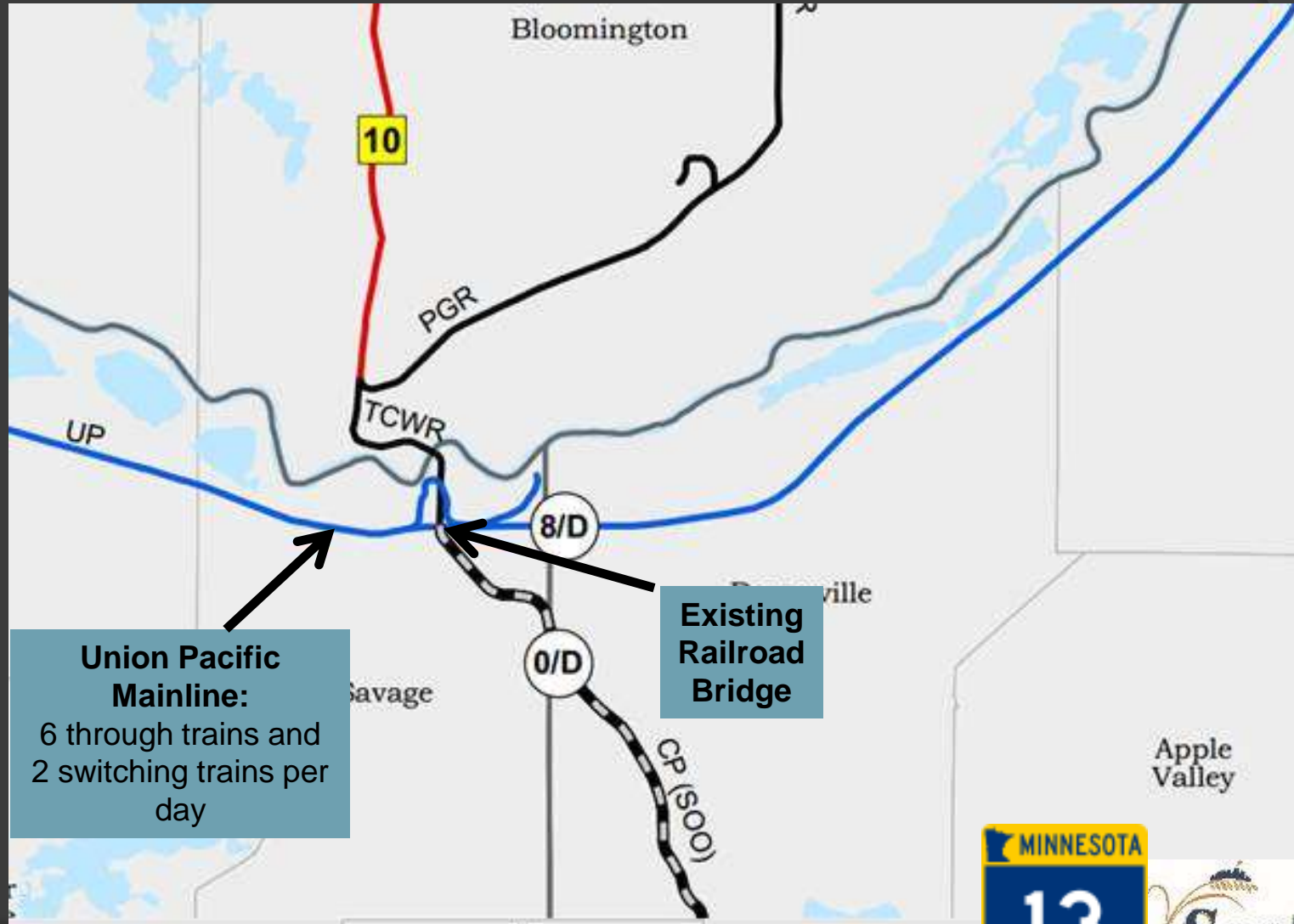


TH 13 Recent Investments

- TH13/101 Interchange
- CSAH 5 (Dakota Co.) Interchange
- Quentin Ave and Lynn Ave Signals and Intersection Improvements
- South Frontage Road
- Mill and Overlay and Acceleration/Turn Lane Extensions (2017)



