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Community Advisory Committee (CAC)

April 28, 2010

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Agenda

- Updates
 - Member Updates
 - Project Schedule (DEIS/LPA Process/PE Application)
 - Legislative
- Hear From An Expert
 - Noise and Vibration
 - Traffic Impacts
- Station Area Planning – Status of Minneapolis Work
- 2010 Meeting Schedule
- Open Forum

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DEIS Public Meetings

May 18, 2010 (11:30 am - 1:00 pm)

(Community Meetings) Minneapolis Central Library
300 Nicollet Mall
Minneapolis, MN 55401

May 19, 2010 (5:00 pm - 7:00 pm)

(Community Meetings) SouthWest Transit Station
13500 Technology Drive
Eden Prairie, MN 55344

May 20, 2010 (5:00 pm - 7:00 pm)

(Community Meetings) St. Louis Park City Hall
5005 Minnetonka Blvd.
St. Louis Park, MN 55416

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Open House Format

3 Informational Stations:

- **DEIS Update Station**
- **Historic and 4(f) Resources Station**
- **Locally Preferred Alternative (LPA) Station**

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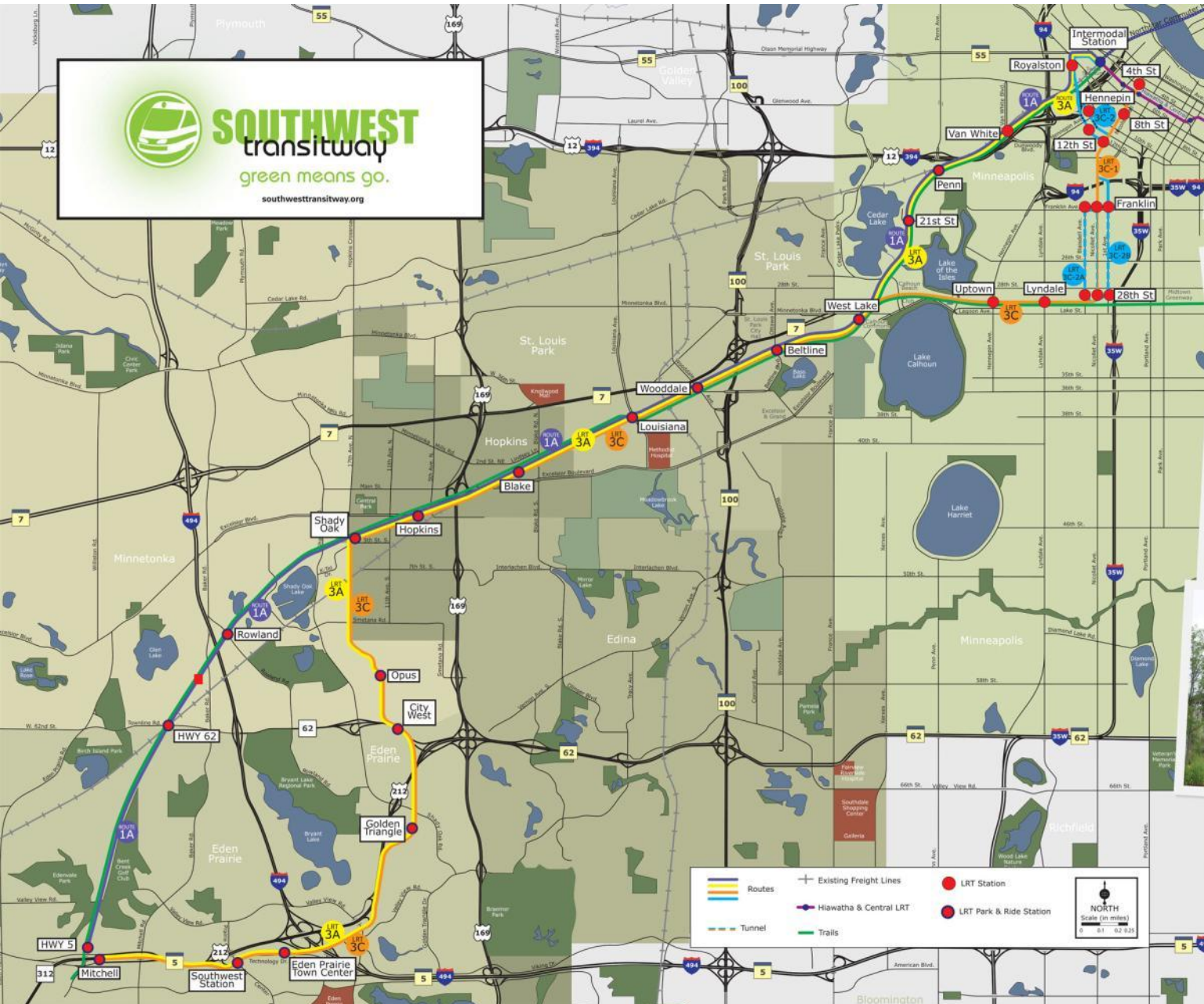
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DEIS Update Station

