TRANSPORTATION ADVISORY BOARD

Metropolitan Council, 390 Robert Street North, Saint Paul, Minnesota 55101

NOTICE OF A MEETING
of the
PLANNING COMMITTEE
Thursday, November 9, 2017
1:00 PM – Metropolitan Council, Room LLA
390 Robert Street N, Saint Paul, MN

AGENDA

1) Call to Order

2) Adoption of Agenda

3) Approval of the Minutes from the October 2017 Meeting

4) Action Items
   1. 2017-37: Functional Class 1351-1352 Stillwater Bridge Changes (Rachel Wiken)
   2. 2017-38: Regional Solicitation - Approve Updated RBTN Map (Steve Elmer)
   3. 2017-39: MAC 2018-2023 CIP (Russ Owen)
   4. 2017-41: Proposed Safety Performance Measures and Short-Term Targets (Dave Burns)

5) Info Items
   1. Info: TPP Update- Equity and Environmental Chapters (Heidi Schallberg)
   2. Info: TPP Update - Highway/freight investments (Steve Peterson)
   3. Info: TPP Update - Aviation draft chapter (Russ Owen)
   4. Info: TPP Update - Transit Draft Chapter (Cole Hiniker)
   5. Info: Bike Barriers Study (Steve Elmer)

6) Other Business

7) Adjournment

Full Meeting Packet

TRANSPORTATION ADVISORY BOARD
Metropolitan Council
390 N. Robert St., St. Paul, Minnesota 55101-1805

Notes of a Meeting of the
TAC-PLANNING COMMITTEE
October 12th, 2017

MEMBERS PRESENT: Holly Anderson, Jack Byers, Charlie Cochrane, Paul Czech, Bill Dermody, Innocent Eyoh, Jack Forslund, Lisa Freese, Jean Keely, Elaine Koutsoukos, Michael Larson, Joe Lux, Jason Pieper, Rachel Wiken

OTHERS PRESENT: Emily Jorgensen (Washington County), David Burns, Daniel Peña, Aaron Bartling, Tony Fischer, Connie Kozlak, Cole Hiniker, Steve Elmer.

1. Call to Order

The Meeting was called to order by Lisa Freese.

2. Adoption of the Agenda

3. Approval of the Minutes from the Sept 2017 meetings

Minutes were amended to note the excused absence of Jean Keely. Koutsoukos moved, Forslund seconded. Motion passed.

4. Action Item 2017-27 MPO MOU (Katie White)

Connie Kozlak presented for Katie White, who was on vacation.

In Nov 2016, the Federal Highway Administration and Federal Transit Administration recommended in the Transportation Management Area Certification Review of the Met Council updating the memorandum of understanding between the Met Council MPO and MnDOT. The current MOU was from Dec 2008. With changes to policy and funding programs, the current MOU did not reflect currenting planning efforts. Lux moved, Eyoh second. Motion passed.

5. Info Items

1) Revised 2018 UPWP – Katie White

Connie Kozlak presented changes to the Unified Planning Work Program. After the UPWP had gone through committee for approval (including TAC Planning) the FHWA had asked for edits. Major edits included adding more description, rewriting the CMP chapter, and correcting typos/deadlinks.

2) RBTN Changes - Steve Elmer

Steve Elmer presented changes to the Regional Bikeway Transportation Network. These proposed changes came from input from city / county engineering and planning staff, review by bike/ped peer group, the regional solicitation process, and communication with local agencies since the last TPP update.

Elmer walked through maps highlighting new corridors and deleted corridors. He also provided a few copies of detailed list of changes by county. County level maps will be available online.

3) **TPP Update - Strategies Comments - Amy Vennewitz / Cole Hiniker**

At the September TAC Planning meeting, Cole Hiniker had handed out the strategies chapter and asked the committee to review. This month, Amy Vennewitz asked for feedback from the committee. The committee asked questions about the organization of the goals and strategies. There were several comments on clarifying language and better organization.

Chair Freese suggested based on the comments, including some duplication between commenters and what had been submitted, that staff provide a better system for interactive commenting, so that the committee could see what had been submitted and add to others' comments. Vennewitz said she would bring an update to the next meeting.

4) **TPP Update - Transit Investments Overview - Cole Hiniker**

Cole Hiniker presented a PPT highlighting the changes coming in the draft Transit chapter, which will be presented at TAC Planning in October.

The map of the Current Revenue Scenario Transitways was edited to show the removal of the CTIB priority projects, removal of Chicago Emerson Fremont BRT, and the addition of Rush Line.

The Increased Revenue Scenario still includes 1% expansion, which Hiniker clarified was 1% transit service expansion, not 1% funding expansion.

Hiniker also commented on the fiscal changes, including a new sales tax to replace the state share for capital funding.

Bill Dermody asked if the Riverview corridor would be shown going to the Ford Site. Hiniker replied that it would not until the Riverview study was complete. That change would be amended to the plan.

The full presentation can be seen here. https://metrocouncil.org/Council-Meetings/Committees/Transportation-Advisory-Board-TAB/TAB-Technical-Advisory-Committee/TAC-Planning-Committee/2017/TAC-Planning-Committee-10-12-17/Oct_5_4_Transit-Investments-2017-10-12-TAC-Plannin.aspx

5) **TPP Update – Land Use Draft Chapter – Cole Hiniker**

Hiniker handed out the redlined chapter of the Land Use Chapter and asked for committee to provide feedback.

6) **Highway Revenue / Finance – Tony Fischer**

Tony Fischer quickly walked through a powerpoint explaining changes to highway revenues. Committee talked about construction cost index and how inflation prices were determined. As the meeting was already over time, the discussion was brief. Feedback encouraged to Fischer or Steve Peterson. Full PPT https://metrocouncil.org/Council-Meetings/Committees/Transportation-Advisory-Board-TAB/TAB-Technical-Advisory-

Committee/TAC-Planning-Committee/2017/TAC-Planning-Committee-10-12-17/Oct_5_6_revenue-TAC-Planning.aspx

5. Other Business

none

6. Adjournment

Adjourn at 3:20pm

ACTION TRANSMITTAL – 2017-37

DATE:	10-25-17
TO:	TAC Planning
FROM:	MTS Staff
PREPARED BY:	Rachel Wiken, Planner, 651-602-1572
SUBJECT:	Functional Class Changes 1351-1352: TH 95 after Stillwater bridge opening
REQUESTED ACTION:	MnDOT requests changing the functional classification of Minnesota Highway 95 to A-minor connector and Chestnut Street in Downtown Stillwater to local.
RECOMMENDED MOTION:	That TAC Planning recommend to TAC the approval of the changes as submitted.

BACKGROUND AND PURPOSE OF ACTION: The new trunk highway (TH) 36 Stillwater bridge opened in August 2017. Once completed, the planned principal arterial (PA) on this alignment became the existing PA connection. This left a short stub of PA on TH 95 heading north from TH 36 to Downtown Stillwater, which does not connect to any other PA.

Without action, this section of TH 95 is a dead-end principal arterial. This functional class request is a correction to remove the PA designation from this section and designate TH 95 as an A-minor connector. TH 95 is currently an A-minor connector from Hastings to Scandia, with only a short break of PA between Highway 36 and the old bridge location. This change would provide a logical and contiguous functional classification.

The short section of Chestnut Street in Downtown Stillwater from TH 95 to the St. Croix River is currently a principal arterial and is proposed to return to local. The road is a dead end at the former vehicular bridge, which will open for bicycle and pedestrian traffic across the river in 2019.

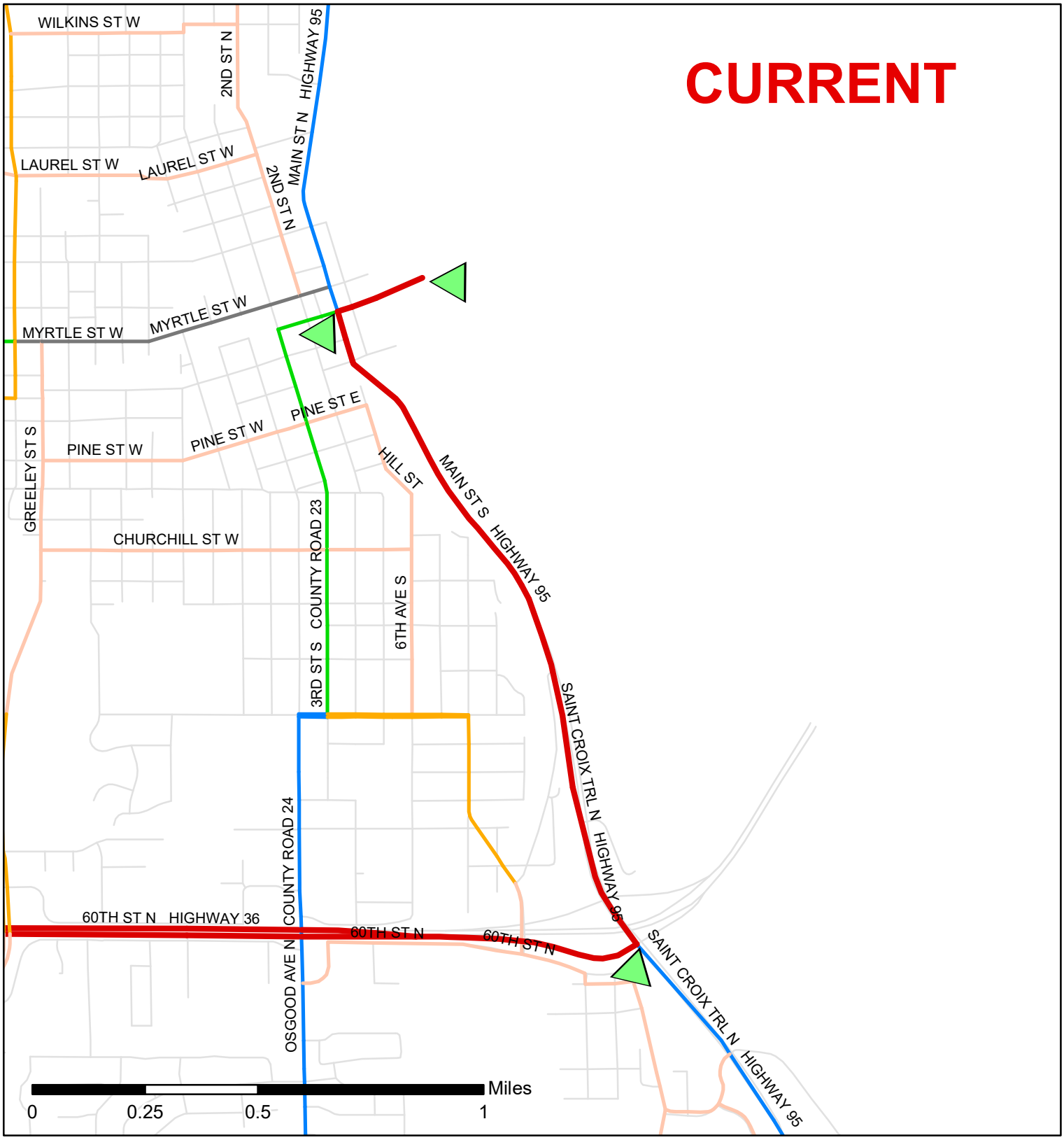
STAFF ANALYSIS: Staff initiated this change, as the current data are incorrect and not in compliance with functional class policy. Staff recommends approval.

ROUTING

TO	ACTION REQUESTED	DATE COMPLETED
TAC Planning or Funding & Programming Committee	Review & Recommend	
Technical Advisory Committee	Review & Recommend	

Functional Class Roads Change Requests
MnDOT

ID# 1351-1352



Existing Regional Functional Class Roads

- Principal Arterial
- B Minor
- Major Collector
- Minor Collector
- A Minor Augmentor
- A Minor Reliever
- A Minor Expander
- A Minor Connector

Planned Regional Functional Class Roads

- Principal Arterial
- B Minor
- Major Collector
- Minor Collector
- A Minor Augmentor
- A Minor Reliever
- A Minor Expander
- A Minor Connector

N

City / Township Boundaries

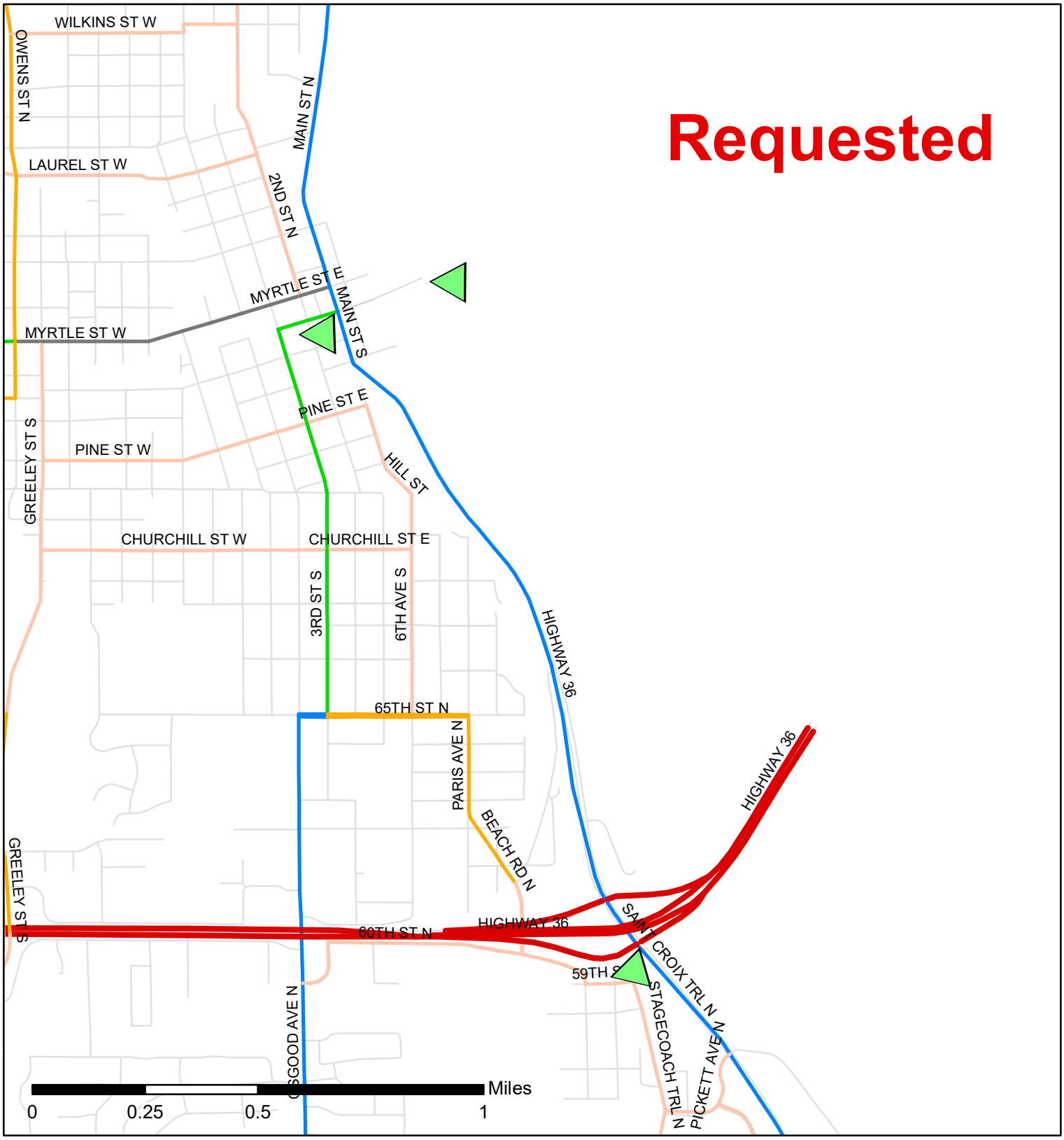
Street Centerlines

County Boundaries

10-25-17

Functional Class Roads Change Requests
MnDOT

ID# 1351-1352



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Planned Regional Functional Class Roads

- Principal Arterial
- B Minor
- Major Collector
- Minor Collector
- A Minor Augmentor
- A Minor Reliever
- A Minor Expander
- A Minor Connector

N

City / Township Boundaries

Street Centerlines

County Boundaries

10-25-17

Regional Functional Classification Change Request Form

ID Number: *1351*

Date of Request: *10-11-17*

Roadway Name: TH 95 (St. Croix Trail)

Roadway CSAH #
Roadway County Rd #
Roadway MSA #
Request Type: Existing

Functional Classification Information:

Existing Roadway
Current Classification: **Principal Arterial**

Requested Classification:
A Minor Connector
If other:
Planned to existing **Contingent Conditions: ----------**
Other / Explain:

Planned Roadway
Current Classification: **----------**
Requested Classification: **----------**
If other:

Request Information:

Change Start Location: **At TH 36 in Stillwater**
Change End Location: **Along Chestnut Street at Stillwater Lift Bridge**
Length of Requested Change (Miles): **1.7**
Dependent on other Requested Changes: **Yes**
Road name(s) or ID Number(s) of dependent requests: **TH 36**
Involves other jurisdictions (**Yes**) If "yes" please attach letter(s) of support

Purpose of Change: Please explain rationale for requested Change

The completion of the new St. Croix Crossing Bridge has altered traffic patterns along portions of TH 95 and TH 36. Prior to the bridge opening, TH 95 ran concurrently with TH 36 from a point near 59th Street to Chestnut Street. At the intersection of TH 95 (St. Croix Trail) and Chestnut, TH 95 continues north through Washington County. East of this intersection, TH 36 continues from TH 95 to approximately 500 east to the Stillwater Lift Bridge.

Currently, the portions of TH 95 and TH 36 that served to carry traffic over the Stillwater Lift Bridge now exist as dead-end Princinpal Arterial stubs. The proposed request calls for changing the designation of TH 95 between the new TH 36 alignment and Chestnut Street as an A-minor Connector.

Following Section Required for All Principal and Minor Arterial Requests

Criteria: Illustrate how the requested change to a roadway functional classification complies with the following criteria:

Place Connections: Provides direct connections between urban centers and to principal arterials

Regional Functional Classification Change Request Form

ID Number: *1351*

Date of Request: *10-11-17*

Spacing: The nearest A-minor connector is at TH 36 and Osgood, approximately 0.7 miles away

Management: Function of roadway has changed. TH 95 in this section is no longer the principal arterial serving regional trips

System Connections & Access Spacing:

Trip Making Services: The section of TH 95 proposed for reclassification serves to provide local trips, as well as some regional trips

Mobility vs. Land Access: Most of this section of TH 95 serves a mobility function.