Ports of Savage Railroads



Union Pacific Mainline:
6 through trains and
2 switching trains per
day

Existing Railroad Bridge



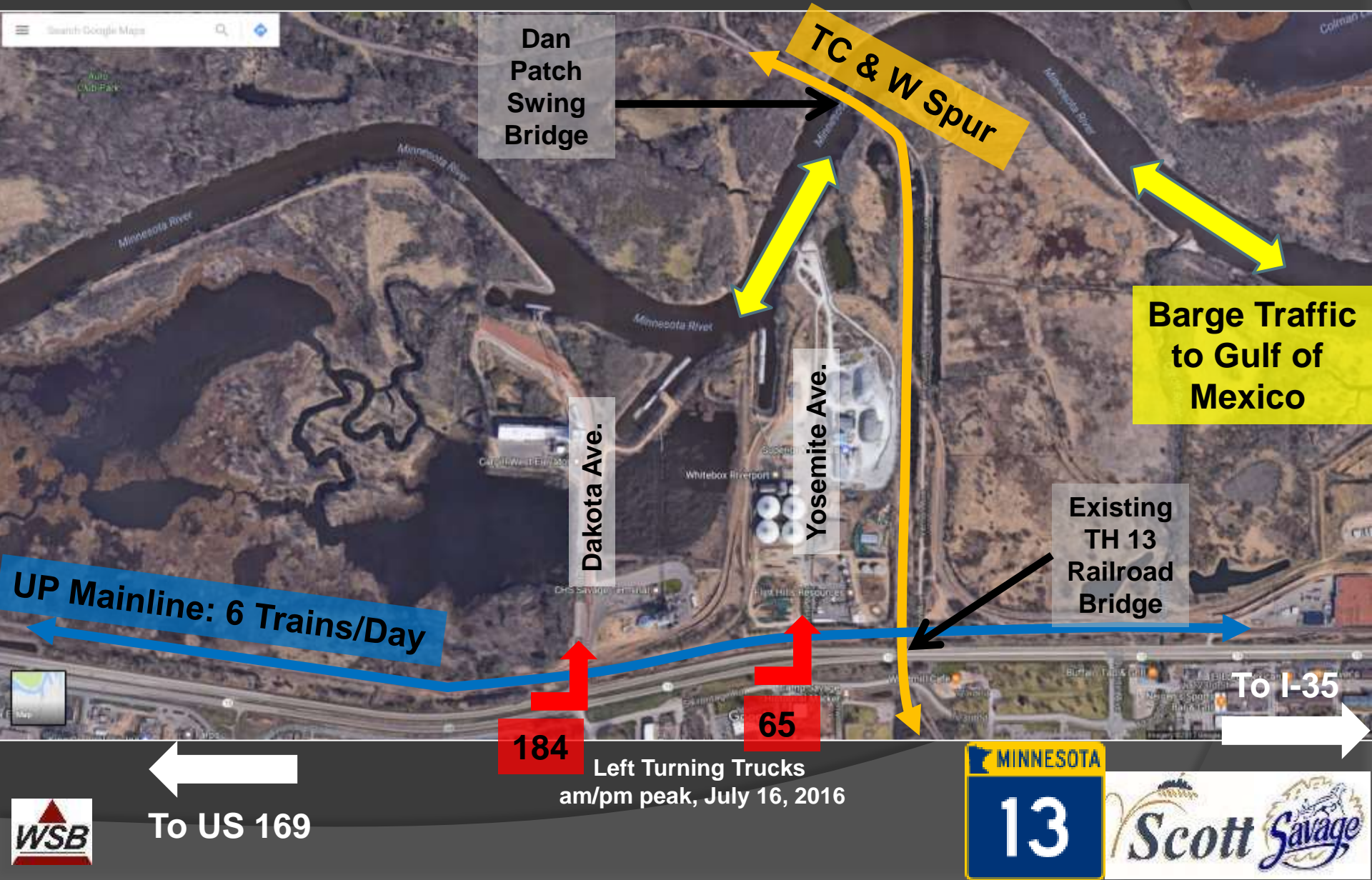
Figure 10 - Railroad Lines

TH 13 Dakota Ave - Yosemite Ave Design Study
 City of Savage / Scott County



Ports of Savage Freight Flows

(corn, beans, wheat, minerals)



MN River Port Tonnages

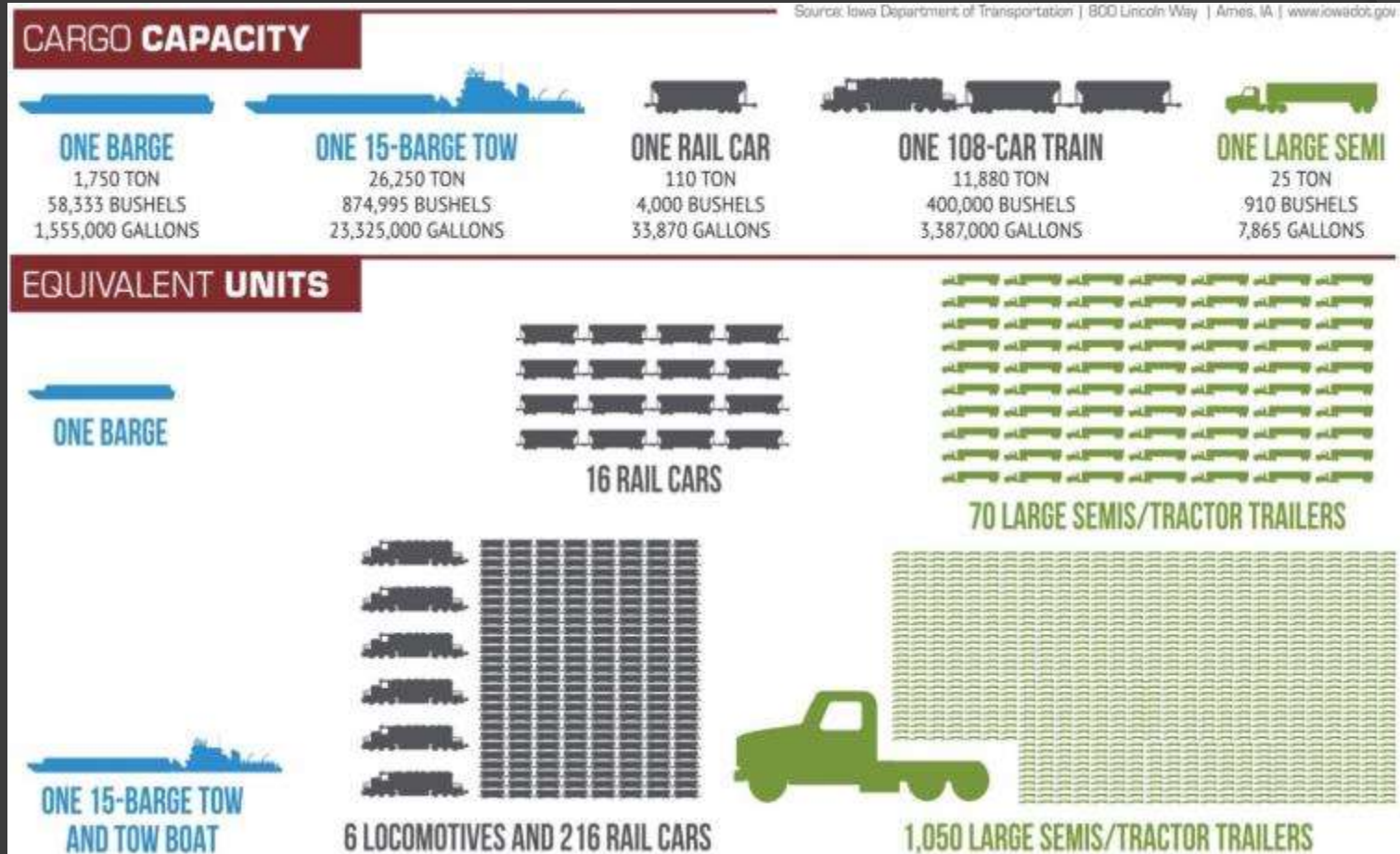
Figure VI-29
River Port Annual Tonnages*, 2012 to 2016

Port	2012	2013	2014	2015	2016
Minneapolis	671,691	715,599	573,168	223,871	Unknown
St. Paul	5,551,737	5,273,301	6,315,039	6,887,022	8,129,481
Savage	1,921,603	1,405,947	1,704,930	2,123,201	3,199,988
Red Wing	836,497	532,891	433,840	684,935	1,057,372
Winona	1,697,955	1,258,783	1,700,883	1,707,910	2,356,351
Total	10,679,483	9,186,521	10,727,859	11,626,940	14,743,192

*Annual tonnages have varied due to seasonal flooding, ocean freight rates, and commodity demand.