- Map of Alternatives Considered in the DEIS
- Project Schedule Exhibit
- NEPA Process Exhibit
- Public Process to date Exhibit
- Outline DEIS Topics Exhibit
- Map of Year 2030 Build/No Build Congestion
- Noise & Vibration Overview Exhibit
- Map of Noise & Vibration Resources
- Map of Water Resources (Water bodies, wetlands, floodplains etc.)
- Map of Community Facilities (SWT trails, parks, schools, etc)

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Historic & 4(f) Resources

- Historic Resources Exhibit and example photographs
- 4(f) Resources Exhibit

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LPA Station

- Handouts will be developed by the County for the following topics; Station Area Planning, community works, LPA Selection Process.
- Boards from LPA Public Hearing

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DEIS Technical Updates

Noise and Vibration

Traffic

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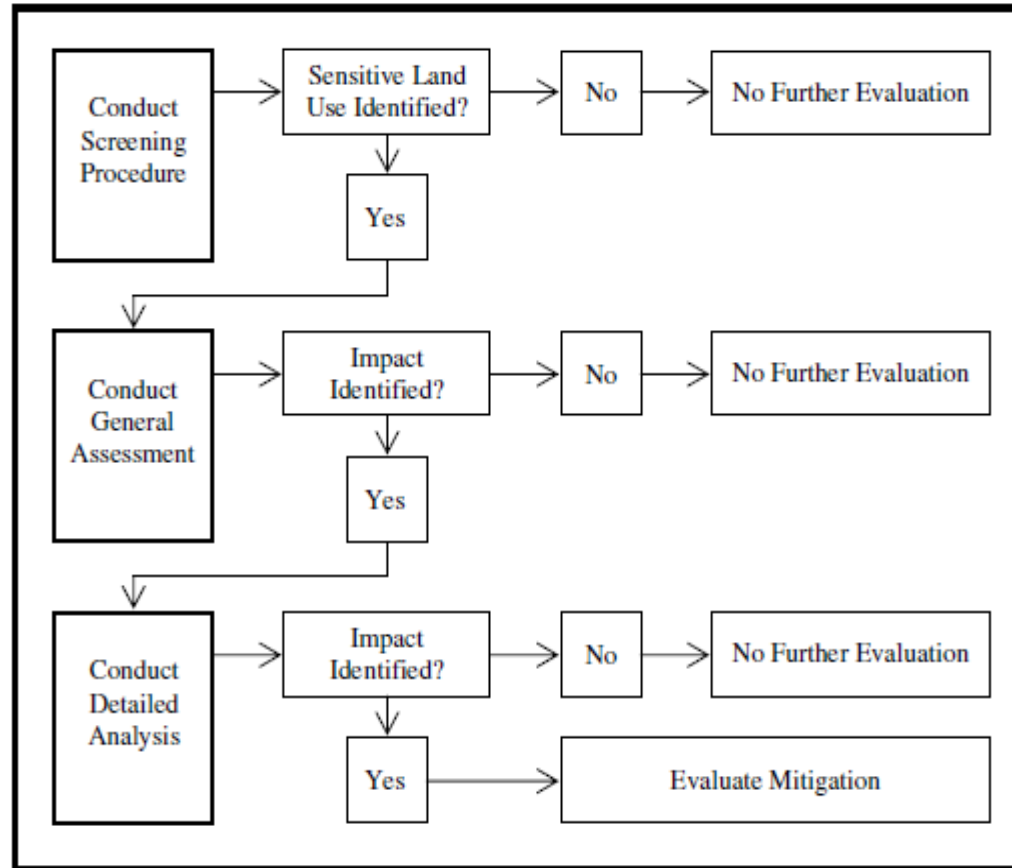
Noise and Vibration Analysis Methodology - Overview