IF request impacts the A-Minor Arterial Sub-Classification, provide these attributes:
(from Table D-4 in TPP, http://metrocouncil.org/Transportation/Planning-2/Key-Transportation-Planning-Documents/Transportation-Policy-Plan-(1)/The-Adopted-2040-TPP-(1)/Final-2040-Transportation-Policy-Plan/2040-TPP-Appendix-D-Functional-Class.aspx)

Use: Connector
Location: Urban location of TH 95 in Stillwater
Trip Length: 1.7 miles
Problem Addressed: Reclassification of PA stub to relect change in use from new bridge crossing and realignment project

(Optional) **Typical Characteristics:** Providing the following to support the request

Intersection Treatments:

Present AADT:

Estimated Future AADT/Year:

Source of Estimated AADT/Date:

Posted Speed:

---------- Required for All Requests ----------

MAP: Please attach an 8.5 by 11 map of the requested change. Please include all appropriate labels and highlight the roadway in question.

Contact Information:

Agency/City/County: MnDOT Metro District

Regional Functional Classification Change Request Form

ID Number: *1351*

Date of Request: *10-11-17*

Contact Person: Michael Corbett
Phone: 651-234-7793 Fax:
Email: Michael.J.Corbett@state.mn.us
Address: 1500 W County Rd B2
City: Roseville State: MN Zip: 55113

---------- ***Committee Staff ONLY***----------

Staff Recommendation:

Consent Approval: -------
Technical Correction: -------
Staff Recommendation: Approve
MnDOT Consent: YES ☒ NO ☐ Comments:
Potential Issues:

Change Tracking:

TAC Planning Record of Decision: Date:
TAC Record of Decision: Date:
TAB Record of Decision (PA ONLY): Date:
Mn/DOT Notification: Date:

Geography Recorded: ------- *Date:*

Previous Action ID: *Date:*

Regional Functional Classification
Change Request Form

ID Number: *1352*

Date of Request: *10-11-17*

Roadway Name: TH 36 (Chestnut Street)

Roadway CSAH #
Roadway County Rd #
Roadway MSA #
Request Type: Existing

Functional Classification Information:

Existing Roadway
Current Classification: **Principal Arterial**

Requested Classification: **Local**
If other:

Planned Roadway
Current Classification: **----------**
Requested Classification: **----------**
If other:

Planned to existing **Contingent Conditions: ----------**
Other / Explain:

Request Information:

Change Start Location: **At TH 95 and Chestnut Street in Stillwater**
Change End Location: **At Stillwater Lift Bridge**
Length of Requested Change (Miles): **0.1**
Dependent on other Requested Changes: **Yes**
Road name(s) or ID Number(s) of dependent requests: **TH 95**
Involves other jurisdictions (**Yes**) If "yes" please attach letter(s) of support

Purpose of Change: Please explain rationale for requested Change
The completion of the new St. Croix Crossing Bridge has altered traffic patterns along portions of TH 95 and TH 36. Prior to the bridge opening, TH 95 ran concurrently with TH 36 from a point near 59th Street to Chestnut Street. At the intersection of TH 95 (St. Croix Trail) and Chestnut, TH 95 continues north through Washington County. East of this intersection, TH 36 continues from TH 95 to approximately 500 east to the Stillwater Lift Bridge.

Currently, the portions of TH 95 and TH 36 that served to carry traffic over the Stillwater Lift Bridge now exist as dead-end Princinpal Arterial stubs. The proposed request calls for changing the designation of this portion of TH 36 (Chestnut Street) Street as a local street.

Following Section Required for All Principal and Minor Arterial Requests

Criteria: Illustrate how the requested change to a roadway functional classification complies with the following criteria:

Place Connections: Local access only

Spacing: No limits

Management: Function of roadway has changed. TH 36 (Chestnut Street) in this section is no longer the principal arterial serving regional trips

Regional Functional Classification Change Request Form

ID Number: *1352*

Date of Request: *10-11-17*

System Connections & Access Spacing:

Trip Making Services: The section of TH 36 proposed for reclassification serves to provide local trips

Mobility vs. Land Access: This section of TH 36 serves a local access function.

IF request impacts the A-Minor Arterial Sub-Classification, provide these attributes:
(from Table D-4 in TPP, http://metrocouncil.org/Transportation/Planning-2/Key-Transportation-Planning-Documents/Transportation-Policy-Plan-(1)/The-Adopted-2040-TPP-(1)/Final-2040-Transportation-Policy-Plan/2040-TPP-Appendix-D-Functional-Class.aspx)

Use: Local
Location: Urban location of TH 36 in Stillwater
Trip Length: 0.1 miles
Problem Addressed: Reclassification of PA stub to relect change in use from new bridge crossing and realignment project

***(Optional)* Typical Characteristics:** Providing the following to support the request

Intersection Treatments:

Present AADT:

Estimated Future AADT/Year:

Source of Estimated AADT/Date:

Posted Speed:

---------- Required for All Requests ----------

MAP: Please attach an 8.5 by 11 map of the requested change. Please include all appropriate labels and highlight the roadway in question.

Contact Information:

Agency/City/County: MnDOT Metro District
Contact Person: Michael Corbett
Phone: 651-234-7793 Fax:
Email: Michael.J.Corbett@state.mn.us
Address: 1500 W County Rd B2
City: Roseville State: MN Zip: 55113

Regional Functional Classification Change Request Form

ID Number: *1352*

Date of Request: *10-11-17*

---------- ***Committee Staff ONLY***----------

Staff Recommendation:

Consent Approval: -------
Technical Correction: -------
Staff Recommendation: Approve
MnDOT Consent: YES ☒ NO ☐ Comments:
Potential Issues:

Change Tracking:

TAC Planning Record of Decision:	Date:
TAC Record of Decision:	Date:
TAB Record of Decision (PA ONLY):	Date:
Mn/DOT Notification:	Date:
Geography Recorded: -------	*Date:*
Previous Action ID:	*Date:*

ACTION TRANSMITTAL – 2017-38

DATE:	November 3, 2017
TO:	TAC Planning
PREPARED BY:	Steven Elmer, Planning Analyst, (651) 602-1756
SUBJECT:	Regional Bicycle Transportation Network (RBTN) Proposed Changes
REQUESTED ACTION:	Met Council requests that the updated RBTN map with new alignment designations and new or changed alignments and corridors be recommended for use in 2018 Regional Solicitation project selection.
RECOMMENDED MOTION:	That TAC Planning recommend approval of the RBTN Update Map for use in the 2018 Regional Solicitation.

BACKGROUND AND PURPOSE OF ACTION:
The RBTN was established in the 2040 Transportation Policy Plan in 2015 as the region's official bicycle network for transportation. The RBTN sets the region's priorities for bicycle planning and investment. The goal of the RBTN is to develop an integrated seamless network of on-street bikeways and off-road trails to effectively improve conditions for daily bicycle transportation and to encourage planning and implementation of future RBTN bikeways by local and state agencies.

The Met Council is the responsible government agency to designate the various corridors and alignments through the development and adoption of TPP updates. In 2017, Met Council staff initiated meetings with planning and engineering staff from all metro counties to review and discuss alignment designations and potential new alignment/corridor revisions or additions to the RBTN. Staff from key cities and/or MnDOT were also in attendance at several meetings. Follow-up meetings and communications by phone/e-mail were used to clarify issues or select between multiple options; additional cities were contacted during this phase to verify the proposed changes that had been agreed upon at county/city meetings.

The following specific types of administrative and substantive changes were considered through the RBTN review and TPP development process:

1. Designating alignments within existing corridors – Administrative change
2. Shifting existing corridors or alignments – Substantive change
3. Extending/truncating/removing an existing corridor/alignment – Substantive change
4. Adding new corridors or alignments – Substantive change

The purpose of this action is to approve the use of the revised RBTN Map in the 2018 Regional Solicitation project selection.

RELATIONSHIP TO REGIONAL POLICY:
The RBTN was established in the 2040 Transportation Policy Plan, adopted in January 2015. The RBTN sets the region's priorities for bicycle planning and investment.

STAFF ANALYSIS:

Staff assessed consistency with and support for the RBTN guiding principles (as established in the 2040 TPP, adopted in 2015) to ensure that proposed changes and additions met regional policy intent. All changes proposed herein met this general assessment.

ROUTING

TO	ACTION REQUESTED	DATE COMPLETED
TAC Planning Committee	Review & Recommend	
Technical Advisory Committee	Review & Recommend	
Transportation Advisory Board	Review & Accept	

METROPOLITAN COUNCIL

Thrive MSP 2040

TRANSPORTATION POLICY PLAN

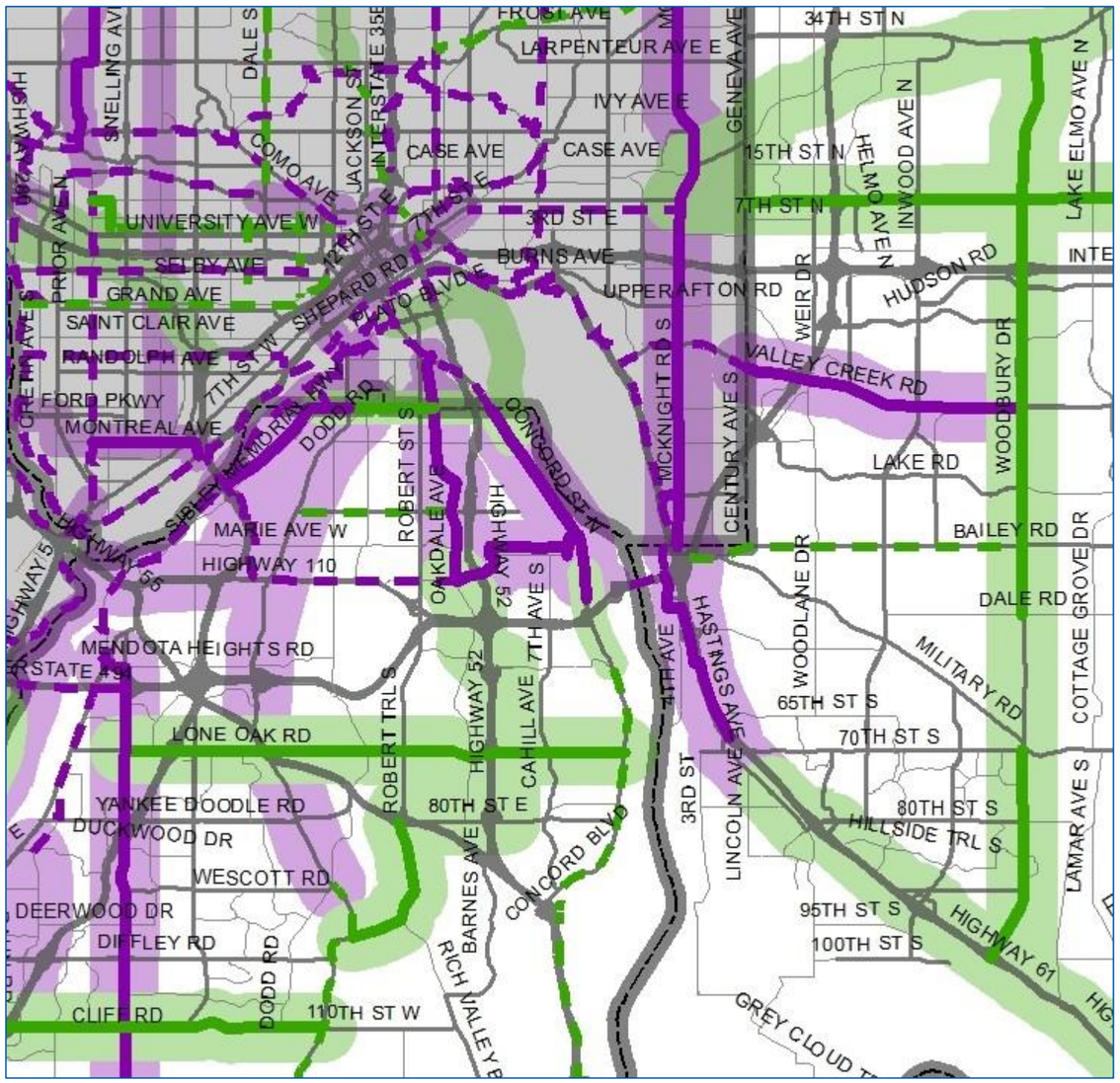
RBTN Proposed Changes for Regional Solicitation

TAC Planning
November 9, 2017

RBTN Changes

Administrative Changes

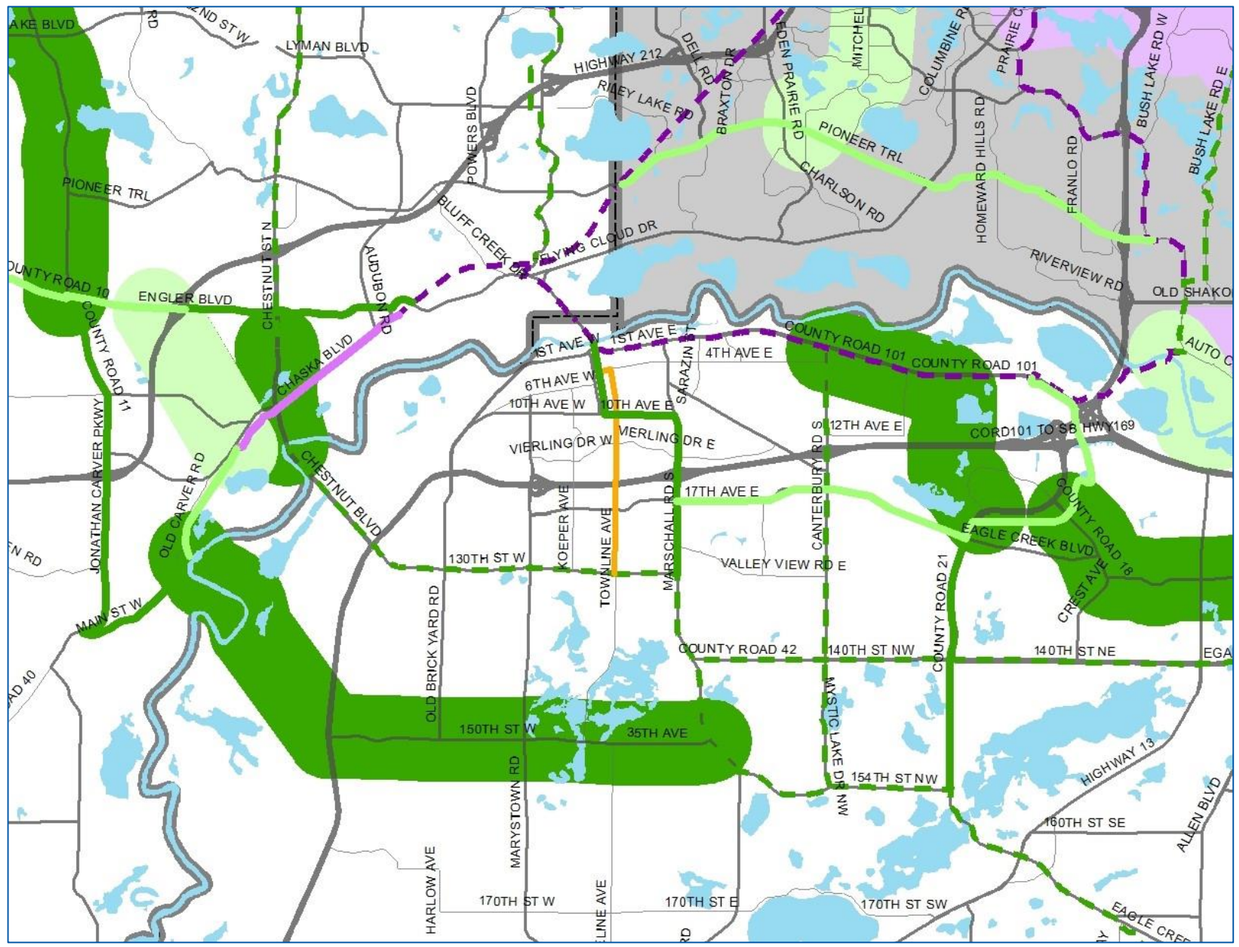
- Designation of alignments within established Tier 1 and Tier 2 corridors



RBTN Changes

Substantive Changes

- Shifting corridors or alignments in response to implementation challenges
- Extending/truncating corridors or alignments to improve connectivity of the overall RBTN
- Adding new corridors or alignments to better connect regional destinations or to better align with local bike plans



Current TPP

RBTN Guiding Principles

- *Facilitate safe and continuous trips* to regional destinations
- *Overcome physical barriers &* eliminate system gaps
- Accommodate a *broad range of cyclist abilities* and preferences
- Integrate &/or supplement existing & planned infrastructure
- Consider opportunities to *enhance economic development*

Current TPP

RBTN Guiding Principles (cont.)