Source: Minnesota Department of Transportation, 2017

Freight Mode Cargo Capacities



Source: Iowa DOT

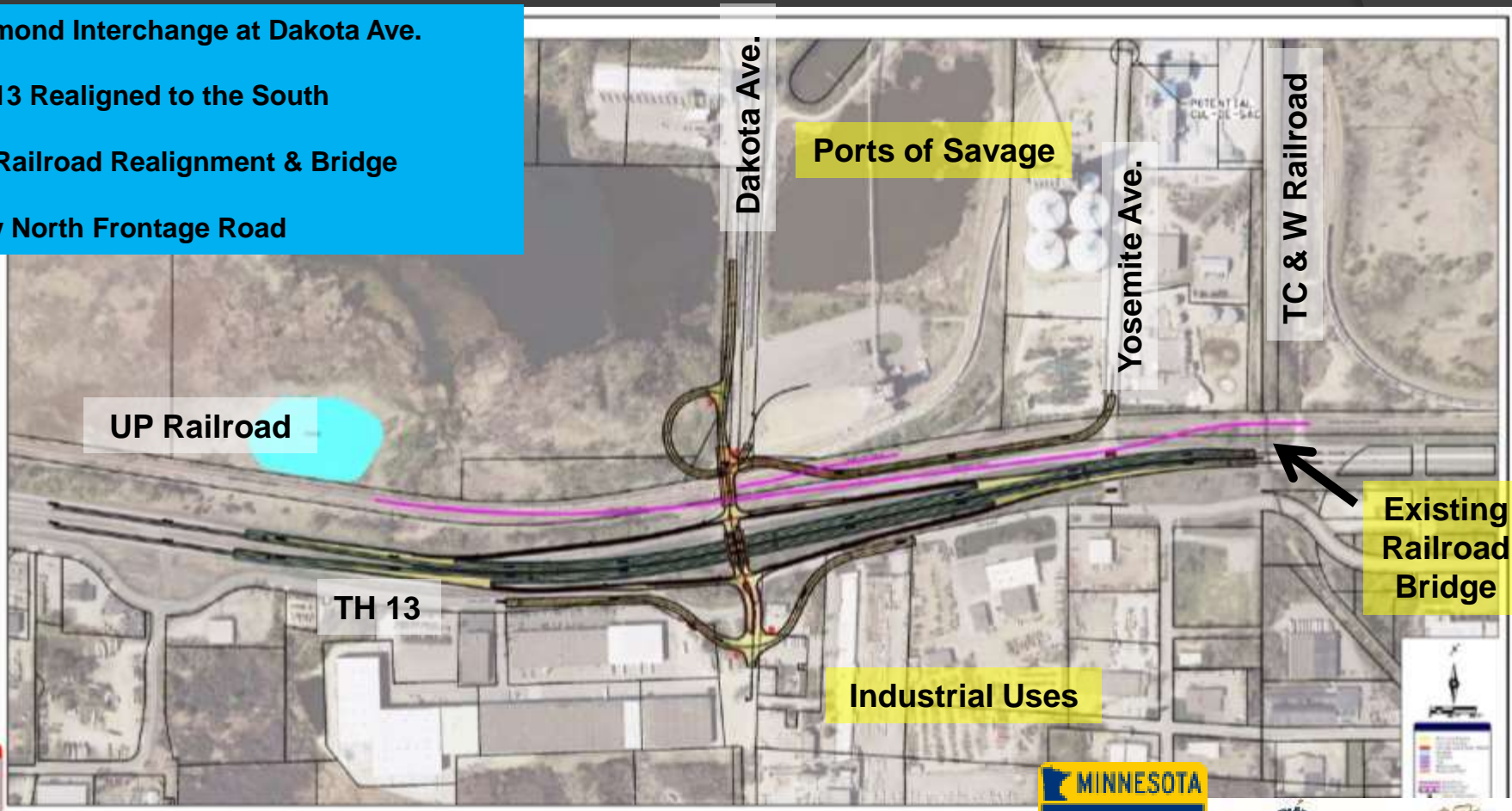
2016 Design Charrette...

- MnDOT, City of Savage, Scott County, TH 13 businesses participated
- 9 design concepts developed ranging from low to high cost solutions
- MnDOT, City of Savage and Scott County selected 4 of the 9 design concepts for detailed design and feasibility analysis



Concept A: Dakota Avenue and Railroad Overpass

- Diamond Interchange at Dakota Ave.
- TH 13 Realigned to the South
- UP Railroad Realignment & Bridge
- New North Frontage Road