- The noise and vibration assessment methods are based on guidance published by the FTA.
- 3-tiered assessment
 - Screening
 - General
 - Detailed
- If potential for noise or vibration impacts are found at the first or second level of assessment the analyst is directed to implement the next more rigorous assessment.



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Noise and Vibration Analysis Overview

Noise:

- FTA significance criteria for noise is based on land use and existing noise levels.
 - Severe
 - Moderate
- Existing Noise Levels
 - Long term (24-hr) measurements
 - Series of short term measurements



Noise and Vibration Analysis Overview

Noise:

Project Related Noise Levels

- Source factors
 - Measurement of Hiawatha LRT operational noise levels
 - Speed
 - Use of audible warning devices
- Path factors
 - Shielding
 - Ground effect
- Receiver factors
 - Identification of noise-sensitive receptors
 - Calculated project-related noise levels at representative receptors

Noise and Vibration Analysis Overview

Alternative	Land Use Category	Number of Potential Moderate Noise Impacts	Number of Potential Severe Noise Impacts
LRT 1A	Category 1	1	0
	Category 2	611	350
	Category 3	3	2
Total Number of 1A Impacts		615	352
LRT 3A	Category 1	2	0
	Category 2	307	223
	Category 3	0	1
Total Number of 3A Impacts		309	224
LRT 3C-1	Category 1	2	0
	Category 2	454	264
	Category 3	0	0
Total Number of 3C-1 Impacts		456	264
LRT 3C-2	Category 1	2	0
	Category 2	608	312
	Category 3	0	0
Total Number of 3C-2 Impacts		610	312

Category 1 – Tracts of land where quiet is an essential element in their intended purpose – amphitheatres, recording studios, concert halls

Category 2 – Residences and buildings where people normally sleep

Category 3 – Institutional land uses with primarily daytime and evening use, such as schools, libraries, and churches



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Noise and Vibration Analysis Overview

- Noise Mitigation Options
 - Source treatments
 - Maintenance
 - Operational changes
 - Track design
 - Wheel skirts
 - Path treatments
 - Receiver treatment

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Noise and Vibration Analysis Overview

Vibration:

- FTA significance criteria for vibration is based on land use and frequency of events.
- Land Use Category
 - Category 1 – High Vibration Sensitivity
 - Category 2 – Residential
 - Category 3 – Institutional



Noise and Vibration Analysis Overview

Vibration:

- Source factors
 - Track configuration/type
 - Special track work
 - Speed
 - Wheel conditions
- Path factors
 - Geological conditions (soil type, bedrock)
- Receiver factors
 - Foundation
 - Building construction
- Mitigation options

Noise and Vibration Analysis Overview

Build Alternative	Land Use Category	Number of Potential Vibration Impacts (No. of Units)
LRT 1A	Category 1	1
	Category 2	254 (366)
	Category 3	2
Total Number of 1A Impacts		257 (370)
LRT 3A	Category 1	3
	Category 2	142 (483)
	Category 3	5
Total Number of 3A Impacts		150 (491)
LRT 3C-1	Category 1	4
	Category 2	95 (574)
	Category 3	5
Total Number of 3C-1 Impacts		104 (583)
LRT 3C-2	Category 1	6
	Category 2	204 (990)
	Category 3	6
Total Number of 3C-2 Impacts		216 (1002)