- *Function as arteries* to connect regional destinations & transit system year round
- Provide improved opportunities to *increase bicycle mode share*
- Connect to local, state & national bikeways
- Be *equitably distributed* throughout the region
- Consider regional priorities reflected in adopted bicycle plans
- Follow spacing guidelines to reflect established development and transportation patterns

RBTN Changes

Proposed changes derived from:

- Review meetings with county and/or city planning & engineering staff
- Last Regional Solicitation process
- Other communications with local agencies since last TPP update
- Reviewed & supported by ad hoc bike/ped peer group

Regional Bicycle Transportation Network Vision

RBTN Alignments

- Tier 1 Alignments
- Tier 2 Alignments

RBTN Corridors (Alignments Undefined)

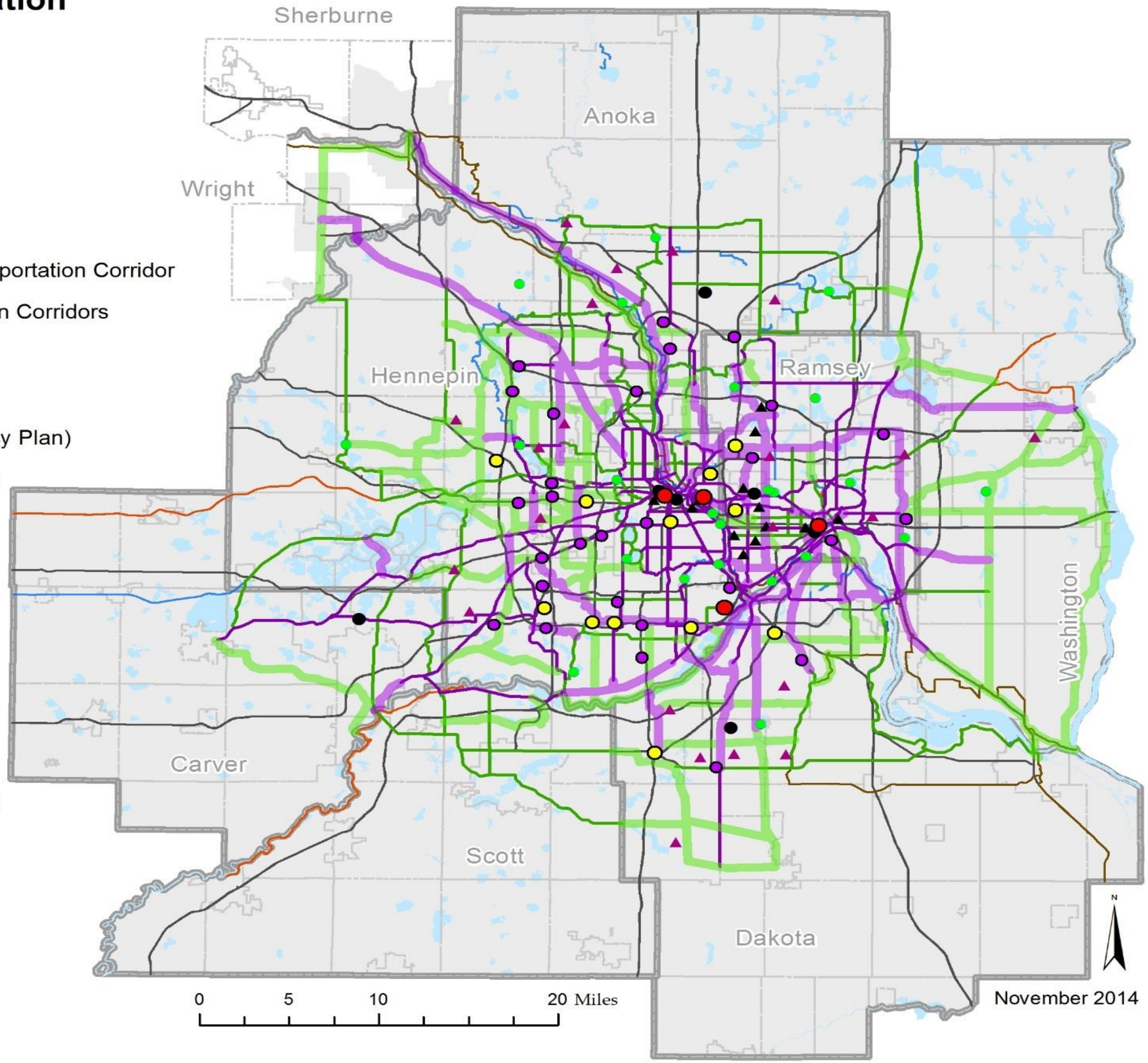
- Tier 1 Priority Regional Bicycle Transportation Corridor
- Tier 2 Regional Bicycle Transportation Corridors

Other Trail Systems

- Regional Trails (Regional Parks Policy Plan)
- Mississippi River Trail (US Route 45)
- State Trails (DNR)

Regional Destinations

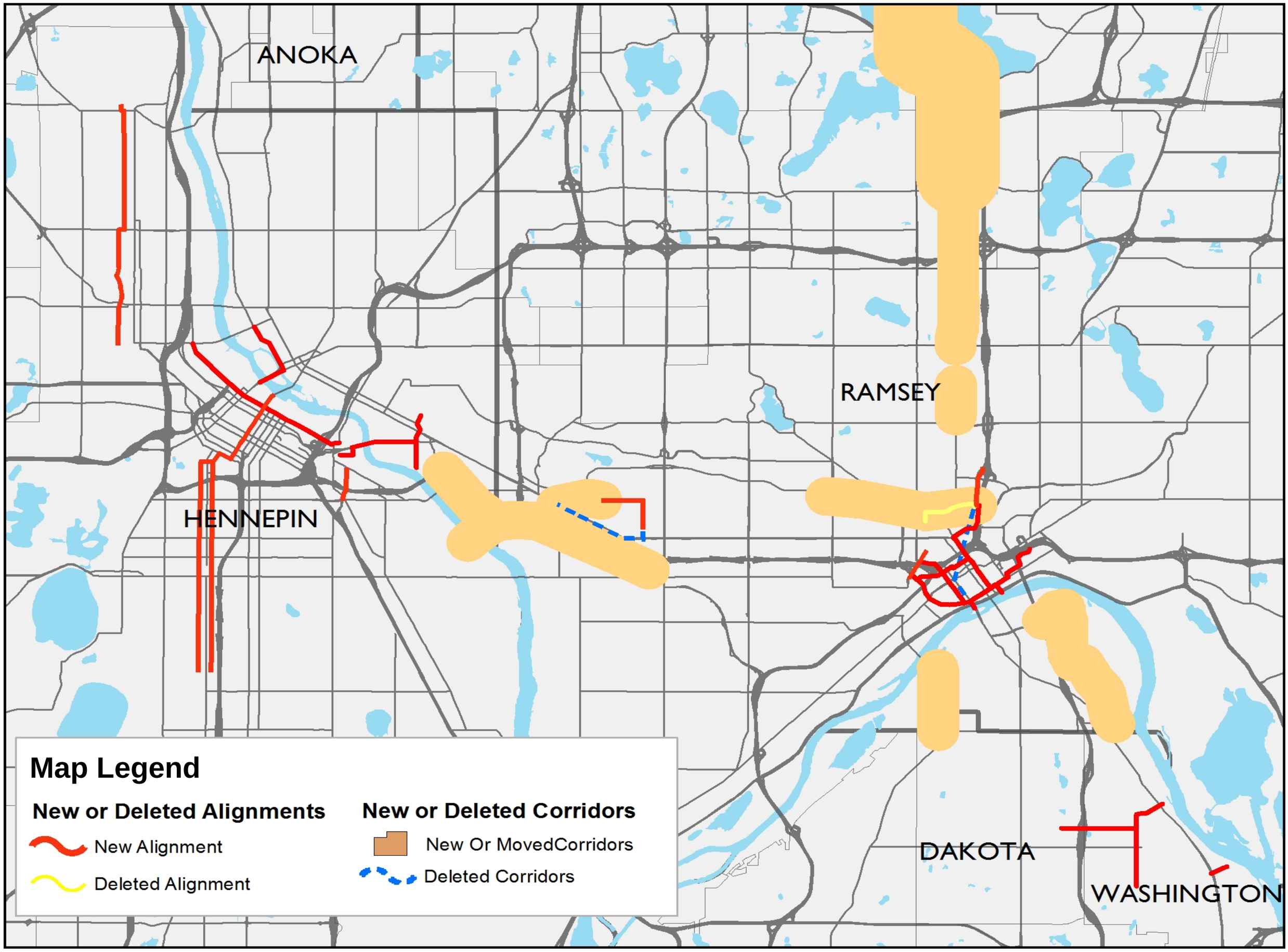
- Metropolitan Job Centers
- Regional Job Centers
- Subregional Job Centers
- Large High Schools
- Colleges & Universities
- Major Sport & Entertainment Centers
- Highly Visited Regional Parks



Reference Items

- Principal Arterial Roads
- Lakes and Rivers
- City Boundary
- County Boundary
- 2040 Municipal Urban Service Area
  MPO Area

RBTN Proposed Changes – Core Cities



RBTN Proposed Changes

Map Legend

New or Deleted Alignments

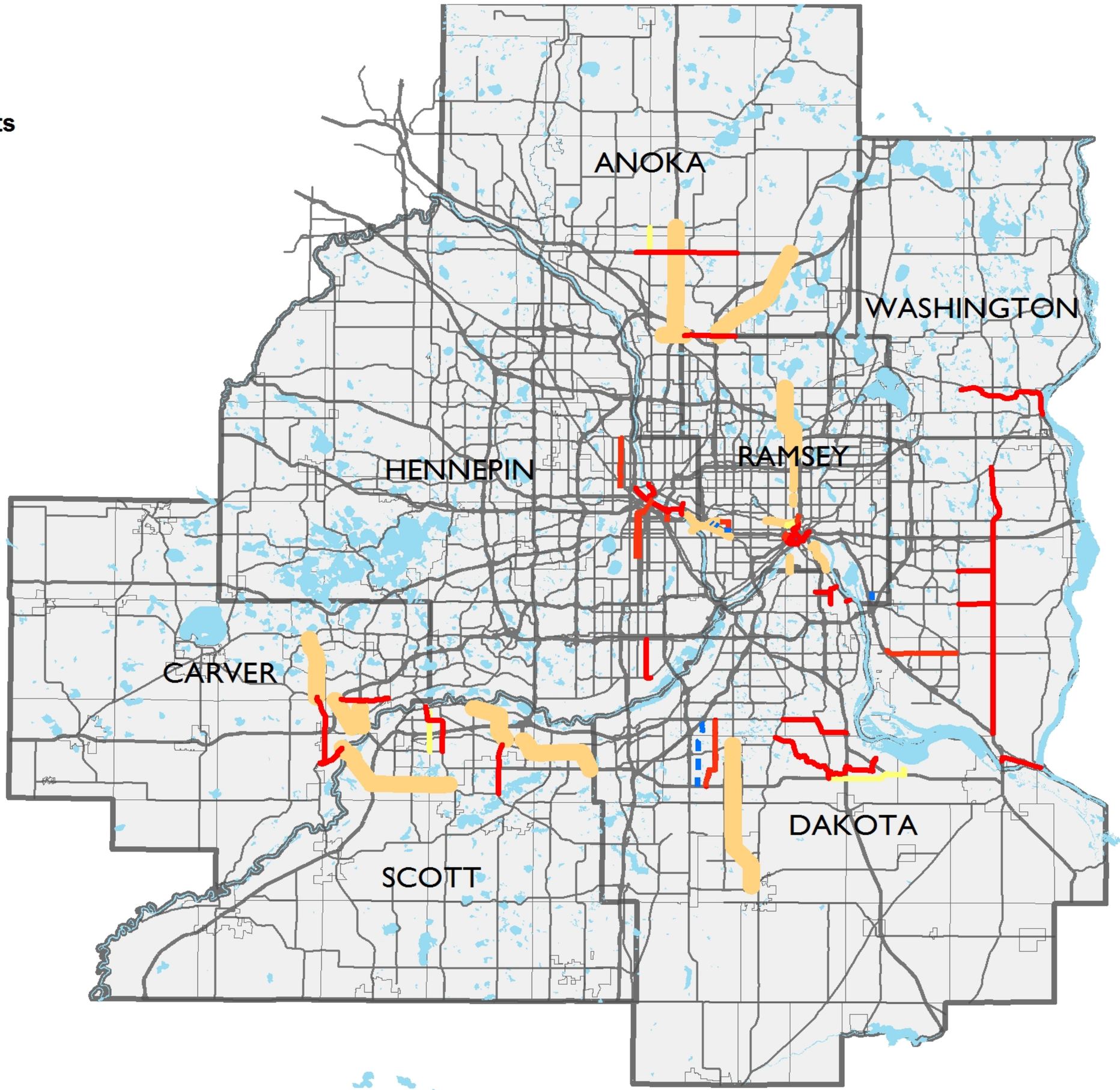
New Alignment

Deleted Alignment

New or Deleted Corridors

New Or MovedCorridors

Deleted Corridors



RBTN Update Map

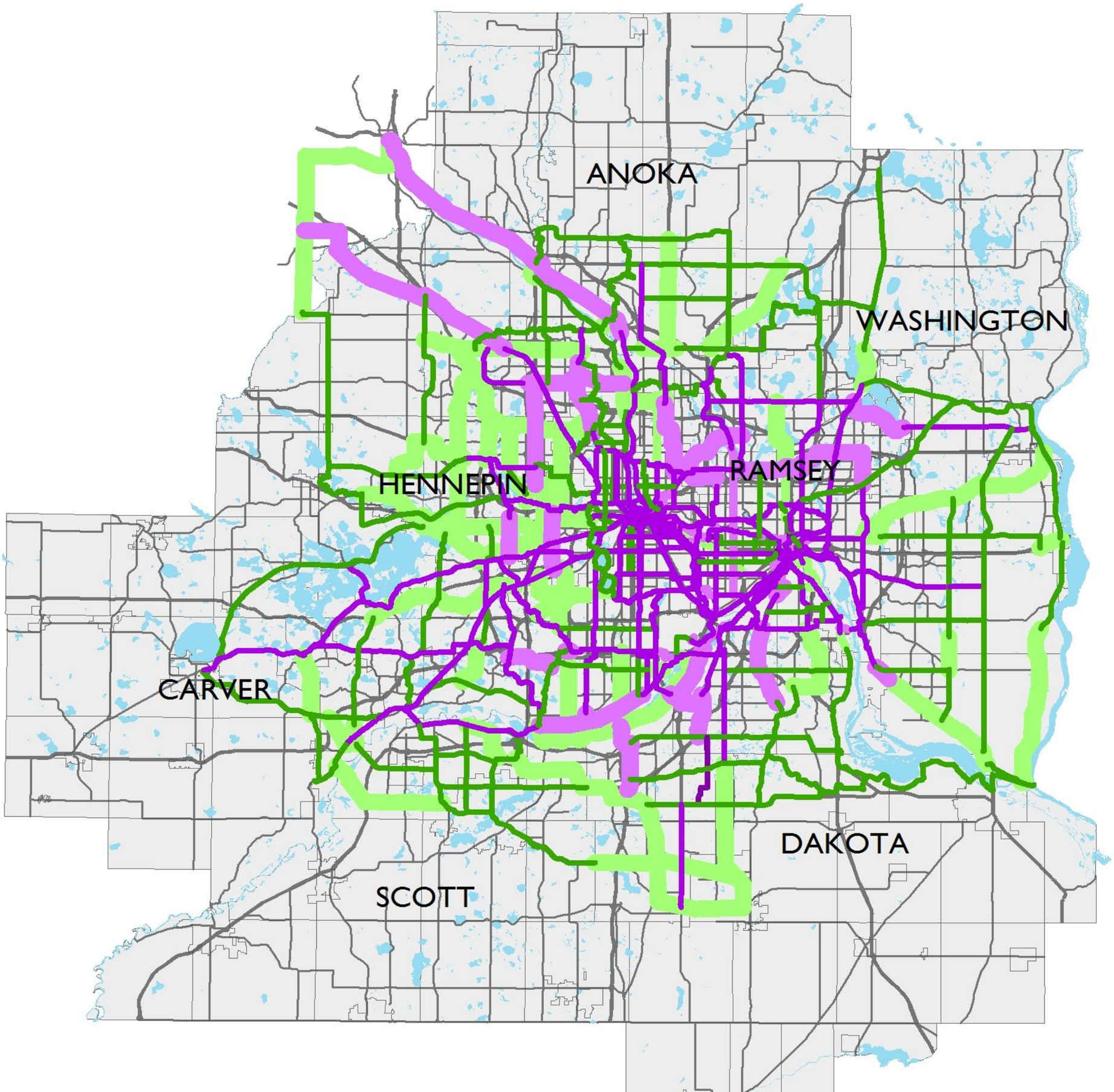
Map Legend

RBTN Alignments

- Tier 1 Alignment
- Tier 2 Alignment

RBTN Corridors

- Tier 1 Corridor
- Tier 2 Corridor



Thank you

Questions or Comments?

Steven Elmer, AICP
steven.elmer@metc.state.mn.us
651-602-1756

ACTION TRANSMITTAL 2017-39

DATE:	November 9, 2017
TO:	Technical Advisory Committee – Planning
FROM:	Metropolitan Transit Services
PREPARED BY:	Russell Owen (651) 602-1724
SUBJECT:	Review of Metropolitan Airports Commission 2018-2024 CIP Capital Improvement Program (CIP)
REQUESTED ACTION:	MAC requests that the Metropolitan Council review the 2018-2024 MAC CIP as required by MN Statutes 473.181 and 473.621
RECOMMENDED MOTION:	Recommend acceptance of the staff analysis of the MAC 2018-2024 Capital Improvement Program (CIP) and forward these comments to the Metropolitan Council for its consideration.

BACKGROUND AND PURPOSE OF ACTION:

The MAC annually prepares a CIP for projects at MSP International Airport and their six General Aviation reliever airports. Under state statutes 473.181 and 473.621 the Council must:

- Determine adequacy of public participation in the CIP process,
- Approve CIP projects meeting certain dollar thresholds, $5 Million at MSP and $2 Million at all reliever airports and "significant effects" criteria (referenced in Table 4, A-H),
- Review and comment on all projects for consistency with the Transportation Policy Plan (TPP), including planning and environmental concerns.

In order to allow letting of projects early enough for construction to start in the spring, the Council has agreed to utilize the draft CIP document released in September to expedite the review. The MAC will take action on December 18th to adopt the final 2018-2024 CIP; any changes from the draft will be incorporated into the 2018 CIP review report that goes forward to the Met Council in January. Any changes identified after the MAC Commission action will be reported to TAB. Any comments provided by TAC/TAB will be included for consideration with the final review report submitted by staff for Council action. MAC staff has reported that there might be a few projects that will be moving in the final draft between 2018 and the out years. If any projects shift, they will be reported to TAC/TAB.

RELATIONSHIP TO REGIONAL POLICY:

The Metropolitan Council is required by state law to annually review the MAC CIP to ensure consistency of proposed projects with regional plans. Although state law doesn't

require TAC/TAB to review the MAC CIP, staff traditionally has sought TAC/TAB comments in the review process.

STAFF ANALYSIS:

Analysis confirms that an Assessment of Environmental Effects (AOEE) has been prepared for 2018 projects with potential environmental effects, and MAC has in place an adequate public participation process for development and review of its AOEE and CIP. MAC will hold a public hearing on the AOEE on November 6th, at 10:30 AM at the Planning, Development and Environment Committee meeting at the MSP Conference Room.

The following 2018 projects meet the dollar threshold levels but do not meet the other "significant effects" criteria to trigger project approval:

- MSP – Terminal 1, Mezzanine HVAC/AHU Replacements – $ 16.2M
- MSP – Terminal 1, Taxiway S Reconstruction – $ 10.0M
- MSP – Terminal 1, Baggage Handling System - $ 34.0M
- MSP – Terminal 1, South Security Exit and Expansion - $41.3M
- MSP – Terminal 1, Restroom Upgrade Program - $8.6M
- MSP – Terminal 1, Concourse G Moving Walks - $ 5.0M
- MSP – Terminal 1, Main Mall Food Court Expansion - $ 12.5M
- MSP – Freight, DHL Building Remodel - $ 5.25M
- MSP – Freight, Consolidated Loading Dock Facility - $ 10.0M
- MSP – Noise Mitigation - $ 6.5M
- Flying Cloud, Runway 10L/28R Modifications - $2.0M

Federal, state and MAC funding has been identified by the MAC for most projects in the 2018 CIP.

All projects in the 2018 CIP appear consistent with the Transportation Policy Plan (TPP). All of the 2018 MSP projects were evaluated in the 2020 EA for MSP that received a Finding of No Significant Impact (FONSI) in March of 2013 from the Federal Aviation Administration. Initial analysis of the future years (2019-2024) of the CIP shows that many projects will meet the dollar threshold of review but do not appear to meet the significant effects criteria. These projects will be re-evaluated on an annual basis.