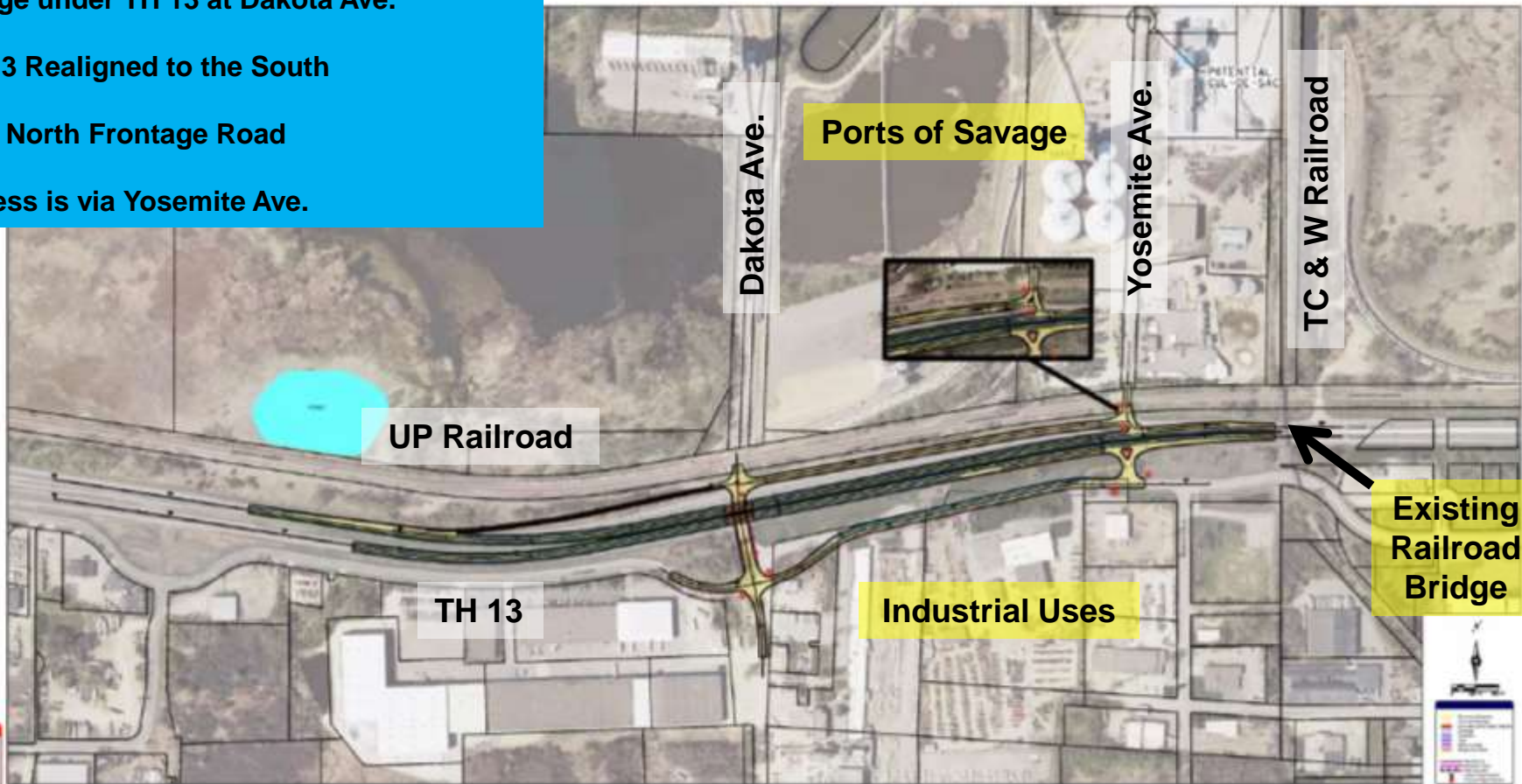


Estimated Cost : \$45 to \$53 million



Concept B: Dakota Avenue Underpass

- Bridge under TH 13 at Dakota Ave.
- TH 13 Realigned to the South
- New North Frontage Road
- Access is via Yosemite Ave.