Noise and Vibration Analysis Overview

- Vibration Mitigation Options
 - Source treatments
 - Maintenance
 - Operational changes
 - Track support
 - Special trackwork
 - Path treatments
 - Receiver treatments



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Traffic Analysis for DEIS

- Scope of Study
 - Analyze the impact of the Southwest LRT alternatives on vehicular traffic
 - LRT crossing locations
 - Adjacent intersections
 - Transit station impacts were not addressed (limited information available)

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Crossings Identified

SEGMENT	CROSSING		
	ROADWAY	GRADE SEPARATED	AT-GRADE
1	Valley View Rd	X	
	Edenvale Blvd		X
	W 62nd St		X
	CSAH 62	X	
	Baker Rd		X
	I-494	X	
	Rowland Rd		X
	Dominick Dr		X
3	CSAH 61	X	
	Mitchell Rd		X
	SW Station Bus Entrance		X
	Prairie Center Dr	X	
	Technology Drive		X
	I-494	X	
	Flying Cloud Drive	X	
	Viking Drive	X	
	Valley View Rd		X
	Flying Cloud Dr		X
	W. 70th St.		X
	Flying Cloud Dr	X	
	Shady Oak Road	X	
	TH 212	X	
	TH 62	X	
	Red Circle Drive	X	
	Bren Rd E.		X
Bren Rd W.		X	
Smetana Rd		X	
K-Tel Dr		X	
4	16th Ave Extension		Proposed
	11th Ave		X
	8th Ave		X
	5th Ave		X
	TH 169	X	
	CSAH 3	X	
	Blake Rd		X
	Louisiana Ave	X	
	Wooddale Ave		X
	TH 100	X	
Belt Line Blvd		X	
A	West Lake Street	X	
	Cedar Lake Pkwy	X	
	Burnham Rd	X	
	21st St.		X
	I-394	X	
	West Lyndale Ave	X	
	I-94	X	
	East Lyndale Ave	X	
Glenwood Ave	X		
Royalston Avenue N.		X	
HERC Facility Entrance		X	

SEGMENT	CROSSING		
	ROADWAY	GRADE SEPARATED	AT-GRADE
C	Dean Pkwy	X	
	West Calhoun Pkwy	X	
	James Ave		X
	Irving Ave		X
	Humboldt Ave		X
	Hennepin Ave	X	
	Fremont Ave	X	
	Emerson Ave	X	
	Dupont Ave	X	
	Colfax Ave	X	
	Bryant Ave	X	
	Aldrich Ave	X	
	Lyndale Ave	X	
	Garfield Ave	X	
	Harriet Ave	X	
	Grand Ave	X	
	Pleasant Ave	X	
	Pillsbury Ave	X	
	Blaisdell Ave	X	
	Nicollet Ave	X	
	29th Street	X	
	28th Street	X	
	27th Street	X	
	26th Street	X	
	25th Street	X	
	24th Street	X	
	22nd Street	X	
	Franklin Ave	X	
	E. 19th St/Groveland Ave		X
	E. 18th St.		X
	I-94	X	
	E. 16th St.		X
	W. 15th St.		X
	E. 15th St.		X
	W. 14th St.		X
	W. Grant St		X
	W. 13th St.		X
	W. 12th St.		X
	W. 11th St.		X
	W. 10th St.		X
	W. 9th St.		X
	W. 8th St.		X
	W. 7th St.		X
	W. 6th St.		X
	W. 5th St.		X
	W. 4th St.		X
	W. 3rd St.		X
LaSalle Ave		X	
Harmon Pl.		X	
Hennepin Ave		X	
Hawthorne Ave		X	
Glenwood Ave		X	