The Terminal 1 parking ramp project is multi-year project that is in the construction phase. The current number of parking spaces available at MSP (both Terminal 1 and 2) is 25,400. The new parking ramp project will add approximately 5,000 public parking spaces (19.6% increase), while the significance criteria to trigger project approval is 25%. This ramp project will include a new transit center, rental car ready return areas and rental car customer service building. Although the Blue line provides significant transit ridership to the airport, it should be noted that additional parking spaces are needed because MSP attracts the flying public from though out the state and surrounding states, since it is the only large-hub airport in the upper Midwest.

COMMITTEE COMMENTS AND ACTION:

ROUTING

TO	ACTION REQUESTED	DATE COMPLETED
TAC - Planning	Review and Recommend	
Technical Advisory Committee	Review and Recommend	
Transportation Advisory Board	Review and Recommend	
Metropolitan Council	Review and Approve	

MAC 2018 – 2024 CAPITAL IMPROVEMENT PROGRAM

The MAC 2018 – 2024 Capital Improvement Program material included in this memorandum reflects the actions of the Commission's PD&E Committee on Sep. 5, 2017. Final action by the Commission is expected at their December 18, 2017 meeting. Any changes made on December 4th PDE Committee Meeting that may affect the CIP review would be reported at the December 20th Transportation Advisory Board.

The overall review schedule for the CIP is listed below. Materials for the TAC - Planning review are included in the following summaries:

- **MAC 2018 CIP Public Review Schedule**
  (See Attachment 1)

- **2018 Projects Requiring an Assessment of Environmental Effects (AOEE)**
  (See Attachment 2)
  No projects meet criteria for environmental review.

- **Projects Meeting $5M and $2M Thresholds 2018-2024**
  (See Attachment 3)
  A number of projects potentially meet the threshold dollar levels.

- **Projects Meeting Statutory Review Criteria & Requiring Approval**
  (See Attachment 4)
  A few projects in 2018 meet the dollar threshold levels, but do not meet the criteria requiring project "approval".

1) MAC PUBLIC PARTICIPATION PROCESS:

MAC - 2018 CAPITAL IMPROVEMENT PROGRAM IMPLEMENTATION SCHEDULE

CAPITAL IMPROVEMENT PROGRAM	RESPONSIBILITY	SCHEDULE
PROJECTS DEFINITION		January 2017
Initial CIP Discussions	MAC Airport Development	January 1st - June 1st
Requests for CIP Projects to Airport Development	MAC Departments	January 1st – May 1st
Develop Projects Scopes, Costs, and Prioritization	MAC Dept's & Airport Dev.	Feb. 1st - July 31st
Develop Draft Preliminary CIP	Airport Development	Feb. 1st - July 31st
PROJECTS ENVIRONMENTAL REVIEW		
Prepare AOEEs and EAWs as required	Environment	July 31 – Oct. 7th
Notice of September PD&E Meeting mailed to Affected Municipalities	Airport Development	August 31st
Recommendation by PD&E Committee to Commission of Preliminary CIP for Environmental Review/Authorization to Hold Public Hearing on AOEEs and EAWs	Airport Development	September 5th
Minutes of September PD&E Committee Meeting and Notice of September Commission Meeting mailed to Affected Communities	Airport Development	September 26th
Approval of Preliminary CIP by Commission for Environmental Review/Authorization to Hold Public Hearing on AOEEs and EAWs	Airport Development	September 25h
Preliminary CIP Mailed to Affected Communities	Airport Development	September 26th
AOEEs and EAWs to EQB	Environment	October 2nd
Public Hearing Notice Published in EQB Monitor, starting the 30-Day Comment Period	Environment	October 10th
Minutes of September Commission Meeting mailed to Affected Communities	Airport Development	November 2nd
Public Hearing on AOEEs and EAWs at November FD&E Committee Meeting	Environment	November 6th
Thirty-Day Comment Period on AOEEs and EAWs ends	Environment	November 9th
Final Date for Affected Municipalities Comments on Preliminary CIP to MAC	Affected Communities	November 8th
Metro Council TAC Planning Review	TAC-Planning	November 9th
Metro Council – TAC	TAC	December 6th
Notice of December PD&E Committee Meeting mailed to Affected Communities	Airport Development	November 30th
Recommendation by PD&E Committee to Commission of Final CIP	Airport Development	December 5th
Minutes of December PD&E Committee Meeting and Notice of December Commission Meeting mailed to Affected Communities	Airport Development	December 14th
Metro Council – TAB Policy Committee & TAB	TAB	December 20th

PROJECTS PLANNING and FINANCIAL REVIEW		
Approval of Final CIP by Commission----------	Airport Development	December 18th
Notification of Commission action to EQB----------	Airport Development	December 21st
CIP Distributed to MAC Departments, Met Council, State Historical Society and Affected Municipalities ----------	Airport Development	December 21st
Metro Council – Committee Action----------	Transportation Committee	January 8th
Metro Council – Council Action----------	Metro Council	January 24th
Minutes of December Commission Meeting mailed to Affected Communities ----------	Airport Development	

Note: **1)** All dates are tentative and subject to change. **2)** Shaded items represent actions/dates which pertain to the Affected Communities as defined in Minnesota Statutes § 473.621, Subd. 6, as amended. **3)** MAC = Metropolitan Airports Commission **4)** PD&E = MAC Planning, Development and Environment Committee **5)** AOEE = Assessment Of Environmental Effects **6)** EAW = Environmental Assessment Work Sheet **7)** EQB = [MN] Environmental Quality Board

2) PROJECTS REQUIRING AN ASSESSMENT OF ENVIRONMENTAL EFFECTS (AOEE's):

Project Description	Are the Effects of the project Addressed in an Approved EAW, EA or EIS?	**Environmental Categories Affected by the Project**													
		Air Quality	Compatible Land Use	Fish Wild-life and Plants	Flood-plains and Flood-ways	Hazardous Materials, Pollution Prevention and Solid Waste	Historical, Architectural, Archaeological and Cultural Resources	Light Emissions and Visual Effects	Parks & Rec. Areas and Trails	Noise	Water Quality (Storm, Waste and Ground Water)	Wet lands	Infra-structure and Public Services	Farm land	Erosion and Sedimentation
MSP AIRPORT PROJECTS															
No EA or EIS Required for 2018 projects	MSP 2020 Environmental Assessment findings.	No Effects													
RELIEVER PROJECTS															
No Projects	N/A	N/A	N/A	N/A		N/A		N/A		N/A	N/A		N/A		

3) MAC PROJECTS ANTICIPATED TO MEET THE $5M AND $2M THRESHOLDS FROM 2018 – 2024:

Airport	2018	2019	2020	2021	2022	2023	2024
MSP Environmental	Noise Mitigation	Noise Mitigation	Noise Mitigation				
MSP Terminal 1 Lindbergh	-Mezzanine HVAC/AHU Replacements - $16.2 M -Baggage Handling System - $ 34 M -South Security Exit and Façade Expansion - $41.3 M -Concourse G Moving Walks -$5 M -Restroom Upgrade Program - $8.6 M -Terminal 1, Parking -Main Mall Food Court Expansion - $12.5 M -Consolidated Loading Dock Facility - $ 10 M -Freight Building Remodel for DHL -$5 .25M	-IT Modifications - $8.4 M -Baggage Claim/Ticket Lobby Operational Improvements - $74.4 M -Taxiway C1 Construction - $6.0 M -Terminal 1, Parking Ramp, Modifications - $5 M -Taxiway B/Q Centerline lights - $6.4 M -MAC Storage Facility $9.0 M	-ARFF #2 Facility - $10.5 M -IT Modifications - $5.5 M -FIS Operational Improvements -$8.4 M -Baggage Handling System - $ 20.6 M -Baggage Claim/Ticket Lobby Operational Improvements - $48.6 M -Folded Plate Repairs -$8.9 M -Police, Safety and Ops Center -$35 M	-Passenger Boarding Bridge Replacements - $ 5.0 M -IT Modifications - $9 M -Baggage Claim/Ticket Lobby Operational Improvements - $28 M -Lower Level Curbside Check-In expansion- $12.0 M -Folded Plate Repairs - $8.9 M	-IT Modifications - $10.5 M -D Pod Outbound Baggage System - $ 5.0 M --Folded Plate Repairs -$8.9 M -Perimeter Gate Security Improvements - $5.5 M -Concourse G Rehabilitation $5 M	-Recarpeting Program - $7.0 M -IT Modifications - $10 M -Folded Plate Repairs - $8.9 M -Concourse G Rehabilitation $5 M	-Recarpeting Program - $7.0 M -IT Modifications - $10 M -Checkpoint Expansion - $11 M -Concourse G Rehabilitation $5 M
MSP Airfield	-Taxiway S Reconstruction - $10 M		-Taxiway D Reconstruction - $10 M				
MSP Terminal 2 Humphrey						-T2 North Gate Expansion Design Fees- $5 M	

Lake Elmo Airport		Runway 14/32 Replacement- $3.0 M	Runway 14/32 Replacement- $2.0 M Airfield Modifications - $3.0 M	Runway 14/32 Replacement- $2.0 M			
Airlake Airport					Runway 12/30 Improvements $ 3.5 M		
Flying Cloud Airport	Runway 10L/28R Modifications - $2 M						
Anoka County-Blaine Airport							
St. Paul Downtown Airport		MAC Building Improvements - $2.3 M			Runway 13/31 Pavement Reconstruction - $5 M		Runway 14/32 Reconstruction - $5 M
Crystal Airport			Runway 14R/32L & Taxiway "E" Mods - $ 3.8 M				

4) 2018 PROJECTS MEETING STATUTORY REVIEW CRITERIA AND REQUIRING APPROVAL:

2018 CIP PROJECTS		Prior Reviews/Actions		Capital Review					
		LTCP	AOEE***	(A)	(B)	(C)	(D)	(E)	(F
AIRPORT / PROJECT	•	• Review Action	• EA-EAW Prepared • EIS Reviewed • NPDES Approved • Legislative Requirement • Regulatory Requirement • Legal Requirement	Project meets Dollar threshold at: MSP = $5M Relievers = $2M	Loc. of a New Airport	New Runway at an Existing Airport	A Runway Extension at an Existing Airport	Runway Strengthening other than routine Maintenance.	New or Expand Passen Handli or Park Faciliti for 25 or mor capaci Increas
MSP International Airport 2018 Program:		• 2030 LTCP Update Approved in 2010	.	• Passenger Boarding Bridge Replacements • Baggage Handling System • Vertical Circulation Improvements • Concourse G Rehabilitation • Parking Ramp-Structure RAC Facility	N/A	N/A	N/A	N/A	N/A

ST. PAUL *DOWNTOWN*		• 2025 LTCP Approved in 2010		None					
FLYING CLOUD		• 2025 LTCP Approved in 2010	MAC-City Agreement concluded; FAA review of Agreement & R.O.D. on FEIS completed as part of MAC/Airline Agreement. 2010 Plan being implemented.		N/A	N/A	N/A	N/A	N/A
CRYSTAL	•	• 2035 LTCP Approved in 2017	(EA will begin in 2018).	None					
ANOKA CO. *-BLAINE*	•	• 2025 LTCP Approved in 2010		None					
LAKE ELMO	•	• 2035 LTCP Approved 2016	(EA will begin in 2017).	None					
AIRLAKE	•	• 2035 LTCP Approval expected in 2018	(negotiations on sewer & water service).	None					

* Criteria as defined under MS 473. ** Requirements defined under MS 473. *** Per AOEE 2018-2024 Summary Environmental Assessment

ACTION TRANSMITTAL – 2017-41

DATE:	November 1st, 2017
TO:	TAC Planning Committee
FROM:	David Burns, Senior Highway Planner, 651-602-1887
SUBJECT:	Proposed Safety Performance Measures and Short-Term Targets
REQUESTED ACTION:	Request that the Transportation Advisory Board adopt the proposed safety performance measures and short-term targets and recommend adoption by the Metropolitan Council.
RECOMMENDED MOTION:	Recommend adoption of the safety performance measures and short-term targets for the Metropolitan Council Planning Area.

BACKGROUND AND PURPOSE OF ACTION: Pursuant to 23 CFR 490.29, all State DOTs and Metropolitan Planning Organizations (MPOs) must adopt a program to measure system performance and set performance targets in order to monitor progress on an annual basis. These performance measures are divided into the following three broad categories:

- Safety Performance Measures (PM1);
- Pavement/Bridge Performance Measures (PM2); and
- System Performance Measures and CMAQ (PM3).

Each of the performance measure programs have different timelines for adoption and implementation for both state DOTs and MPOs. MPOs are given an additional 180 days after the DOT adoption to either adopt the state-wide target or chose an alternative target. MnDOT officially adopted the safety performance measures and established statewide targets on August 31, 2017. The Council must adopt safety performance measure targets no later than February 27th, 2018.

Per federal requirements, both the state DOTs and MPOs must establish targets for five safety performance measures. MnDOT has set targets based upon a 3% or 5% annual reduction from the 2015 base-year data for fatalities and serious injury crashes, respectively. The following are MnDOT's adopted **state-wide** 2018 targets for the five federally-required measures:

- Number of traffic fatalities: 375
- Fatality rate (fatal crashes per 100 million vehicle miles travelled): 0.62 per 100M VMT
- Serious injuries: 1,935
- Serious injury rate (number of serious injury crashes per 100 million vehicle miles travelled): 3.19 per 100M VMT
- Non-motorized fatalities and serious injuries: 348

Staff recommends using the same methodology MnDOT used to calculate safety targets for the metropolitan planning area. The following are the resulting proposed 2018 safety targets for the MPO planning area:

- Number of traffic fatalities: 89
- Fatality rate (fatal crashes per 100 million vehicle miles travelled):0.31 per 100M VMT
- Serious injuries: 642
- Serious injury rate (number of serious injury crashes per 100 million vehicle miles travelled): 2.35 per 100 million VMT
- Non-motorized fatalities and serious injuries: 112

RELATIONSHIP TO REGIONAL POLICY: The current 2040 Transportation Policy Plan includes a listing of performance measures used to monitor and assess system performance. These performance measures support the six over-arching transportation system goals of the TPP. The proposed safety performance measures and targets directly support the Safety and Security goal of the 2040 TPP, while simultaneously fulfilling the federal requirements of an MPO.

STAFF ANALYSIS: Overall, the total number and rate of crashes involving fatalities and serious injuries is significantly lower in the metro area than the state as a whole. The desired trend is to continue to make progress for improving safety for all modes within the region. The annual rate of reduction adopted by MnDOT is aggressive, but reasonable and likely attainable.

ROUTING

TO	ACTION REQUESTED	DATE COMPLETED
TAC Planning or Funding & Programming Committee	Review & Recommend	
Technical Advisory Committee	Review & Recommend	
Transportation Advisory Board	Review & Recommend (or Adopt)	
Metropolitan Council Transportation Committee	Review & Recommend (or Concurrence)	
Metropolitan Council	Review & Adopt (or Concurrence)	

METROPOLITAN COUNCIL

2040 Thrive MSP

TRANSPORTATION POLICY PLAN

Equity & Environmental Chapters TPP Update Overview

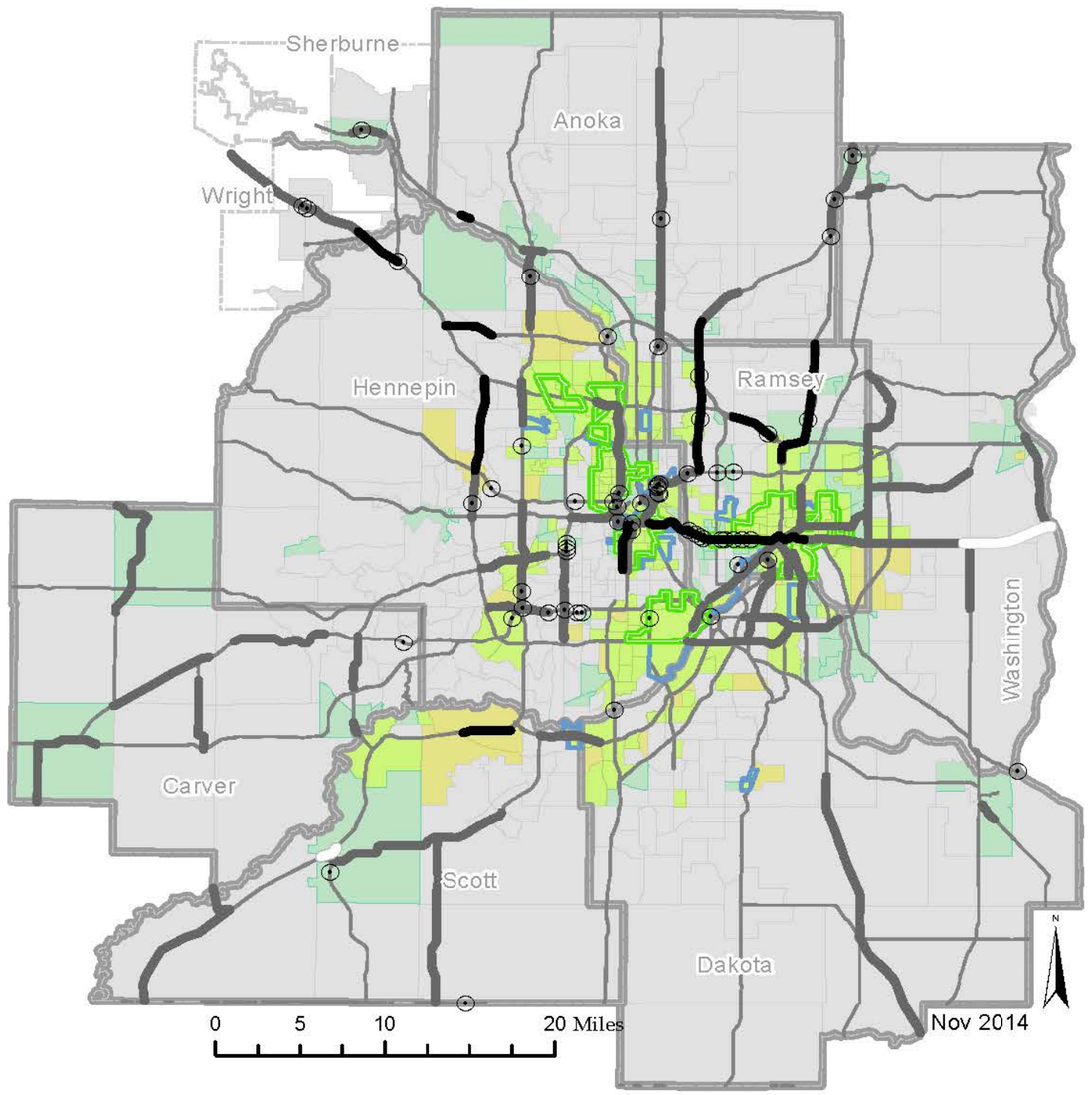
TAC Planning
November 9, 2017

Current TPP

Purpose of Equity Chapter to:

- Respond to federal requirements to address environmental justice in planning
- Address regional aspirations for equity

Figure 10-4: Population and 2040 Highway Investments (Current Revenue Scenario)



Highway Current Revenue Scenario

- Bridge Projects
- Roadside Infrastructure
- Pavement
- Strategic Capacity / MnPASS Tier 1 Expansion

Populations of Color / Households in Poverty

- Area of Concentrated Poverty (40% or more in poverty)
- Area of Concentrated Poverty where 50% or more of residents are people of color

Regional Average by Tract

- Both Poverty and Pop. of Color below regional average
- Pop. of Color above regional average
- Individual Poverty above regional average
- Both Ind. Poverty and Pop. of Color above regional average

People in Poverty

The census defines individual poverty at two levels, 100% of poverty and 185% of poverty. This map highlights census tracts with higher than regional averages at either level.