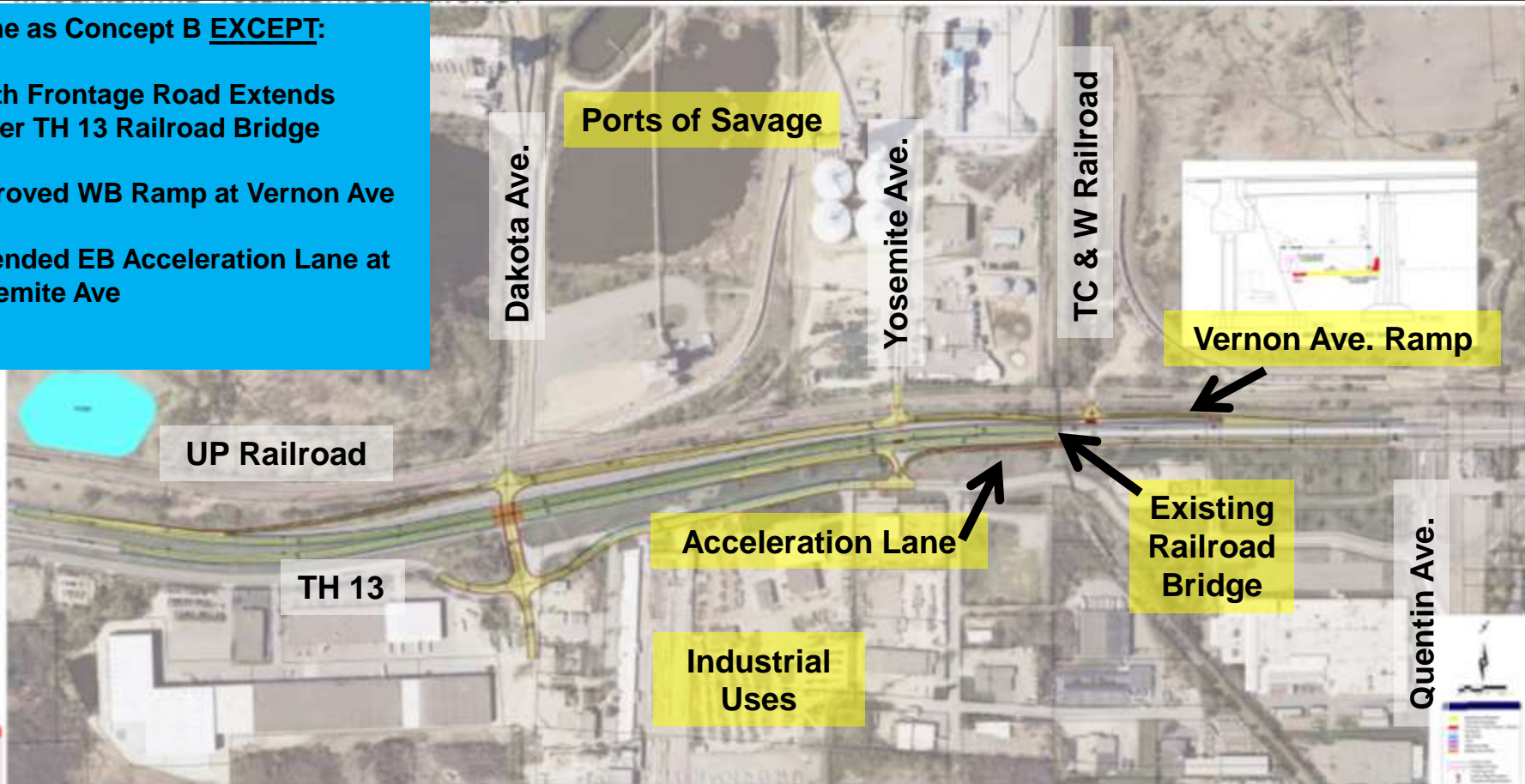


Estimated Cost : \$25 to \$30 million



Concept B1: Dakota Avenue Underpass Extended Under Railroad Bridge

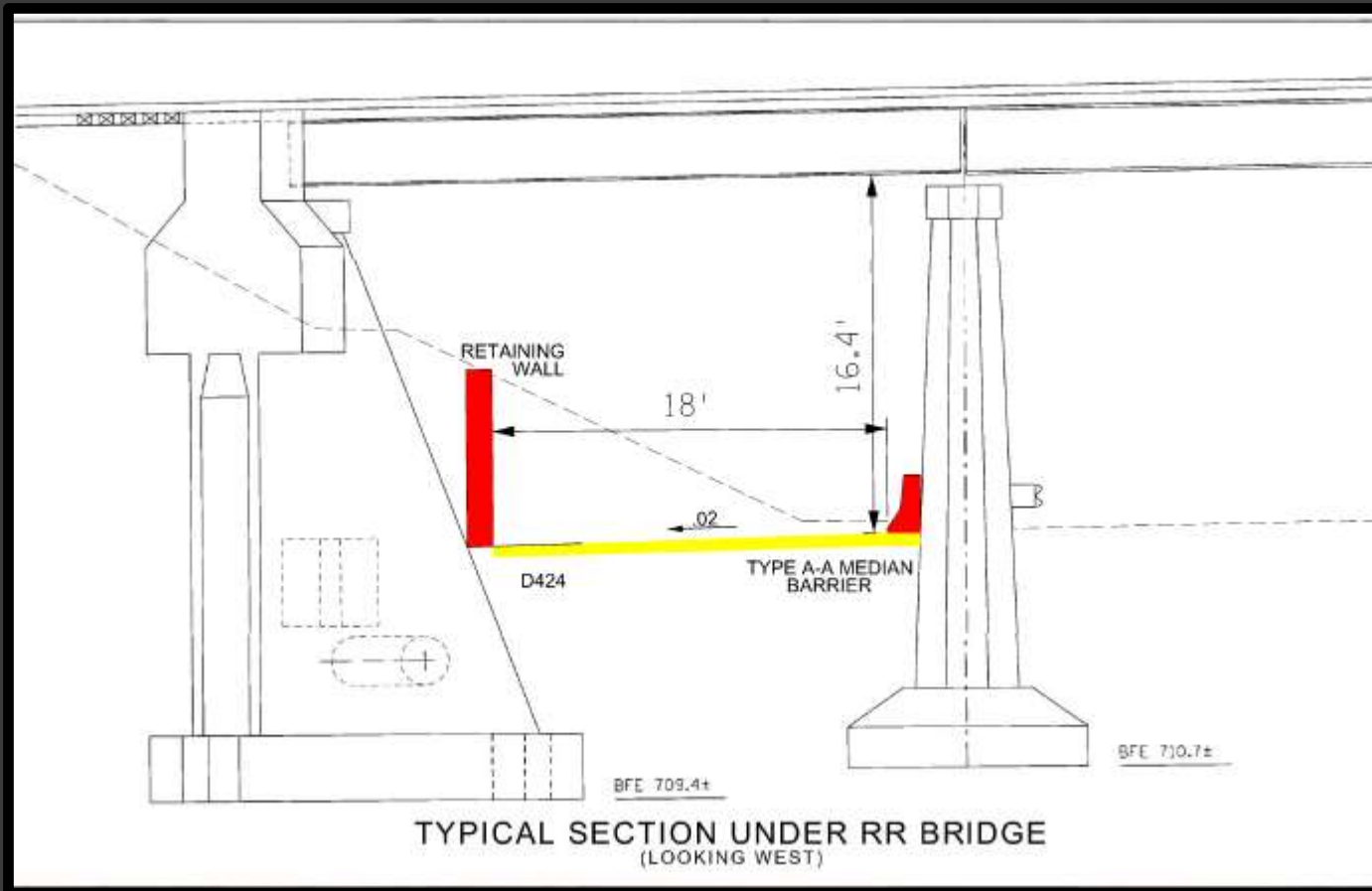
- Same as Concept B EXCEPT:
- North Frontage Road Extends Under TH 13 Railroad Bridge
- Improved WB Ramp at Vernon Ave
- Extended EB Acceleration Lane at Yosemite Ave