102 Crossings

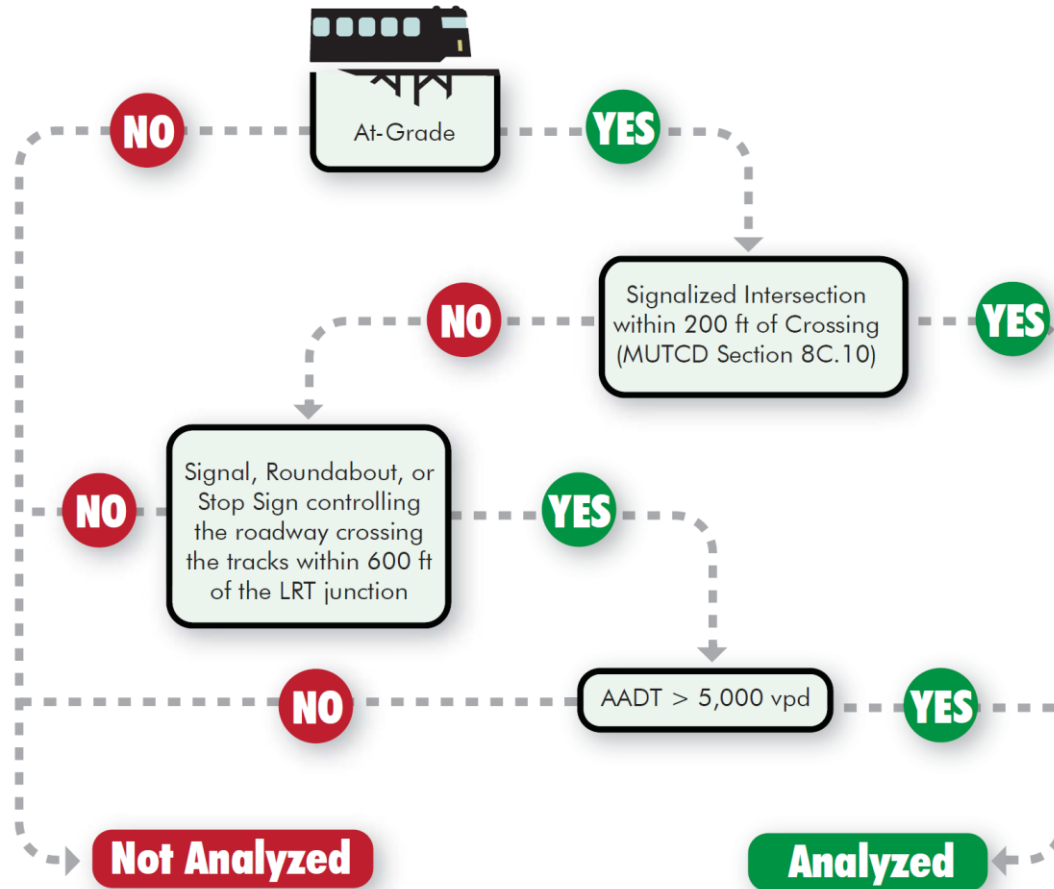
- 51 Grade Separated
- 51 At-grade

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Southwest Transitway Roadway Crossing Analysis Decision Tree



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Intersections Studied

Model #	Location Code	Intersection
Major Segment 3 (LRT 3A, 3C, & 3C Sub Alternatives)		
1	1	TH 5 North Ramp & Mitchell Rd
	2	TH 5 South Ramp & Mitchell Rd
	3	Lone Oak Rd & Mitchell Rd
	4	Technology Drive & Mitchell Rd
2	5	Bryant Lake Dr & Valley View Road
	6	Flying Cloud Dr & Valley View Road
	7	Praire Center Dr & Valley View Road (East Jct)
	8	Viking Dr & Praire Center Dr
Major Segment 4 (All Alternatives)		
3	9	CSAH 3 & 17th Ave
	10*	5th Street & 16th Ave
4	11	CSAH 3 & 11th Ave
	12	CSAH 3 & 8th Ave
5	13	CSAH 3 & 5th Ave
	14	2nd Street & Blake Rd. N.
6	15	Blake Rd. N. & CSAH 3
	16	TH 7 WB On-Ramp & Woodale Ave.
7	17	TH 7 EB Off-Ramp & Woodale Ave.
	18*	TH 7 Frontage Rd & Woodale Ave.
	19	36th St & Woodale Ave.
7	20	CSAH 25 & Belt Line Blvd
	21*	CSAH 25 S. Frontage Rd & Belt Line Blvd