100% poverty regional average is 10.5%
185% poverty regional average is 21.9%

Population of Color

Population of Color is defined as all persons not classified as White, Non-Latino

Regional Average is 23.4% People of Color

Tracts are marked above (higher than 23.4%) or below (less than 23.4%) the regional average

Data source: 2008-2012 ACS by Tract

Changes Expected for Equity Chapter

- Update environmental justice areas for population identification using 2011-2015 ACS data
- Plan to analyze travel times by mode to employment and community amenities
- Analyze environmental justice populations and proximity to highway system
- Overview of performance measure relationship to equity

Current TPP

Purpose of Environment Chapter to:

- Respond to federal requirements to address environmental mitigation in planning
- Reformat the previous Federal Requirements chapter to provide more focus on environmental and air quality requirements. Other required elements will be addressed throughout the TPP.

Changes Expected for Environment Chapter

- Refocused content
- Analysis of proposed transportation system investments' impacts on natural resources to identify potential mitigation needs

Possible Equity Work Plan Items

- Continue to advance the understanding and role of transportation in achieving equity in the region by collaboration with public, private, and non-profit partners
- Study potential disparities in transportation by race/ethnicity and income
  - Preservation and maintenance spending and facility condition
  - Potential disparities in safety outcomes
- Others?

Thank you

Questions?

Heidi Schallberg, AICP
heidi.schallberg@metc.state.mn.us
651-602-1721

METROPOLITAN COUNCIL

~~*Chapter 9*~~

Aviation Investment Direction and Plan

Overview

Aviation connects the Twin Cities region to the rest of the nation and the world beyond. Although federal law does not require that a region's long-range transportation plan include an aviation element, state law defines aviation as a metropolitan system and requires the Council to prepare an aviation system plan.

Minnesota Statutes (473.145) directs the Council to prepare a metropolitan development guide that addresses "… the necessity for and location of airports…" More specifically, Minnesota Statutes 473.146, subd. 3.8 requires the Council to adopt a long-range comprehensive transportation policy Plan that includes "a long-range assessment of air transportation trends and factors that may affect airport development in the metropolitan area and policies and strategies that will ensure a comprehensive, coordinated, and timely investigation and evaluation of alternatives for airport development."

The Twin Cities Regional Aviation System is a well developed aviation system that requires continued protection, maintenance, and enhancements to support the Twin Cities economy and transportation infrastructure. The Twin Cities region is served by one major airport with commercial air service – Minneapolis-Saint Paul International Airport – and eight ~~seven~~ reliever airports for general aviation, business and recreational users. Two seaplan bases ~~Two seaplane bases A~~ are ~~are a~~also parts~~s~~ of the system. ~~. are two seaplane bases. and a turf runway airport~~. The airports are classified according to their role within the regional aviation system as a Major, Intermediate, Minor or Special Purpose facility. Most of the system airports are part of the National Plan of Integrated Airports (NPIAS), which makes them eligible for federal and state funding.

Minneapolis-Saint Paul International Airport, as a hub serving the Upper Midwest, handled over 3~~3~~7 million passengers, 4~~25~~12,~~000~~898 aircraft operations and 206,942 ~~198,000~~ metric tons of cargo in 201~~2~~6. The relievers handled approximately 340,000 aircraft operations in 201~~3~~6. The regional airports are working reasonably well; long-term comprehensive plans for all of the individual airports are updated periodically to detail specific needs for preservation and expansion. These plans need to be consistent with system policies and plans, but they also inform future system planning.

Roles and Responsibilities

Aviation roles and responsibilities vary between various levels of government. Federal, state, regional and local units include the Federal Aviation Administration (FAA) of the U.S. Department of Transportation (US DOT), MnDOT's Office of Aeronautics, the Metropolitan

Council, Metropolitan Airports Commission (which owns most of the system airports) and other airport owners/operators, such as the Cities of South St. Paul and Forest Lake. The role of the federal government in aviation is especially worth noting, as it is significantly different from the federal role in other transportation modes like transit and highways, where it is primarily the funder of facilities owned and operated by others.

Federal Aviation Administration – a division of US DOT

- Provides design standards for all public airports developed with federal funds
- Prioritizes planning and investments funded under the Airport Improvement Program
- Regulates civil aviation activities within national airspace, including navigation and air traffic control
- Prepares national airports and airspace plans
- Licenses pilots
- Certifies aircraft
- Approves airport plans and environmental mitigation programs.
- Designs and administers regulations on aviation industries including unmanned aircraft systems (UASs).

MnDOT – Office of Aeronautics

- Plans and supports a statewide system of airports and navigational aids
- Registers aircraft and licenses airports and aviation businesses
- Constructs and operates airport system and infrastructure improvements including maintenance of ground-based navigation aids and weather observations systems
- Manages state and federal grants for construction, improvement, maintenance and operations of public airports
- Trains and educates pilots, airport personnel, aviation professionals and the public
- Provides financial resources and technical assistance to local units of government for compliance with state and federal laws/rules and coordination with the Federal Aviation Administration.

Metropolitan Council

- Prepares a guide for the orderly and economic development, private and public, of the Twin Cities area
- Prepares and maintains a regional aviation system plan
- Reviews MAC's airport, environmental and capital plans/programs
- Reviews community plans and public/private projects for compatibility with regional airports and aviation policies
- Provides coordination, funding and technical assistance for planning activities.

Metropolitan Airports Commission

- Promotes aviation
- Owns the major and most reliever airports in metro area

- Operates those airports on a day-to-day basis
- Prepares plans and implements projects for individual airports under its jurisdiction

The Metropolitan Airports Commission was established by the state to operate the region's airports in the 1940's, long before the establishment of the Metropolitan Council in 1967. MN Statutes Chapter 473 contain further detail on roles for both Metropolitan Council and Metropolitan Airports Commission (link https://www.revisor.mn.gov/statutes/?id=473)

Other airport owners/operators – Forest Lake and South St. Paul also own and operate reliever airports in the region. South St. Paul is a long-established municipal airport, while the Forest Lake facility was started as a private airport with turf runway, which has been paved since the last policy plan~~s,~~ and ~~but~~ is now owned by the city. Two private special-purpose airports (private seaplane bases) remain in the region.

Airport Classifications, System Role, and Function

All airports are subject to the rules of airspace sovereignty and federal government controls. Airports in the metropolitan and state system are part of the National Plan of Integrated Airport Systems, and are classified according to their role and function in the particular system. The role and function of an airport within the overall system is an important policy and technical step in the aviation planning process.

While a region typically has only one or two commercial service airports, a series of reliever airports geographically distributed around the region is needed to provide facilities that "relieve" demand for smaller planes to use the larger commercial airports.. General aviation users are encouraged to use the reliever airports, and facilities at those airports are intended to attract these users away from Minneapolis-Saint Paul International Airport.

Airports in the Twin Cities Regional Airport System are classified by a number of different methods. Table 9-1 summarizes the roles of the various airports in the region under each system.

- At a national level, many of these airports are classified in the FAA's National Plan of Integrated Airport Systems (NPIAS).
- Minnesota has a state level classification method, applied to all system airports in the state, as defined in Commissioner's Order Number 605, Order Amending the Airport System of the State of Minnesota, October 30, 2003. State plans usually include more airports than the national plan.
- The Metropolitan Council uses a separate system in this Regional Aviation System Plan to reflect metropolitan region airport considerations, and certain state laws reflect this regional classification terminology.

Table 9-1: Airport Classifications

Airport	Federal NPIAS	State	Regional
MSP International	Commercial Service - Primary	Key	Major
Saint Paul Downtown	Reliever	Key	Intermediate
Flying Cloud	Reliever	Key	Minor
Anoka County-Blaine	Reliever	Key	Minor
Crystal	Reliever	Intermediate	Minor
Lake Elmo	Reliever	Intermediate	Minor
Airlake	Reliever	Intermediate	Minor
South Saint Paul	Reliever	Intermediate	Minor
Forest Lake	N/A	Landing Strip	Minor

Source: Met Council, 2016~~4~~

Periodic re-evaluation is necessary to see if the system has the right type of airports, in locations providing the right type and level of services in a cost-effective and compatible manner.

The advent of the very light business jets, in addition to the growth of the existing larger-scale corporate business aircraft fleet and increasing fractional ownership, is the main driver of growth in general aviation. Thus, plans and investments have gone forward at Saint Paul Downtown, Anoka County-Blaine, and Flying Cloud airports that upgrade capabilities for the business users. Continued emphasis on business jet aircraft at these minor/intermediate airports is recognized in the airport's designated role and investment needs.

In 2009 a regional aviation system technical report was completed that included aviation forecasts and a review of all categories, including a peer review of the role and number of reliever airports in this region against similar metropolitan areas. The analysis concluded that no changes are necessary to regional airport classifications or system roles. Table 9-2 summarizes the characteristics of the various airports in the regional system.

Table 9-2: Existing Functional and Operational Characteristics/Classification of Metro Region Airport System Facilities

Facility Classification	Functional Characteristics			Operational Characteristics		Airport Compatibility Area *
	System Role	Users Accommodated	Air - Service Access Provided	Primary Runway Length	Instrumentation Capability	Compatibility Considerations
Major Airport						• Airport Compatibility Area requirements for airport system functioning: • Regional Airspace Protection • Airport Airspace and land use safety zoning • Land Use Guidelines for Aircraft Noise • Local Infrastructure and Services • Sewer Service • Water Service • Storm Water • Road Access • Police-Fire • Non-Aviation Uses
MSP International	Commercial Air Service Hub	Scheduled Passenger & Cargo, Charter, Air Taxi, Corporate, G.A., Military	International, National, Multi-State, Regional	8,001 - 12,000 ft, Paved	Precision	
Intermediate Airport						
Saint Paul Downtown	Business Jet Reliever	Air Charter, Air Taxi, Business Jet , Military, G.A.	International, National, Multi-State, Regional	5,001 - 8,000 ft, Paved	Precision	
Minor Airport						
Anoka Co. -Blaine	Business Jet Reliever	Air Taxi, Business Jet	Nat'l./Multi-State	5,000 ft, Paved	Precision	
Flying Cloud	Business Jet Reliever	Air Taxi, Business Jet	Nat'l./Multi-State	5,000 ft, Paved	Precision	
Airlake	G.A. Reliever	Rec./Training/Business	Multi-State/State	4,098 ft, Paved	Precision	
South Saint Paul	G.A. Reliever	Rec./Training/Business	Multi-State/State	4,001~~1~~2 ft, Paved	Non-Precision	
Crystal	G.A. Reliever	Rec./Training/Business	Multi-State/State	3,263 ft, Paved	Non-Precision	
Lake Elmo	G.A. Reliever	Rec./Training/Business	Multi-State/State	2,850 ft, Paved	Non-Precision	
Forest Lake	Recreational/Business	Recreational/Training	State, Regional	2,700~~650~~ ft. ~~Turf~~Paved	Visual	
Special Purpose						Variable by Facility
Surfside Seaplane Base	Recreational/ Business	Rec./Training/Per. Bus.	Multi-State/State	6,500 ft Water	Visual	
Wipline Seaplane Base	Recreational/ Business	Training/Business	Nat'l/Multi-State	8,000 ft Water	Visual	
Hospital Heliports	Emergency Services	Business	State, Regional	Variable by facility	Variable by facility	
*Airport Compatibility Area is defined as a radius area 3 nautical miles and 6 nautical miles off the ends of the existing and planned runways of the nearest system airport; within 3 nautical miles it addresses general land use compatibility issues, and out to 6nm it also addresses sanitary landfills, and wind-generation facilities.						

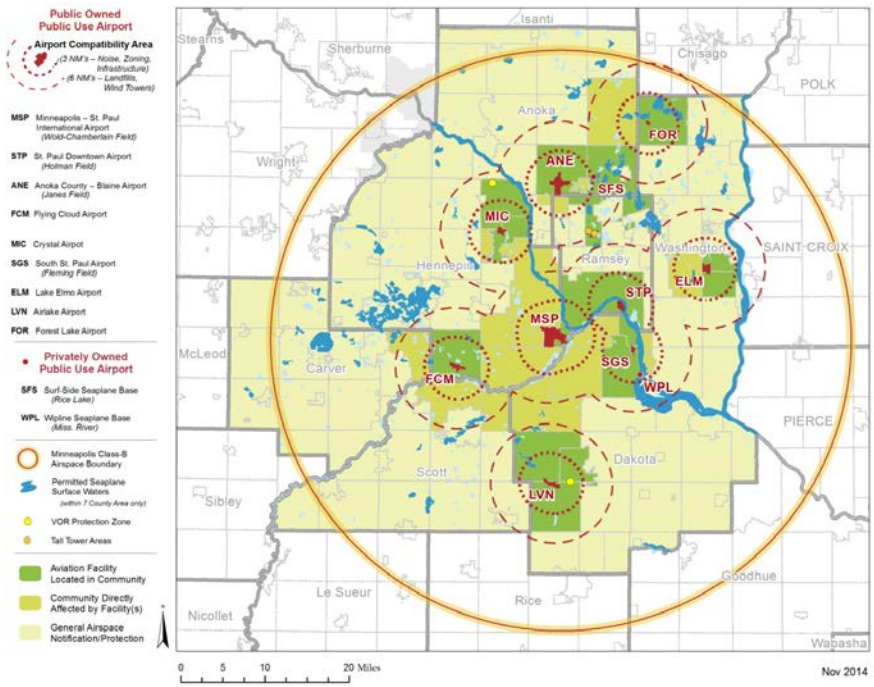
Source: Met Council, 2017~~7~~4

Airport Service Areas

Accessibility, both by air and ground access to the airport, is important to efficient use of air transportation. While the region has only one major commercial airport, the regional system of minor airports reflects the region's geographic distribution of urban development, population and employment patterns to maximize economic benefits.

Thrive MSP 2040 provides forecasts for when and where growth is likely to occur, including type and density of development. The region is well served by a geographically dispersed pattern of long-established Minor airports. Airport service areas have been identified for the Major, Intermediate and Minor system airports, shown in Figure 9-1. These service areas are based upon a 3 nautical mile radius from the airport for noise, zoning and infrastructure land use compatibility. The 6 nautical mile radius is to prohibit new landfills, and wind tower. Based on Thrive forecasts, no new general aviation airports are proposed. Public airports in the collar counties would provide future capacity for growing areas on the edge of the seven-county region.

Figure 9-1: Airport Service Areas NEED~~NEED~~ UPDATED GRAPHIC



Airport Capacity

Capacity of the regional aviation system is usually determined by several interrelated components: the airspace structure and facilities, airport airside facilities, airport landside facilities and aircraft mix.

Airside Capacity

Airside facilities include runways, taxiways, and aprons for the movement and parking of aircraft. Airside capacity is determined by various factors including prevailing wind, orientation of runways to the winds and to each other if multiple runways, number and type of taxiways, mix of aircraft using the airport, operational characteristics of the based aircraft, and weather conditions. The FAA has established a definition of general airport capacity called the annual service volume (ASV) that takes these variables into account for each particular airport. The ASV for a given airport is the annual level of aircraft operations that can be accommodated with minimal delay. For airports with operations below the ASV, delay is minimal, usually less than four minutes per operation. Delay levels above four minutes can result in rapidly increased congestion, operating costs and increased operational complexities.

FAA recommends that planning for improvements begin when an airport is projected to reach 60% of ASV; when an airport's operations reach about 80% of ASV project programming and implementation should be initiated. Airside development capacity additions are likely to come from a combination of runway improvements, air-traffic management procedures/equipment and aircraft on-board technology improvements under the FAA NextGen airport capacity program.

Current long-term comprehensive plans for the reliever airports indicate airside capacity in those airports is adequate. ~~At Crystal airport, two of the four runways are planned to be closed; however, the airport itself is still needed as it contributes to overall system capacity and geographic balance among the reliever airport service areas.~~

Landside Capacity

The capacity of an airport's landside facilities usually refers to the number of gates and parking aprons at the Major and Intermediate airports, and the number of hangar spaces and transient apron/tie-down spaces at the other Minor airports.

Landside capacity at most of the system's general aviation airports is defined by the availability of aircraft storage hangars. Hangar storage is necessary because of security concerns, aircraft ownership/operational requirements, and effects of the Minnesota seasons. The most current estimates of existing hangar spaces and percent of capacity utilized are presented in Table 9-3. Existing hangar spaces are generally adequate and with current economic conditions, additional space is available, especially in T-hangars. Future hangar capacity conditions have been improved with development of new building areas at Anoka County-Blaine, Flying Cloud, and South Saint Paul Airports. Provision for additional building area development has been included

in the long-term comprehensive plans for Lake Elmo and Airlake airports, with some possibility of building area redevelopment at Crystal airport. Hangars are usually privately owned and maintained on land leased from the airport operators, so provision of adequate space for hangars is an airport responsibility, while maintenance of the hangars themselves is not an airport responsibility.

Table 9-3: Estimated Utilization of General Aviation Landside Capacity

Airport	Hangar Spaces	Based Aircraft*	Percent of Capacity
MSP International	29	29	100%
Anoka Co. - Blaine	510	433	85%
Crystal	356~~82~~	185~~219~~	57~~2~~%
Flying Cloud	508	403	79%
South Saint Paul	261~~N/A~~	261~~41~~	100%~~N/A~~
Forest Lake	22	26	100+
Saint Paul Downtown	159	79	50%
Airlake	160	147	92%
Lake Elmo	257~~6~~	226~~9~~	89~~9~~8%

Sources:
Hangar Spaces - Current LTCPs
Based Aircraft - HNTB 2013 Reliever Airports Activity Forecasts - Technical Report (2012 base year) -updated per Long Term Comp Plans
Note: Based aircraft data excludes military at MSP and Downtown Saint Paul Airport

Source: MAC, 2016~~4~~

Maintaining the airport system infrastructure will be a continuing challenge for the region. Impacts and opportunities at individual airports have been assessed in updates of each airport's long-term comprehensive plan through 2030. Growth in flight activity for general aviation is essentially flat as depicted in Table 9-4, but growth is projected to continue for commercial activity through 2030.