Estimated Cost : \$27 to \$32 million



Concept B1: Dakota Avenue Underpass Extended Under Railroad Bridge





03/20/2017 10:50



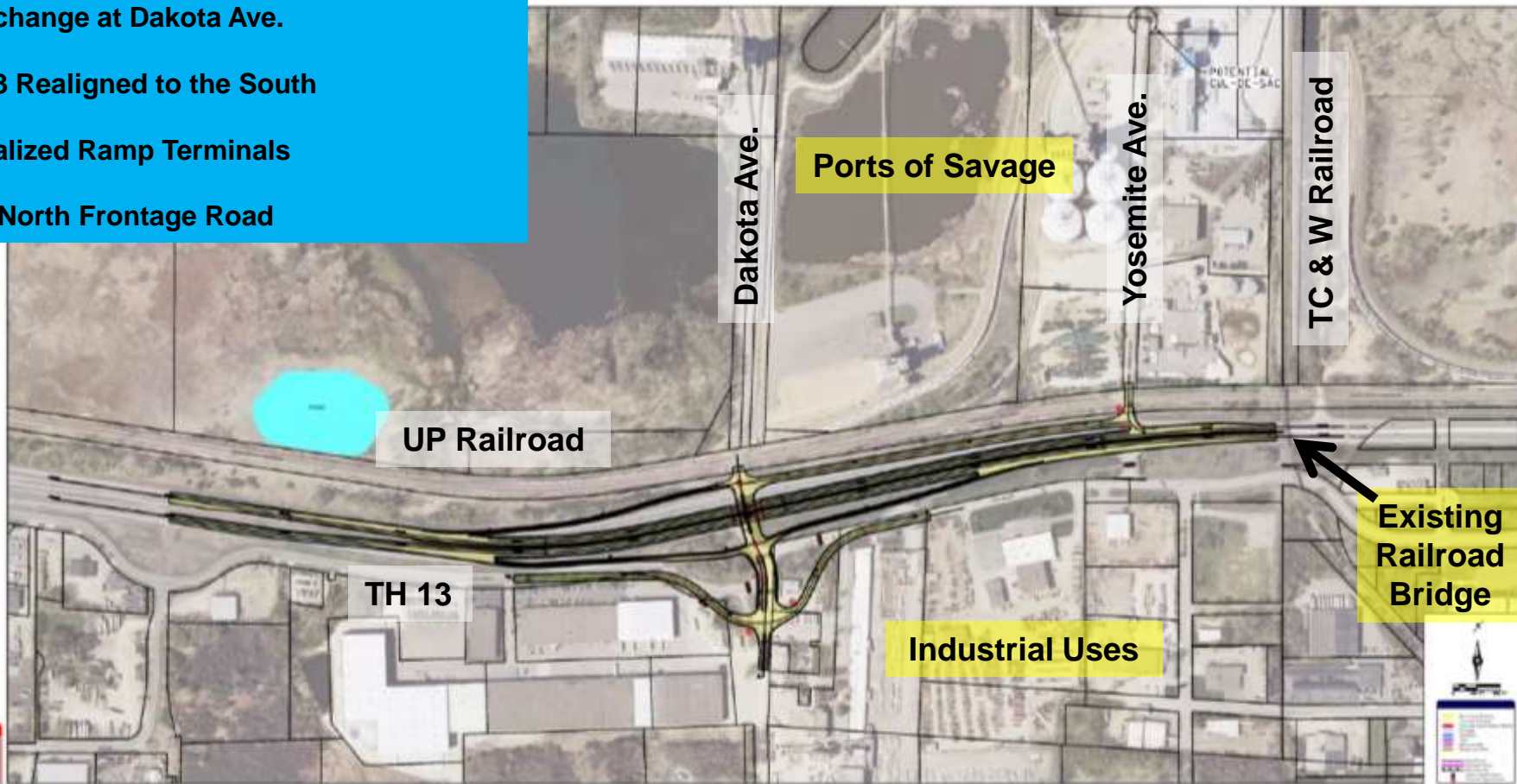
03/20/2017 10:52

Xenwood
← Ave
Yosemite
Ave →

03/20/2017 10:48

Concept C: Dakota Avenue Underpass and Eastbound On/Off Ramps

- Interchange at Dakota Ave.
- TH 13 Realigned to the South
- Signalized Ramp Terminals
- New North Frontage Road