Model #	Location Code	Intersection
Major Segment C (LRT 3C & 3C Sub Alternatives)		
8	22	28th St & Nicollet Ave
9	23	Blaisdell Ave & Franklin Ave
	24	Nicollet Ave & Franklin Ave
	25	1st Ave & Franklin Ave
10	26	W 15th St & Nicollet Ave S
	27	W Grant St & Nicollet Ave S
	28	13th St S & Nicollet Ave S
	29	12th St S & Nicollet Ave S
	30	11th St S & Nicollet Ave S
	31	S 10th St & Nicollet Ave S
	32	S 9th St & Nicollet Ave S
	33	S 8th St & Nicollet Ave S
	34	S 7th St & Nicollet Ave S
	35	S 6th St & Nicollet Ave S
	36	S 5th St & Nicollet Ave S
	37	S 4th St & Nicollet Ave S
	38	S 3rd St & Nicollet Ave S
	11	39
40		11th St S & Harmon Pl
41		11th St N & Hennepin Ave
42		11th St N & Hawthorne Ave
43		12th St S & LaSalle Ave
44		12th St S & Harmon Pl
45		12th St N & Hennepin Ave
46		12th St N & Hawthorne Ave
12	47	Glenwood Ave & Royalston Ave N

47 Intersections

- 44 Signalized
- 3 Unsignalized

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Example from Alternative LRT 3A



Figure 6
Major Segment 3
Alignments and Intersection Location Codes

Legend

Major Segment 3	Existing Railroad	Municipal Boundaries
Location Code	Grade Separated Crossing	At Grade Crossing

0 1,500 Feet



Traffic Data

- AM/PM peak turning movement counts were used (April 5, 2008 or newer)
- Counts were performed between February 10th and March 10th, 2010
- Analysis looked at:
 - Existing year 2010
 - Opening year 2017 (1.03 growth factor)
 - Design year 2030 (1.12 growth factor)
- Major geometric improvements that would affect operations were considered (CIPs, STIP, etc.)



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Analysis

- Operational Level of Service (LOS) evaluation based on delay and queue lengths
- Analysis tools – Synchro/SimTraffic
 - Synchro: geometry, count data, and optimize signal timing
 - SimTraffic: micro-simulation, vehicle delay, and queue lengths





Results

- Major Segment 1 – No intersections analyzed
- Major Segment 3 – Future deficiencies
 - Bryant Lake Drive/Valley View Road
 - Flying Cloud Drive/Valley View Road
 - Prairie Center Drive/Valley View Road
 - Prairie Center Drive/Viking Drive
- Major Segment 4 – Future deficiencies
 - Belt Line Boulevard/CSAH 25 South Frontage Road



Results (continued)

- Major Segment A – No intersections analyzed
- Major Segment C – No deficiencies for main alignment (Nicollet Avenue)
 - Blaisdell Avenue sub-alternative – degrade LOS in 2030 PM peak at Franklin Avenue/1st Avenue intersection
 - 1st Avenue sub-alternative – not analyzed since tunnel extends north of Franklin Avenue
 - 11th/12th Street sub-alternative – no deficiencies



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General Mitigation

- General mitigation measures recommended:
 - Optimized signal timing
 - Detection of LRT to coordinate priority where needed
 - New signal controllers, pedestrian controllers, and signage at signalized intersections
 - Protected left and right turn lanes at specific intersections (operational changes)





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Potential Mitigation

- Mitigation for intersections forecast to operate at LOS E or F:
 - Lengthen turn lanes
 - Additional turn lanes as needed
 - Adding additional capacity to parallel routes
 - Possible grade separation between the roadway and LRT alignments

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Questions?

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