Table ~~9~~1~~-~~4: Summary of Regional System Based Aircraft and Forecasted 20~~3~~40 Activity (needs UPDATE)

Activity	201~~2~~6	20~~15~~20	20~~20~~30	20~~30~~40	Average Annual Growth
Total G.A. Based Aircraft	1,539	1,562	1,549	1,542	0.01%
Total G.A. Operations	368,401	335,505	337,358	355,477	-0.20%

Activity	2012~~2~~6	2015~~15~~20	2020~~20~~30	2030~~30~~40	Average Annual Growth
MSP Enplaned Passengers (Base Case Forecast)	16,020,038	17,639,241	20,178,920	26,411,706	2.82%
MSP Aircraft Operations	424,928	441,932	484,879	567,396	1.62%

Sources: MAC, 2014

Total GA Based Aircraft - HNTB 2013 Reliever Airports Activity Forecasts - Technical Report (2012 base year)

Total GA Operations - HNTB 2013 Reliever Airports Activity Forecasts - Technical Report for MIC, LVN, 21D; FAA Draft 2014 TAF for STP, FCM, ANE; 2020 Improvements EA/EAW for MSP

MSP Enplaned Passengers - 2020 Improvements EA/EAW

MSP Aircraft Operations - 2020 Improvements EA/EAW

Long Term Comprehensive Plans

Airport sponsors are required to prepare a 20-year long-term comprehensive plan (LTCP) for each airport in the system. The LTCP is intended to integrate all information pertinent to planning, developing and operating an airport in a manner that reflects its system role and compatibility with its environs. The details on scope and emphasis of a long-term comprehensive airport plan should reflect the airport's system role and the objectives for each plan content category. Full requirements for an LTCP are described in Appendix K [*insert link*].

Plans should be reassessed every five years and updated according to Table 9-5. The reassessment involves reviewing the new forecasts against prior forecasts and actual airport activity, checking the progress of implementation efforts (for example, individual project planning, environmental evaluations, and capital program), and identifying any other issues or changes that may warrant continued monitoring, interim action or establish a need for a plan update. The LTCP does not replace any other planning or reporting requirements of another governmental unit.

If a change to the plan cannot be accommodated during its scheduled update, the LTCP, or parts of it, should be amended. Airlake, Crystal and Lake Elmo Airports were delayed in their scheduled updates due to scheduling, funding. Those airports are on schedule to be completed with their LTCP in 2015. An amendment should be prepared and reviewed by the Council prior to project inclusion in the corresponding year's capital improvement program.

Table 9-5: Update Schedule for Long-Term Comprehensive Plans

Metro Area Public Use Airports	Plan Status	5-year Update
Minneapolis-Saint Paul Int'l.	2040~~30~~ LTCP Approved June 2010	2020~~15~~
Saint Paul Downtown	2030~~05~~ LTCP Approved April 2010	2018~~5~~
Anoka County-Blaine	2030~~05~~ LTCP Approved April 2010	2018~~5~~
Flying Cloud	2030~~05~~ LTCP Approved April 2010	2018~~5~~
Airlake	2032~~25~~ LTCP Currently in the review process ~~Approved October 2008~~	2023~~14~~
Crystal	202~~2~~35 LTCP Approved September 2017~~October 2008~~	2014~~14~~22
Lake Elmo	2032~~2~~5 LTCP Approved July 2016~~October 2008~~	2021~~14~~
South Saint Paul Municipal	Community CPU Approved 2009	2019
Forest Lake Municipal	Community CPU Approved 2009	2018
Lino Lakes Seaplane Base	Community CPU Approved 2009	2018
Wipline Seaplane Base	Community CPU Approved 2009	2018

Environmental Compatibility

The planning, development and operation of the region's aviation facilities should be conducted to minimize impacts upon the cultural and natural environment, regional systems and airport communities. Airport sponsors should have a surface water management plan, which is consistent with plans of the applicable watershed management organizations and the state wetland regulations. Airport sponsors should also protect groundwater quality, and should identify the location, design and age of individual/group/central sewer systems on-site and all well location sites. The airport sponsors should also provide sanitary sewer to system airports when such service is available. All airports in the system, except Airlake and Lake Elmo, are within the MUSA and currently have sewer service.

In areas around an airport, or other system facilities, land uses should be compatible with the role and function of the facility.

One preventative measure that communities should use in promoting compatible land use is to create an airport zoning ordinance. An airport zoning ordinance protects a community's investment in the airport by limiting structural hazards that could be a hazard to air navigation. An airport zoning ordinance also protects people and property in the vicinity of the airport by acting as a buffer between the airports and other lands uses. MnDOT's Office of Aeronautics is currently reviewing the statutes and rules relating to airport zoning ordinances from a state system perspective to ensure an appropriate balance of public safety and airport compatible development opportunities near and around airports.

As noted in state statutes and in the Appendices, the ability to enact an airport zoning ordinance, an airport sponsor typically invites nearby communities to participate in a Joint

Airport Zoning Board (JAZB). These boards work in a collaborative fashion to accommodate both community and airport needs in the zoning process. Further information on JAZB's and the zoning process can be found in Appendix L [insert link].

Airport noise programs, and the application of land use compatibility guidelines for aircraft noise, are developed within the context of both local community comprehensive plans and individual airport long-term comprehensive plans (LTCPs). Both the airport and community plans should be structured around an overall scheme of preventive and corrective measures. Appendix L discusses, in greater detail, the current land use measures and status of the noise compatibility program [*insert link*]. For additional noise related information, refer to the individual airport LTCP for noise modeling and operational documentation, the Council's *Local Planning Handbook* for communities and the *Builder's Guide* for acoustic requirements concerning construction of new single-family detached housing in noise policy areas.

Aviation Investment Plan

For airports in the regional aviation system to meet their facility and service objectives, performance and function, continued investment in system airports will be needed over the 20-year planning period. This section gives an overview of the airport facility, airport issues and planned investments for each regional system airport as found in the long-term comprehensive plans. In addition, it is important to understand the funding process and sources available to airports to implement recommendations and airport capital improvement programs, even though the aviation investments reflected in this plan are not required by federal law to be fiscally constrained.

On an annual basis, the Council reviews the MAC capital improvement plan (CIP) for consistency with regional systems and policy. This review also provides oversight of the improvement program, and the Council approves specific projects that meet dollar thresholds. The review process for the capital improvement plan is defined in Appendix J [*insert link*].

Aviation Funding Sources

Historically, federal, state, and local funding sources all contribute to the support of airports in the Twin Cities Regional Aviation System. Because of changes in both the general aviation and the commercial aviation industries, levels of federal and state funding that historically have been available for airport development are shrinking. Maintaining historic levels of funding is vital to the airports that support the economy of the metropolitan region.

Federal

The FAA operates the Airport Improvement Program, which provides grants to public agencies, and in some cases to private owners and entities, for the planning and development of public-use airports that are included in the National Plan of Integrated Airport System (NPIAS). For Minneapolis-Saint Paul International Airport, the grant covers 75 percent of eligible costs (or

80% for noise program implementation). For all other airports in the regional system, the grant covers a range of 90% to 95% of eligible costs, based on statutory requirements.

The Airport Improvement Program was established by the Airport and Airway Improvement Act of 1982. Funding for this program is generated from a tax on airline tickets, freight way bills, international departure fees, general aviation fuel, and aviation jet fuel. The FAA uses these funds to provide 95% funding at eligible airports for eligible items under the grant program.

Under the program, funds must be spent on FAA-eligible projects as defined in FAA Order 5100.38, "Airport Improvement Program (AIP) Handbook." In general, the handbook states that:

- An airport must be in the currently approved National Plan of Integrated Airport Systems (NPIAS).
- With the exception of the two Special Purpose Airports and Forest Lake Airport, all of the Twin Cities metro system airports qualify as NPIAS airports and are eligible for AIP funding
- Most public-use airport improvements such as General Aviation terminal buildings, T-hangars, and corporate hangars and other private-use facilities are eligible for 90% federal funding, in certain circumstances

In addition, revenue-producing items typically are not generally eligible for federal funding, and all eligible projects must be depicted on a FAA-approved Airport Layout Plan. Other sources of FAA funding include Facilities and Equipment (F&E) funding for facilities such as air traffic control towers and some runway instrumentation. This funding is separate from the Airport Improvement Program and typically requires no local match. Federal noise funds (Part 150 funds) may also be available for noise mitigation with an 80% federal and a 20% state and/or local share.

In 2001, a non-primary entitlement program was authorized. This program provided up to $150,000 in FAA grant funds each year to general aviation airports that were listed in the NPIAS and were not a primary airport providing airline service for passengers. Under this program, the FAA pays 95% of all engineering, inspection, testing, land acquisition, administrative, and construction costs for projects that are eligible. The sponsor or state pays a local 5% match. When this program was last renewed, certain revenue-producing items of work, like T-hangars and fuel facilities, could be funded by this program once all safety-related improvements had been completed.

State

Minnesota's state-funded aeronautics system consists of 135 airports throughout the state. By law, revenues from aviation fuel, aircraft registration, and airline flight property are dedicated to the state airports fund, which is the primary state funding source for aeronautics. Money in the fund is appropriated biennially to MnDOT as part of the transportation budget.

Although the airport sponsor is responsible for project design and construction management, many project-related costs, including consultant services, are eligible for state and/or federal aid as described below.

- **Airport Construction Grant Program**: The State Construction Grant Program funds most capital improvements at state system airports based on a determination that the improvement is a justifiable benefit to the air-traveling public. Airports that are in the NPIAS are eligible for federal funding. State funding participation at NPIAS airports is 80% of eligible costs. State funding at non-NPIAS airports is 90% of eligible costs. Projects that have revenue-generating potential are funded at 80% and 90% at NPIAS and non-NPIAS, respectively. This program also funds airport maintenance equipment at a two-third state/ one-third local participation rate.
- **Airport Maintenance and Operation Program**: The State Airport Maintenance and Operation Grant Program provides two-third state reimbursement to the state system airports for their documented, routine maintenance expenses up to a certain ceiling amount that is categorized by airport infrastructure.
- **Hangar Loan Revolving Account Program**: The State Hangar Loan Revolving Account Program provides an 80% interest-free loan to state system airports for building new hangars. The loans are paid back in equal monthly installments over 10 years. Payment receipts, as they become available, are then loaned out again to other airports needing hangars.

Local and Sponsor Funding

Local and sponsor funding is used to make up the balance of the grant-eligible project costs after FAA and MnDOT participation. Sponsor funds are generated by the airport from fuel sales, lease fees, and similar incomes, or from the local governing body. Sources of sponsor funding largely depend upon which of three types an airport is.

- **Municipal Airports** – These airports are owned by counties, cities, or other local municipalities. Sponsor funding includes the sources of revenue from the airport (fuel sales, rents, etc.) as well as any funding external to the airport that the municipality chooses to provide, such as municipal bond revenues and municipal taxes. Municipal airports in the Twin Cities airport system are Forest Lake and South Saint Paul.
- **Private Airports** – These airports can fund projects from their revenue streams (for example, fuel sales, rents). The owners may also be a source of funding, although this typically is more limited. Surfside and Wipline Seaplane Bases are examples of private airports.
- **Metropolitan Airports Commission (MAC)** – Airports owned by the MAC can be funded by revenues generated at any of the MAC-owned airports. This cross-funding helps airports adequately support the system by funding the facilities they need to perform their mission. However, in recent years, MAC philosophy has shifted toward a more self-sufficient system for the reliever airports. The MAC also has the authority to issue bonds to support the funding of airport projects.

Other Funding

A potential source of funds for airport improvements is from private investors. Private investors may construct needed facilities as part of a lease agreement with the airport that will allow time to amortize their investments. This type of funding is particularly suitable for corporate hangar development and other privately owned projects. These types of projects are not eligible for FAA or state funding. However, this funding source does allow non-municipal sponsors/investors to leverage funding capabilities not available to the airport. This source of funding was recently used for an Fixed Base Operator building at Anoka County Blaine airport.

The combination of these funding sources allow the airports in this mature regional airport system to maintain and, when justified, enhance their facilities to serve their customer's needs and allow them to be as financially self sufficient as possible.

Planned Investments

Minneapolis-Saint Paul International Airport

Based on existing conditions and the capacity demands placed on the facility as passenger numbers grow, development activities are needed that focus enhancing the arrival curb, passenger processing facilities, parking and international arrival facilities at Terminal 1, and gate capacity at Terminal 2 to accommodate existing seasonal demand and new carrier entrants at Minneapolis-Saint Paul International Airport. In general, the terminal environment at Minneapolis-Saint Paul International Airport will also need enhancement in the form of gates, ticket counters, passenger check-in areas, security screening checkpoints, and baggage claim areas.

Environmental analyses associated with the Minneapolis-Saint Paul International Airport 2020 improvements were conducted in compliance with both the National Environmental Policy Act (NEPA) and the Minnesota Environmental Policy Act (MEPA). Guidance was provided by the FAA's policies and procedures for considering environmental impacts: FAA Order 5050.4B, "NEPA Implementing Instructions for Airport Actions" and FAA Order 1050.1E, "Environmental Impacts, Policies and Procedures" and MEPA's Minnesota Environmental Review Program.

Preparation of a federal Environmental Assessment and state Environmental Assessment Worksheet began in September 2010 and was concluded in March 2013 with a Finding of No Significant Impact by the FAA and in April 2013 with a Negative Declaration on the need for an EIS by the MAC.

Reliever Airport Investments

In general the development programs at the reliever airports focus on rehabilitation of pavement in aircraft operational areas (runways, taxiways, aprons). Projects vary from year to year, depending on available funding and airport needs. In 2013, pavement rehabilitation was

completed at Anoka Blaine Airport, Airlake Airport and Lake Elmo Airport The following list shows other general projects that are being considered at the reliever airports.

- Obstruction removal
- Land acquisition
- Arrival/departure building
- Perimeter fencing
- Install Automated Weather Observation System
- Runway pavement and taxiway
- Hangar development

Table 9-6 shows the cost of the planned investments at the regional airports. The table is in 2010 dollars and will be updated for current years (2014) costs.

Table9-6: Planned Investments at Regional Airports Draft UPDATE

Airport	2018-1915	20162020-20202030	20231-20340	20341-20450
MSP International CIP	$392,625,000132,925,000	$1,297,000,000608,047,500	~$50-$100 M annually for MSP	~$50-$100 M annually for MSP
Saint Paul Downtown	$1,550,0004,750,000	$11,000,000 ~$5M Annually for the R. SysApprox. $16,650,000		
Anoka County-Blaine	$3,150,000750,000	$5,000,000 ~$5M Annually for the R. SysApprox. $7,250,000		
Flying Cloud	$850,0003,300,000	$8,000,000 ~$5M Annually for the R. SysApprox. $ 820,000		
Crystal	$300,0005,050,000	$4,000,000 ~$5M Annually for the R. SysApprox. $2,350,000		
Lake Elmo	$51,55100,000	$19,000,000Approx $12,500,000		
Airlake	$50,0002,550,000	$18,000,000Approx. $7,850,000		
South Saint Paul	$3,813,123	negligible		
Forest Lake	$5,869,800	Short-term funding needs likely to shift into out years unless federal funding under NPIAS		

Sources: MAC, 20147
Preliminary 20158-20214 MAC Capital Improvement Program (8/21/14 Version)

UPDATE ALL DATA

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Individual Airport Investments

Minneapolis-Saint Paul International Airport

Figure 9-2: Minneapolis-Saint Paul International Airport

Airport Data:

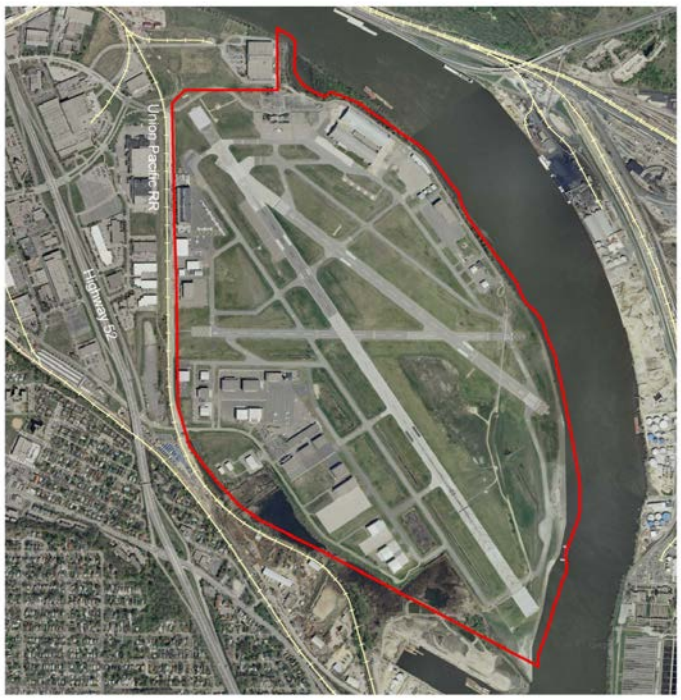
	Existing (2012~~2~~6)	2020	2025	2030
Based Aircraft	29	29	29	29
Operations	412,898~~24,928~~	484,879	526,040	567,396
Land Area	2,930 Acres			

Source: MAC, 2016~~4~~

Airport Issues:

The aviation industry is volatile and the MAC needs to be flexible to continue to provide state of the art facilities. Recently, airlines have consolidated, shifted strategies with their aircraft fleet, adopted new security protocols and implemented new technologies for more efficient operations. Monitoring and planning for these changes as well as technology upgrades and variations in growth rates for different aviation activities will be needed.

Figure 9-3: Downtown St. Paul Airfield



Downtown Saint Paul Airfield

Airport Data:

	Existing (2012)	2020	2025	2030
Based Aircraft	79	106	112	**112**
Operations	79,918	65,913	67,367	**68,869**
Land Area	540 Acres			

Source: MAC, 2014

Airport Discussion

Downtown Saint Paul Airfield (Holman Field) is located across the river from downtown Saint Paul. Opportunities at this airport revolve around land use compatibility and obstructions. The airport has sufficient capacity for future demand. The airport is used as an alternate for Minneapolis-Saint Paul International Airport, in case of capacity/emergency scenarios at Minneapolis-Saint Paul International Airport. The air traffic control tower located at the airport is an FAA tower.