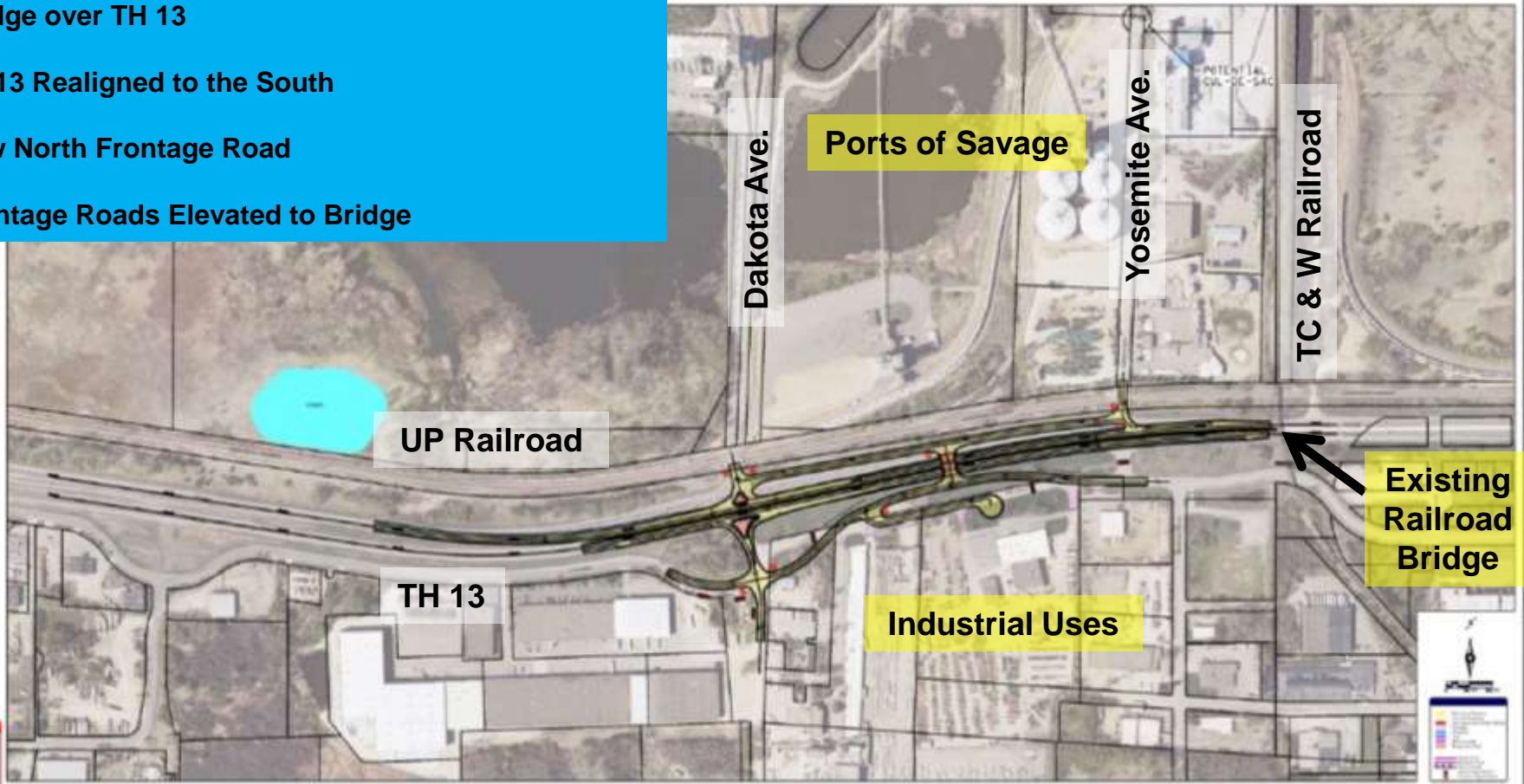


Estimated Cost : \$30 to \$35 million



Concept D: Overpass Between Dakota Avenue and Yosemite Avenue

- Bridge over TH 13
- TH 13 Realigned to the South
- New North Frontage Road
- Frontage Roads Elevated to Bridge



Estimated Cost : \$32 to \$37 million



Evaluation Considerations

Criteria/Performance Measure

Overall TH 13 Mobility/Forecasted TH 13 LOS & Railroad Grade Separation

Local Travel Time/Average Minutes Per Vehicle

Safety/Crash Reduction/Reduction of At-Grade Access

Construction and Right-of-Way Costs/Order of Magnitude Costs

Freight Mobility/Route Directness, Turns, Acceleration/Deceleration

Railroad Crossing Benefits/Safety and Traffic Benefits

Environmental/Historical/Drainage/Degree to Which Impacts are Minimized

Transit Benefits/Functionality of Transit Only Bus Shoulder

Freight Funding Potential/Overall Significance of Freight Improvements



Evaluation Summary

January 27, 2017

Evaluation Criterion	Performance Measure	Build Design Concepts				
		Concept A - Dakota Avenue Diamond Interchange and Railroad Grade Separation (Design Charrette Layout 1)	Concept B - Dakota Avenue Grade Separation, Access Via Yosemite Avenue (Design Charrette Layout 4)	Concept C - Dakota Avenue Tight Diamond Interchange (Design Charrette Layout 5)	Concept D - Grade Separation Between Dakota Avenue and Yosemite Avenue (Design Charrette Layout 8)	
Overall TH 13 Regional Mobility	Forecasted TH 13 LOS and Railroad Grade Separation	Highest level of overall TH 13 regional mobility. High level of mobility along TH 13 mainline and grade separated railroad.	Moderate-High level of overall TH 13 regional mobility. High level of mobility along TH 13 mainline, but no grade separated railroad.	Moderate-High level of overall TH 13 regional mobility. High level of mobility along TH 13 mainline, but no grade separated railroad.	Moderate-High level of overall TH 13 regional mobility. High level of mobility along TH 13 mainline, but no grade separated railroad.	
Local Travel Time	Average minutes/vehicle compared to existing condition (17.1 minutes total travel time existing condition)	High overall travel time reduction. 3.7 Minutes Total Travel Time/13.4 Minute Reduction from Existing Condition.	Moderate-High overall travel time reduction. 4.8 Minutes Total Travel Time/12.3 Minute Reduction from Existing Condition.	High overall travel time reduction. 4 Minute Total Travel Time/13.1 Minute Reduction from Existing Condition.	High overall travel time reduction. 3.6 Minutes Total Travel Time/13.5 Minute Reduction from Existing Condition.	
Safety/Crash Reduction	Reduction of at-grade access	Highest safety/crash reduction. All at-grade access removed from TH 13 and railroad.	Moderate-High safety/crash reduction. Eastbound right-in, right-out and westbound right-in at Yosemite Avenue. At-grade UP mainline and Port spurs remain.	Moderate-High safety/crash reduction. Right-in only access at Yosemite Avenue. At-grade UP mainline and Port spurs remain.	Low-Moderate safety/crash reduction. Dakota Avenue eastbound and westbound right-in, right-out, as well as westbound right-in only at Yosemite Avenue. At-grade UP mainline and Port spurs remain.	
Construction and Right-of-Way Costs	Planning level order of magnitude costs	Highest overall cost (\$45-\$53 Million) due to grade separation of TH 13, UP mainline and Port spurs. Requires UP mainline realignment and relocation of overhead transmission line. Construction: \$40 to \$48 Million Right-of-Way: \$5 to \$7.5 Million	Lowest overall cost (\$25-\$30 Million). Least amount of bridge structure, retaining wall and new frontage road. Construction: \$24 to 28 Million Right-of-Way: \$15 to \$1.5 Million	Moderate overall costs (\$30-\$35 Million). Tight diamond interchange at Dakota Avenue, but no grade separation of railroad. Construction: \$28 to \$32 Million Right-of-Way: \$15 to \$2.5 Million	Moderate overall cost (\$32-\$37 Million). Significant retaining wall required to address grade issues for south frontage road. Construction: \$31 to \$35 Million Right-of-Way: \$1 to \$2 Million	
Freight Mobility	Truck route directness, turns, acceleration/deceleration	Best truck access and truck routing. Lowest amount of potential turns and acceleration/deceleration. Diamond interchange at Dakota Avenue provides full EB/WB access to Port of Savage and south TH 13 businesses and grade separated railroad crossing.	Some circuitous truck access and truck routing. Highest amount of potential turns and acceleration/deceleration. Both Dakota Avenue and Yosemite Avenue have eastbound and/or westbound movement restrictions. At-grade railroad crossing remains.	Good truck access and truck routing. Second lowest amount of potential turns and acceleration/deceleration. Tight diamond interchange at Dakota Avenue provides full EB/WB access to Port of Savage and south TH 13 businesses. At-grade railroad crossing remains.	Some circuitous truck access and truck routing. Highest amount of potential turns and acceleration/deceleration. Both Dakota Avenue and Yosemite Avenue have eastbound and westbound movement restrictions. At-grade railroad crossing remains.	
Railroad Crossing Benefits	Railroad crossing safety and traffic benefits	Best rail crossing benefit. Eliminates all at-grade rail crossings.	Less desirable than Alternative A, but significantly better than Alternative D.	Less desirable than Alternative A, but significantly better than Alternative D.	Least desirable, as train blocking Dakota Avenue could gridlock this entire intersection for all movements.	
Environmental/Historic/Drainage	Degree to which impacts are minimized	Most environmental and drainage impacts. Potential impacts to DNR public water NW of Dakota Avenue intersection. Impacts to existing parking lot south of Dakota Avenue.	Lowest environmental and drainage impacts. Least amount of new construction of all alternatives.	Some environmental and drainage impacts. Some impact to parking lot south of Dakota Avenue.	Some environmental and drainage impacts. Some impacts to property south of TH 13 between Dakota Avenue and Yosemite Avenue.	
Transit Benefits	Mobility of transit only bus shoulder	Highest transit mobility. No direct TH 13 access or potential truck queuing on TH 13 shoulder.	Low-moderate transit mobility. Right-in-right-out access eastbound at Yosemite Avenue and right-in only access westbound at Yosemite Avenue. Truck queuing could occur along shoulder at this location.	Second highest transit mobility. One right-in only access off of TH 13 westbound at Yosemite Avenue. Truck queuing could occur along shoulder at this location.	Lowest transit mobility due to right-in/right-out access eastbound and westbound at Dakota Avenue and westbound right-in only access at Yosemite Avenue. Truck queuing could occur eastbound along shoulder at Yosemite Avenue and Dakota Avenue.	
Freight Funding Potential	Overall level of freight improvements	Highest freight funding potential of all alternatives due to grade separation of TH 13 and UP mainline and Port spurs.	Moderate-High freight funding potential. Some truck benefits with grade separation under TH 13 at Dakota Avenue. However, eastbound trucks must exit/enter TH 13 at-grade at Yosemite Avenue and at-grade railroad crossings remain.	Moderate-High freight funding potential. Some truck benefits with tight diamond interchange at Dakota Avenue. However, at-grade railroad crossings remain.	Moderate-High freight funding potential. Some truck benefits from left turns using bridge between Dakota Avenue and Yosemite Avenue. However, at-grade railroad crossings remain.	
		Evaluation Criteria Scale				
		Low	Low-Moderate	Moderate	Moderate-High	High
Color Scale		1	2	3	4	5
Score		1	2	3	4	5