Figure 9-4: Airlake Airport

Airlake Airport

Airport Data:

	Existing (2012)	2020	2025	2030
Based Aircraft	147	156	154	157
Operations	25,997	26,408	26,955	28,783

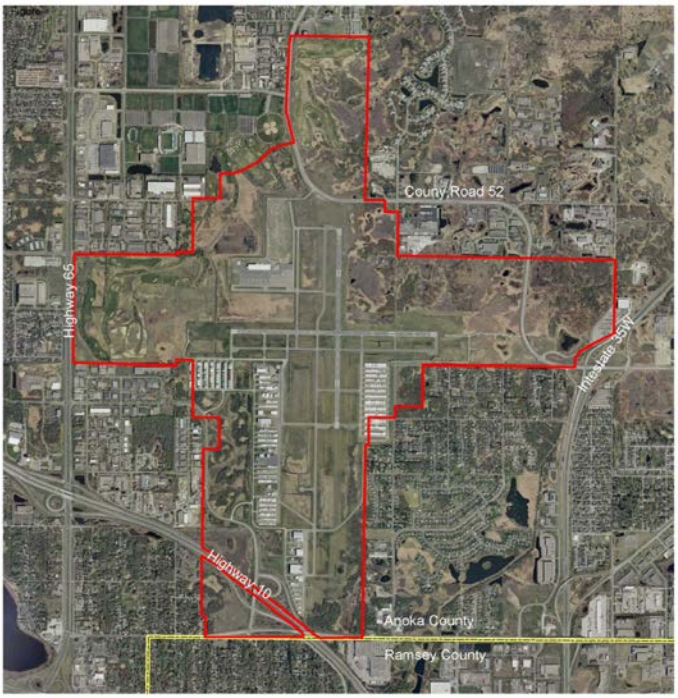
Land Area	595 Acres			

Source: MAC, 2014

Airport Discussion:

Airlake Airport is located in Dakota County, approximately 20 miles south of Minneapolis and 16 miles south of Minneapolis-Saint Paul International Airport. The main issues at Airlake Airport include tenant access to municipal systems for sanitary sewer and water. MAC should continue to procure tenant access to sewer and water services. MAC would need to pursue agreements to move Cedar Avenue or the railroad to allow for an extension of the runway, and plan for more landside capacity. This airport does not have an air traffic control tower. MAC should also pursue non-aeronautical revenue opportunities.

Figure 9-5: Anoka County – Blaine Airport



Anoka County-Blaine Airport

Airport Data:

	Existing (2012)	2020	2025	2030

Based Aircraft	433	412	404	**401**
Operations	79,350	72,651	75,172	**77,791**
Land Area	1,900 Acres			

Source: MAC, 2014

Airport Discussion:

Anoka County- Blaine Airport is located in the southern part of Anoka County and the city of Blaine, approximately 12 miles from downtown Minneapolis and 12 miles from downtown Saint Paul. The air traffic control tower located at the airport is a contract tower and future funding for these towers is not guaranteed. Other opportunities at Anoka-Blaine airport include non-aeronautical land uses.

Figure 9-6: Crystal Airport (UPDATE WITH NEW GRAPHIC)

Crystal Airport

Airport Data:

	Existing (2012)	2020	2025	2030
Based Aircraft	219	205	200	**199**
Operations	48,220	44,094	44,259	**46,159**
Land Area	436 Acres			

Source: MAC, 2014

Airport Discussion:

The Metropolitan Airports Commission ~~has~~ finalized the updated Crystal Airport LTCP in 2017. Crystal Airport is located in Hennepin County, approximately seven miles northwest of downtown Minneapolis. The opportunities at this airport include the right sizing of airport facilities and on-going removal of off airport obstructions. The air traffic control tower located at the airport is an FAA tower and currently funding for these towers has been provided, but will need to be re-allocated in the future. Crystal Airport's primary role is to serve personal, recreational, and some business aviation users in the northwest metropolitan area, including the cities of Crystal, Brooklyn Park, Brooklyn Center, and Minneapolis. The Airport's classification will continue to be that of:

- A Complimentary Reliever in the Metropolitan Airports Commission (MAC) system;
- An Intermediate Airport per Minnesota Department of Transportation/Office of Aeronautics (MnDOT); and
- A Minor Airport per the Metropolitan Council Regional Aviation System Plan.

The aircraft mainly anticipated to use Crystal Airport – and that which it is designed for – will continue to be a family of small, propeller-driven airplanes with fewer than 10 passenger seats. The proposed plan does not contemplate upgrading the role of Crystal Airport to accommodate a larger aircraft family or scheduled passenger or cargo flights. Nor does the plan contemplate downgrading the role of Crystal Airport. ~~Other opportunities at Crystal Airport include compatible and revenue generating land uses around the airport.~~

Figure 9-7: Flying Cloud Airport

Flying Cloud Airport

Airport Data:

	Existing (2012)	2020	2025	2030
Based Aircraft	403	423	425	433
Operations	84,773	74,126	76,334	78,634
Land Area	543 Acres			

Source: MAC, 2014

Airport Discussion:

Flying Cloud Airport is located approximately 14 miles from downtown Minneapolis. The airport is considered by the MAC to be a primary reliever airport for Minneapolis-Saint Paul International Airport and the primary runway extension was constructed in 2008. The air traffic control tower located at the airport is an FAA tower.. Other opportunities at Flying Cloud Airport include development of non aeronautical land uses to procure additional revenue.

Figure 9-8: Forest Lake Airport

Forest Lake Airport

Airport Data

	Existing (2012)*	2020	2025	2030
Based Aircraft	26	26	26	26
Operations	8,000	8,000	8,000	8,000
Land Area	330 Acres	330	330	330

*No Data

Forest Lake Airport is located in northern Washington County. Built as a private airport, it is now owned by the City of Forest Lake. Although this airport was added to the regional system in 2010, it will require significant investment to fully function as a reliever airport. The airport is not currently in the National Plan of Integrated Airport System, but is continuing to work toward inclusion. The city of Forest Lake, along with the airport manager and MnDOT, has developed a project to pave the runway. MnDOT has stated that they will provide a grant with matching funds by the City. The city realizes the opportunity and is currently deciding how to

move forward. With the paved runway, this would provide an opportunity for Forest Lake to be included in the NPIAS. This would be a great project for the airport and also serve the flying public in the region as well. The opportunities at Forest Lake airport include obstruction removal, perimeter fencing, and provision of both airside and landside improvements. As adjacent land is developed, compatibility of land uses must be carefully monitored..

Figure 9-9: Lake Elmo Airport (UPDATE with NEW GRAPHIC)

Lake Elmo Airport

Airport Data:

	Existing (2015~~2~~)	2020	2025	2030
Based Aircraft	22~~9~~6	218	209	211
Operations	25,454~~26,709~~	24,232	23,908	25,200
Land Area	640 Acres	640	640	640

Source: MAC, 2016~~4~~

Airport Discussion:

The Metropolitan Airport Commission finalized the Lake Elmo Airport LTCP in 2016. As the city of Lake Elmo continues to grow, there may be land use compatibility issues off the runway end at Lake Elmo Airport. The Long Term Comprehensive Plan update for the Airport, which was completed ~~anticipated to be completed in~~in 201~~5~~6, ~~will~~ addresses the issue of extending or relocating the primary runway. Lake Elmo Airport's primary role is not expected to change throughout the foreseeable planning period. The classification of the airport will continue to be that of a

- Reliever in the MAC system,
- Intermediate Airport per Minnesota Department of Transportation – Aeronautics (MnDOT) criteria,
- Minor Airport in the regional system. T

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The existing runways at Lake Elmo Airport are short ~~.~~ ~~I~~in comparison to the other MAC owned Reliever Airports~~., b~~Both the primary and crosswind runways at Lake Elmo Airport are the shortest in the system.

Based on the aviation activity forecasts, the future critical design aircraft for Lake Elmo Airport will continue to be represented by the family of propeller-driven aircraft with fewer than 10 passenger seats.The City and MAC have been working together with each other and MnDOT, to coordinate with regards to planning and land use compatibility issues around the airport. The MAC is currently in the environmental review process for the improvements at the airport.

Figure 9-10: South St. Paul Airport

South St. Paul Airport

Airport Data:

	Existing (2014)	2020	2025	2030
Based Aircraft	274	298	323	351
Operations	64,800	71,520	77,520	84,240
Land Area	270 Acres	270	270	270

Source: South St. Paul Airport LTCP, 2014

Airport Discussion:

South Saint Paul Airport is located in South Saint Paul/Inver Grove Heights approximately seven miles south of downtown Saint Paul. The airport is owned and operated by the City of South Saint Paul. There is no air traffic control tower and the airport is designated a minor airport in the regional aviation system. The opportunities at South Saint Paul include obstruction removal, runway length, landside development and land use compatibility. The Long Term Comp Plan

was completed in 2014. The LTCP analyzed runway length, airspace obstructions, obstruction removal, and conduct a financial feasibility analysis for capital improvement projects in the future. The LTCP also developed a strategic business plan for growth opportunities in the future. The airside analysis showed that there were physical constraints for extending the runway, however, the use of stopways to provide additional takeoff distance for aircraft was possible. The preferred alternative that was selected in the LTCP, is to construct a 300 foot stopway on one end of the runway, and a 120 foot stopway on the other end of the runway. This alternative satisfied the runway length issues at the airport.

An Emerging Issue: Unmanned Aircraft Systems (UAS)~~Aerial Vehicles~~

Unmanned aircraft systems ~~erial vehicles~~ (UAS~~V~~s) are starting to emerge as a new technology f~~f~~or farmers, commercial operators and the general public. An unmanned aircraft system, sometimes called a drone, is an aircraft without a hu~~i~~man pilot onboard;~~,~~ instead, the UAS is controlled ~~from~~ by an operator on the ground. The FAA has produced rules and regulations for UAS flying in and around airports and disaster areas. ~~At the time of this plan, t~~The most recent FAA regulations include pilot/aircraft and location requirements. The rules can be found here: https://www.faa.gov/uas/getting_started/

~~is currently in the Notice of Proposed Rule Making for public operation of UAVs.~~ The existing regulations prohibit the general public from operating UAS~~V~~s within 5 miles ~~from~~ of an airport~~s~~ without prior notification to the airport and air traffic control ~~in Class B airspace, which is essentially most of the metropolitan area.~~ Unmanned aerial vehicle regulations and legislation by both the state and federal authorities will be ~~followed and~~ updated in the near future.

Minnesota Deprtment of Aeronautics has further information about how UASs should be registered and operated. The MnDOT information can be found here: http://www.dot.state.mn.us/aero/drones/

It is important that operators register their aircraft and follow all opetaional rules. Operators should check their local community for additional guidance and rules. Many communities are adopting rules for UAS operations.

This technology will be moving quickly, and the Met Council will follow the development of regulations for a better understanding how these regulations will affect citizens, communities and the region. ~~will be followed in the near future.~~

Information Item

DATE:	November 3, 2017
TO:	Technical Advisory Committee – Planning Subcommittee
PREPARED BY:	Cole Hiniker, Multimodal Planning Manager (651-602-1748)
SUBJECT:	2040 TPP Update – Preliminary Draft Transit Chapter

Attached is the preliminary draft of Chapter 6: Transit Investment Direction and Plan for TAC Planning review, prepared as part of the 2040 TPP Update. This memo summarizes the key themes of the changes to the chapter as well as outstanding issues that are not yet addressed.

Summary of key changes:

- Updates to key statistics, trends, and recent transit improvements
- Improved discussion of transit modernization and expansion under bus and support system, and relationship to the Regional Solicitation
- Acknowledgement of emerging shared mobility technology in transit
- Cleaned up, more focused, and updated discussion of transit facilities resulting from studies and community outreach efforts (e.g. Better Bus Stops initiative)
- Moved discussion of modern streetcar into the transitway modal introduction and moved all transitway statuses into their appropriate revenue scenario discussion (This does not show up as a red-lined change since the section was just moved within the overall chapter, only actual changes to the text show as red-lined.)
- Removed and refocused references to the Counties Transit Improvement Board
- Updated transitway project details and current statuses
- Added additional tiers of transitway status to the Increased Revenue Scenario to recognize the advanced progress made on a number of corridors that are awaiting funding

Outstanding issues not yet addressed:

- Most updated maps are not yet available and are noted appropriately in the draft (in the figure titles)
- A number of discussions are awaiting conclusions in the coming months to be included in the draft: TDM coordination across chapters, park-and-ride study results, Highway 169 BRT study recommendations
- The status updates of the Rush Line and Riverview corridors are awaiting funding detail from Ramsey County that may allow one or both of the projects to be moved into the Current Revenue Scenario
- Table 6-7 will document basic statistics for transitway corridors and is currently under development
- The Transit Investment Plan Financial Summary has not yet been updated pending the completion of the finance chapter

Council staff will take comments on this draft from TAC Planning, TAC and TAB and other stakeholders before releasing a revised draft for public comment in spring 2018. Please contact Katie White (katie.white@metc.state.mn.us) for questions on how to submit comments on the initial draft.

Chapter 6

Transit Investment Direction and Plan

Residents and businesses view a strong public transit system as an essential part of a transportation system that will serve a **prosperous**, **livable**, **equitable** region. The federal government, state government, and the region have all acknowledged that a **sustainable** future must include a variety of options for travel within urban areas. Transit service and facilities must be located where they will bring a strong return on the investment. Park-and-ride facilities are best located in suburban and developing areas, while high-frequency bus service is best located in urban neighborhoods. In order to be good **stewards** of public investments, the region must invest in transit strategically with solutions that broadly strive toward this plan's regional goals and objectives, and integrate with land use and other regional systems. In this way, transit benefits the entire region, including places with no or limited service.

The region's transit investment plan plays a role in realizing all of the goals of the Transportation Policy Plan. However, the transit investment plan also plays roles in addressing the specific performance-based objectives. The objectives provide the foundation for investment factors that are used to set transit investments priorities. Table 6-1 helps link to parts of the transit investment plan that summarize investments or guide investment decision-making.

Table 6-1: Linking Transit Investment Direction and Plan to Goals and Objectives

Goal	Objectives Guiding Investments	How are these objectives reflected in the plan?
Transportation System Stewardship	A. Efficiently preserve and maintain the regional transportation system in a state of good repair. B. Operate the regional transportation system to efficiently and cost-effectively move people and freight.	This plan fully funds the existing transit system and has tools to ensure that it is managed to be efficient and cost-effective [*insert link to investment summaries*]. Investments in expansion will also consider cost-effectiveness as an investment factor to get the most out of new projects [*link to investment factors*].
Safety and Security	A. Reduce crashes and improve safety and security for all modes of passenger travel and freight transport. B. Reduce the transportation system's vulnerability to natural and man-made incidents and threats.	Safety and security are essential elements of the transit system. Their consideration should be integrated with all investments. Specific investments opportunities are also discussed in the plan [*insert link to Safety and Security*].
Access to Destinations	A. Increase the availability of multimodal travel options, especially in congested highway corridors.	Providing access is a fundamental role of the transit system. This plan has multiple considerations for increasing ridership and the

	B. Increase travel time reliability and predictability for travel on highway and transit systems. D. Increase transit ridership and the share of trips taken using transit, bicycling and walking. E. Improve multimodal travel options for people of all ages and abilities to connect to jobs and other opportunities, particularly for historically under-represented populations.	availability of transit throughout the investment factors. Equity is also an important investment factor to address gaps in access to opportunity that exist in the region [*insert link to investment factors*].
Competitive Economy	A. Invest in a multimodal transportation system to attract and retain businesses and residents. B. Improve multimodal access to regional job and activity centers identified in *Thrive MSP 2040*.	This plan includes transitway system investments that will make the region a more attractive place to live and do business. The plan also includes an Increased Revenue Scenario that will broaden the investments to include more bus service, allowing transit to serve more parts of the region [*insert link to investment summaries*]. Connecting to jobs is an important emphasis on the investment factors [*insert link to investment factors*].
Healthy Environment	A. Reduce transportation-related air emissions. C. Increase the availability and attractiveness of transit, bicycling and walking to encourage healthy communities and active car-free lifestyles.	This plan includes investment factors that consider the impacts on the environment, particularly pollution related to congestion [*insert link to investment factors*]. Additional impacts could be related to land use planning that encourages car-free lifestyles [*insert link to "Land Use and Local Planning"*].
Leveraging Transportation Investments to Guide Land Use	A. Focus regional growth in areas that support the full range of multimodal travel. C. Encourage local land use design that integrates highways, streets, transit, walking and bicycling.	This plan is intended to help shape the growth of the region with transit investments as catalysts for livable places. Investment factors help guide transit to areas that are adequately planning for high-density, livable places [*insert link to investment factors*].

The ~~Public Transit~~ Existing Transit System

The regional transit system consists of different types of services, programs, and related infrastructure that serve a variety of roles.