Order of Magnitude Comparison

Evaluation Criterion**	Performance Measure	Build Design Concepts			
		Concept A - Decade Avenue Overpass Interchange and Revised Street Separation (Design Alternative Concept A)	Concept B - Decade Avenue Street Separation, Access via Intersecting Avenue (Design Alternative Concept B)	Concept C - Decade Avenue Light Rail/Street Interchange (Design Alternative Concept C)	Concept D - Decade Avenue Interchange (Design Alternative Concept D)
Overall Traffic Congestion Mobility	As modeled for 2035 and forecast Street Separation	High	Intermediate-high	Intermediate-high	Intermediate-high
Local Travel Time	Average minutes/vehicle compared to existing condition	High	Intermediate-high	High	High
Walking/Cross-Street	Reduction of engine idles	High	Intermediate-high	Intermediate-high	Low-Intermediate
Construction & Right-of-Way Cost	Relative cost order of magnitude	Low	High	Intermediate	Intermediate
Freight Mobility	Truck route directness, turns, acceleration/deceleration	High	Low-Intermediate	Intermediate-high	Low-Intermediate
Reduced Crossing Benefits	Reduced crossing utility and safety benefits	High	Intermediate	Intermediate	Low
Environmental/Reliability/Drainage	Degree to which impacts are minimized	Low	High	Intermediate-high	Intermediate-high
Travel Benefits	Ability of travel only bus shoulder	High	Low-Intermediate	Intermediate-high	Low
Freight Funding Potential	Overall level of freight improvements	High	Intermediate-high	Intermediate-high	Intermediate-high
Total Score		37	33	35	28
Overall Score		Low	Intermediate	Intermediate-high	High
Score		1	2	3	4

- All concepts provided significant improvement compared to “do-nothing”
- Concepts A, B, B1 and C all performed well, but had different pros and cons
- Concept D was least preferred because it had the most indirect access



Funding and Implementation



MN Freight Investment Plan

Critical Urban and Rural Freight Corridors
 \$99.55 Million Programmed: FY 2019 – FY 2022



Minnesota State Freight Investment Plan

For State Fiscal Years 2016-2027

November 2017

Table 5. Projects Selected Fiscal Years 2019-2022

Fiscal Year	Project	Amount (in millions)
2019	Freight Planning – District Plans & Other	\$0.2
2019	Sherburne County CR 45 at 125 th Street/9 th Avenue Circle Intersection Improvement	\$0.8
2019	Detroit Lakes Randolph Road Improvements	\$1.5
2019	Duluth Port Intermodal Container Terminal Expansion	\$1.9
2019	Winona Riverview Drive Reconstruction	\$2.8
2019	Sherburne County CSAH 8 Reconstruction	\$3
2019	District 6 East Area Improvements	\$3.6
2019	District 1 Twin Ports Interchange Reconstruction	\$6
2020	Freight Planning – District Plans & Other	\$0.2
2020	Chaska MN41 Downtown Improvements	\$4
2020	Dakota County CSAH 70 Expansion	\$7
2020	Brooklyn Center MN 252/161 st Avenue North Interchange Improvements	\$10
2021	Freight Planning – District Plans & Other	\$0.2
2021	Scott County CSAH 83 Reconstruction	\$0.39
2021	South St. Paul Concord Street Improvements	\$7.36
2021	Anoka US 10/US 169 Safety and Mobility Improvements	\$20
2022	Freight Planning – District Plans & Other	\$0.2
2022	Scott County MN 13 Port Access and Mobility	\$15
2022	Carver County US 212 Freight Bottleneck Improvements	\$15

Implementation



Next Steps:

- Continued Collaboration between Agencies
- Additional Funding
 - Corridors of Commerce Funding?
 - Met Council Federal Project Solicitation?
 - Scott County Transportation Sales Tax?
 - MnDOT Funding?
- Preliminary Design/Corridor Analysis
 - Summer 2018
- Construction (2022)!