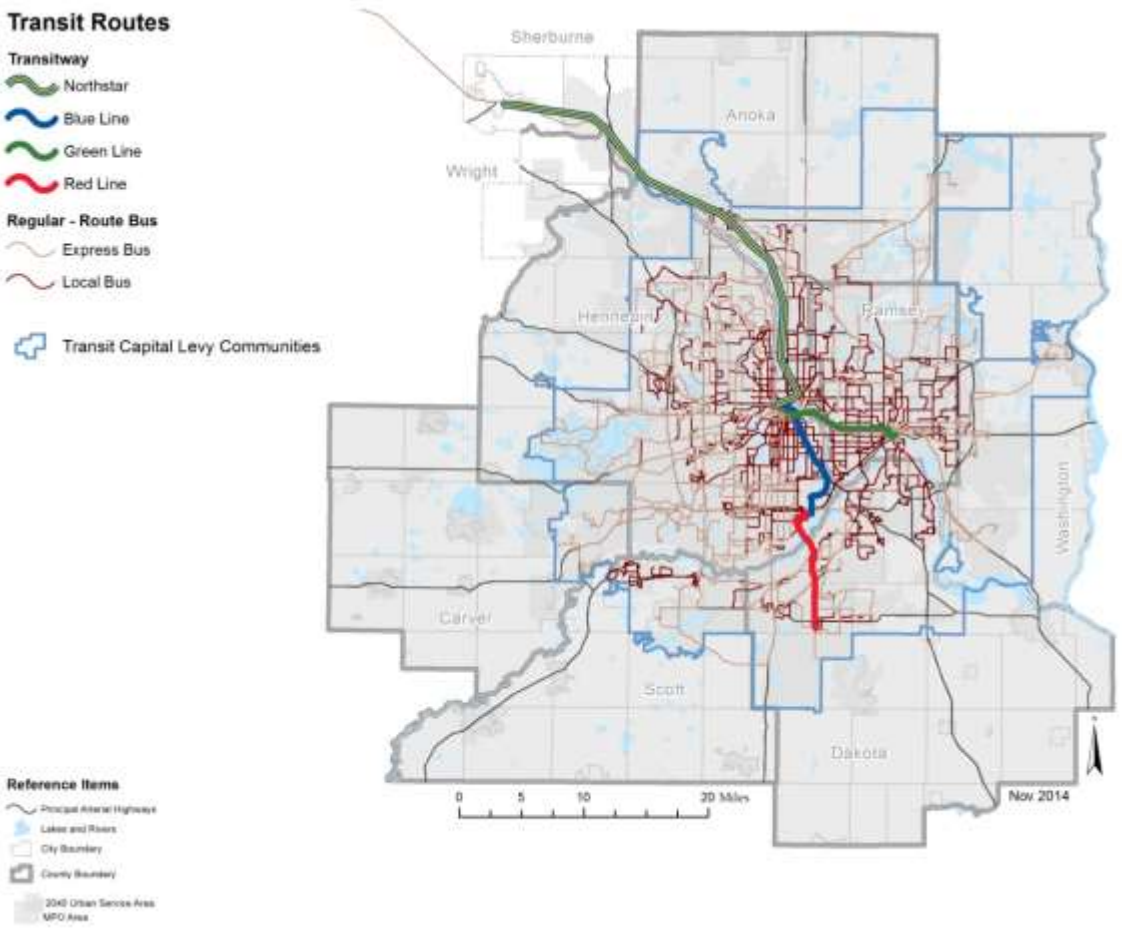
Types of Services

Six types of public transit service currently operate in the Twin Cities area:

- Regular-route bus service is provided on a fixed, published schedule along specific routes, with riders getting on and off at designated bus stops. Regular-route service is provided using a variety of bus types that operate local service and express service. The ~~11~~ 12 bus routes in the high-frequency network carried about 30% of the region's average weekday riders in ~~2013~~2016.
- Light rail transit (LRT) service is provided by electrically powered trains operating at high frequencies in primarily an exclusive right-of-way. Light rail uses specially designed transit stations and amenities.
- Bus rapid transit (BRT) service is provided at high frequencies with unique buses and specially designed facilities and amenities similar to light rail.
- Commuter rail lines operate on traditional railroad track powered by diesel trains with limited stops. Commuter rail typically serves morning and evening commuters.
- Dial-a-ride is a shared-ride service that that allows customers to schedule pickup times. There are two types of dial-a-ride service in the region: general public dial-a-ride and Metro Mobility service mandated by state and federal law.
- Public vanpools are made up of five to fifteen people, including a volunteer driver, commuting to and from work destinations throughout the region on a regular basis in a subsidized van. Vanpools typically serve origins and destinations not served by regular-route bus service.

Currently about ~~212~~ 217 regular bus routes operate in the region: ~~110~~ 111 local and ~~102~~ 106 express. Also in service are two light rail lines (Blue Line and Green Line), ~~one~~ two BRT lines (the A Line and Red Line), and one commuter rail line (Northstar). These services are shown in Figure ~~1-3~~6-1.

Figure ~~1-3~~6-1: Existing Transit System by Service Type (NOT YET UPDATED)



Transit Service Providers

A number of providers operate transit service in the region. The size, geographic service area, and service types of these providers vary, but the Council works with each provider to ensure the transit system is integrated and cohesive in addressing the region's needs. Providers include:

- Metropolitan Council
    - Metro Transit is the largest transit provider in the region and operates most of the region's regular-route bus service, and all light rail and commuter rail lines.
    - Metropolitan Transportation Services manages a variety of contracted services including regular-route bus, Metro Mobility Americans with Disabilities Act (ADA) service, Transit Link general public dial-a-ride, and the Metro Vanpool service.

- Suburban transit providers operate regular route and, in some cases, dial-a-ride service for 12 suburban communities. These providers are: Minnesota Valley Transit Authority, SouthWest Transit, and the cities of Maple Grove and Plymouth.
- University of Minnesota provides regular-route bus service around and between the Minneapolis and Saint Paul campuses.
- There are transit services in the Twin Cities urbanized portions of Wright and Sherburne counties. Tri-CAP currently provides weekday dial-a-ride and deviated rural-route service within the City of Elk River and Trailblazer provider similar services within St. Michael and Albertville. More information on these services can be found in MnDOT's Annual Transit Report.
- Small transit services or individual routes are occasionally operated by other local communities as unique or demonstration services.

Transit Service Areas

Regular-route service is primarily provided by the Metropolitan Council and the suburban transit providers within the Transit Capital Levy Communities, the communities within the seven-county region where a property tax is levied to pay for transit capital needs. The Transit Capital Levy Communities are established in state law but have changed in response to the growing region, most recently with the additions of Lakeville, Forest Lake, Columbus, and Maple Plain.

The ~~federal Americans with Disabilities Act (~~ADA~~)~~ requires complementary service for certified riders who want to travel where regular-route transit service is available but are unable to use the regular-route system due to a disability. The state has established additional service areas beyond that through law.

Dial-a-ride service is provided for the general public in areas of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties where demand cannot be served on regular-route transit. Dial-a-ride service is also available in the contiguous urbanized portions of Sherburne and Wright counties.

Transit Capital and Infrastructure

The Union Depot in downtown Saint Paul serves as a multimodal hub that connects local bus service, light rail transit, intercity bus services, Amtrak passenger rail, and potential future transitways. In 2014, a second regional multimodal hub opened in downtown Minneapolis at Target Field Station, where two light rail lines serve and additional lines will come together in the future to meet the downtown Northstar commuter rail station and other services.

The regional transit system requires an average of about 1,300 regular-route buses, ~~74~~ 91 light rail vehicles, 18 commuter rail vehicles, 6 commuter rail locomotives, and ~~425~~ 584 dial-a-ride buses to operate.

In ~~2013~~2016, the region had ~~110~~ 109 park-and-rides with nearly ~~30,000~~34,200 spaces served by bus and rail transit. ~~Additional spaces and facilities are planned to open in 2014.~~ The region also has ~~28~~ 26 transit centers with facilities that improve waiting conditions and the transfer experience between buses and trains. With the opening of the Green Line in 2014 and the A Line in 2016, the region has ~~47~~ 86 transit stations serving existing light rail, BRT and commuter rail lines.

Better Bus Stops: Equity in Bus Stop Modernization

Metro Transit created the Better Bus Stops program in 2014 to enhance access to opportunity and committed to install 150 new shelters and enhance 75 existing shelters by adding lighting, heaters, or pedestrian improvements. Investments are focused in areas of concentrated poverty where more than half of residents are people of color.

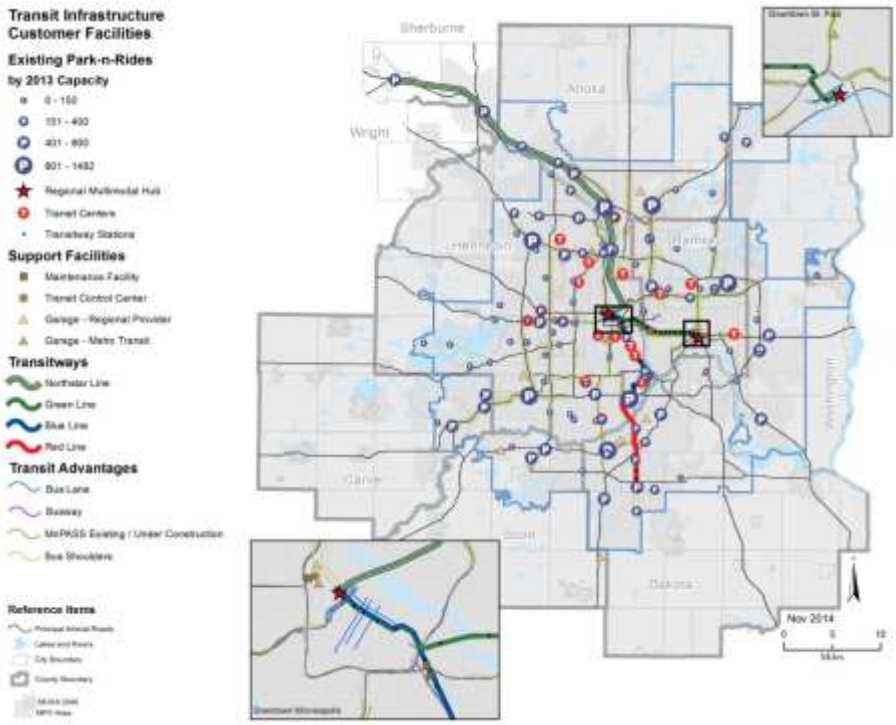
A portion of the grant funding was directed to community engagement in communities traditionally underrepresented in decision-making and who are most impacted by decisions. The community engagement was successful in fostering greater transparency in Metro Transit's bus stop improvement decisions, and gathering information about transit customer and community priorities useful for the agency's shelter placement guidelines.

Facilities have been built to give transit advantages over general traffic including:

- ~~About 300~~337 miles of bus-only shoulders
- ~~33~~ 7 miles of bus-only lanes on city streets
- ~~94~~ 95 highway ramp meter bypasses
- ~~53~~ 66 miles of managed lanes
- 7 miles of exclusive busways

The region is also supported by a substantial system of transit support facilities, both public and private, that includes bus garages, maintenance buildings, rail support facilities, and operations centers.

Figure ~~1 4~~6-2: Existing Transit Infrastructure (NOT YET UPDATED)



Transit System Improvements since the Last Plan

~~Previous versions of the Transportation Policy Plan set a goal of doubling transit ridership by 2030 by expanding the bus system and building a network of transitways.~~ The region has made significant progress in building transit capacity for future growth in the region. The bus system has expanded to new markets, particularly the reach of express service and park-and-rides, and continues to grow service in the strongest markets. New and improved transitways have opened and several additional transitways are in development. Examples include:

- ~~Park-and-ride capacity has been nearly doubled since 2003, from 15,000 to 30,000, with many facilities newly built or expanded resulting in added capacity for future growth.~~
- ~~The Urban Partnership Agreement built needed express bus capacity and amenities in downtown Minneapolis on Marquette and Second avenues.~~
- ~~Urban and suburban local service has been redesigned to better serve new transitways as they open, particularly along light rail lines.~~
- ~~A number of changes to the transit system have contributed to better performance including improved branding, smartcard fare collection technology (Go To system), low-floor and hybrid vehicles, and improved customer information.~~
- ~~Transit Link was implemented in 2009 to better coordinate general public dial-a-ride service in the region.~~The region's first arterial bus rapid transit line, the A Line,

opened in 2016, improving connections from the METRO Blue Line and Green Line to additional neighborhoods in St. Paul, Minneapolis, and Roseville.

- Metro Transit set a new single-day record of nearly 370,000 rides, bolstered by the recent additions of the A Line, METRO Green Line, and METRO Red Line.
- A new online bus rapid transit station opened to replace an existing offline station on the METRO Red Line, ~~generating over 20% more daily rides based on early indications.~~improving service speed and reliability and increasing ridership.
- Several new park-and-ride facilities opened throughout the metro area, creating transit capacity for future growth of the region.
- A new mobile app was introduced by Metro Transit that includes trip planning features and a new mobile ticketing platform.
- Progress continued on the development of the METRO Green Line and Blue Line extensions, the METRO Orange Line, the METRO Gold Line, and several arterial bus rapid transit corridors.
- The high frequency service network expanded with the introduction of service improvements to routes 2 and 11. Ridership on both routes increased by over 15% after being introduced to the high frequency network. Additional expansion of the high frequency network is being currently being explored.
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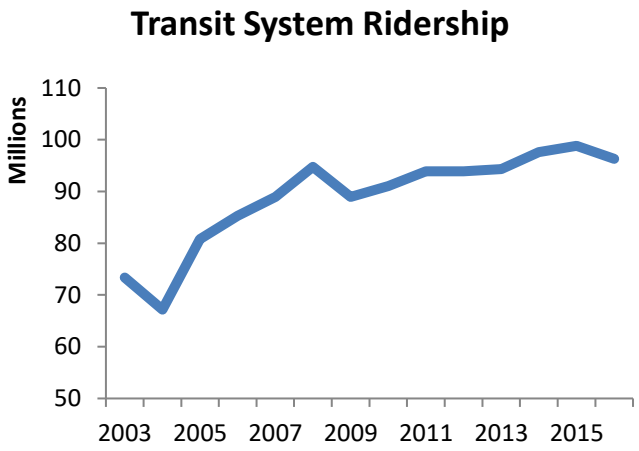


~~The transitway system is also expanding:~~

- ~~The all-day frequent service on light rail and highway bus rapid transit lines underwent a rebranding process that was implemented with the opening of the second line (Red Line). The system was branded as "METRO" with color designations for each line.~~
- ~~METRO Blue Line (Hiawatha) opened as the first light rail line in 2004 and improvements since then have added and expanded stations to meet demand.~~
- ~~Northstar opened as the first commuter rail line in 2009.~~
- ~~METRO Red Line (Cedar Ave) opened as the first bus rapid transit line in 2013.~~
- ~~METRO Green Line (Central Corridor) opened as the second light rail line in 2014.~~

The result of these improvements has been increased use and demand for transit services. ~~In the last decade, but prior to the opening of the Green Line:~~Since 2003, the year before first light rail opened in 2004 (METRO Blue Line), the region has seen:

- ~~Transit ridership has increased by about 25%.~~
- ~~Productivity, measured in riders per hour, has increased by about 17%.~~
- ~~Park-and-ride usage is up about 80%.~~ Transit rides increase by over 30%
- Park-and-ride users increase by nearly 70%
- Five operating transitways now account for one out of every four transit rides

Passenger Travel beyond the Region

Each mode of transportation best serves a specific trip distance, providing its own unique characteristics and values for interstate and international mobility. The vast majority of intercity passenger movements occur by automobile, especially on the National Highway System roads maintained by MnDOT and other states. The Twin Cities region is also served by Amtrak passenger rail service and a number of intercity bus companies and airlines.

Amtrak provides connections to Portland, Seattle, and Chicago. Trains arrive and depart once a day in each direction and Amtrak coordinates with intercity bus companies throughout the region for service beyond the current station stops along their routes. In 2014, Amtrak relocated its platform and services to the newly renovated Union Depot in downtown Saint Paul. Target Field Station along the BNSF tracks in downtown Minneapolis currently serves the Northstar commuter rail, but could also be utilized by intercity passenger trains in the future. Both Target Field Station and the Union Depot renovation have been constructed in the last 10 years as multi-modal stations.

MnDOT has primary responsibility for planning intercity passenger rail in Minnesota; the Council participates on advisory committees to assure that any new or upgraded rail service is consistent with other regional plans. Consistent with the Minnesota State Rail Plan, MnDOT is currently studying several potential new high-speed rail services to link the Twin Cities with Chicago, ~~Duluth, and Rochester~~and Duluth. ~~For information on these studies, see the MnDOT passenger rail webpage.~~ ~~Other recent proposals~~These corridors would increase the number of conventional-speed train trips to serve increasing demand for passenger travel to eastern Wisconsin and Chicago, as well as to and from ~~the Bakken oil fields in western~~ North Dakota and Montana. For information on these studies, see the MnDOT passenger rail webpage.

Regionally,- intercity bus service provides ground transport connections to several important destinations in the upper Midwest and the Twin Cities in particular, including service to Minneapolis-Saint Paul International Airport as well as key stations in downtown Minneapolis and Saint Paul. Recent upgrades to attract passengers include Wi-Fi on buses, in addition to express bus services with travel times that are more competitive with the private automobile. Most intercity bus service in Minnesota is operated by private national service providers such as Megabus, Greyhound, and Jefferson Lines. However, the State of Minnesota maintains an interest in enhancing statewide connectivity via partnerships with nonprofit and local public transit providers who operate in rural areas. MNDOT's Intercity Bus program provides "feeder service" to and from small towns in greater Minnesota

to supplement the express routes crossing the state. Jefferson Lines's route to Duluth is an example that makes local stops in 8 rural communities along I-35. The Metropolitan Council has no role in planning or providing these intercity bus services. ~~Intercity bus service continues to remain a presence in the region, with recent upgrades to attract passengers. These include Wi-Fi on buses and express services that provide bus travel times that are more competitive with the private automobile. Intercity buses are all privately operated. Providers include Megabus, Greyhound, and Jefferson Lines. These providers serve destinations throughout the upper Midwest and have key stations in both downtown Minneapolis and Saint Paul. Although the Council has no role in planning or providing these intercity bus services, MnDOT does work with these operators and provides some subsidies to support bus service in Greater Minnesota~~

See Chapter 9 for air travel beyond the region.

Transit Investment Direction Overview

The following are brief descriptions of the different sections of the transit investment plan.

Transit Planning Basics – An important part of understanding the transit investment plan includes understanding the many factors that influence the design of the transit system. Local development patterns and demographics – factors external to transit providers – as well as route and network design decisions made by transit providers are important factors in of the success of a transit system. Certain factors are used to establish Transit Market Areas, a regional transit planning tool designed to match transit demand to the types and levels of service provided. Regional Transitway Guidelines help guide the planning and implementation of transitways. Local governments and transit providers need to work together to best align these factors in order to maximize the success of the transit system and its potential integration with communities.

Bus and Support System Investment Plan – The bus system will continue to be the workhorse of the regional transit system by providing the majority of transit trips, providing essential connections to transitways, and providing options throughout the entire region. The bus and support system plan includes the following elements to address current and future needs:

- Tools to manage the transit system to be cost-effective within available resources
- Alternatives that can be provided where regular-route service is not available or accessible for those with a disability
- Opportunities for expansion and improvement of bus service, and a process for identifying priorities from that vision
- Opportunities for expansion and improvement of transit facilities that better support a good customer experience and system operations
- Other elements of the transit system that support its effective, safe, secure, and reliable operation

These elements, and the processes and plans that support them, are described in more detail in Bus and Support System Investment Plan [*insert link*]. The plan does not identify specific investments in the bus and support system. Rather, the plan identifies general investment categories and investment strategies.

Transitway System Investment Plan – The region will also need to build, operate, and maintain a system of transitways that will improve service in high-demand corridors and connect more areas of the region with frequent, reliable transit service. Equally as important, transitways provide the permanence and attraction to developers, residents, and businesses that will help shape the high-density, mixed-use, livable development patterns that are growing in demand and that are the focus of many *Thrive MSP 2040* outcomes. Land use planning and implementation by local governments will also help shape investments in transitway corridors. The first priority will be to operate and maintain the existing transitway system. Expansion of the transitway system will be guided by investment factors that will assist the region in setting priorities for investment that have the greatest return for the region. The transitway system includes a number of options to match appropriate investments with needs throughout the region. These elements, and the processes and plans that support them, are described in Transitway System Investment Plan [*insert link*]. The plan identifies specific project investments in the transitway system.

Investment Summary – The transit investment plan includes a financial summary that illustrates the level of investments planned across the elements in the plan within two revenue scenarios:

- A Current Revenue Scenario that identifies planned investments within reasonably expected revenue assumptions
- An Increased Revenue Scenario that identifies a level of investment needed to build out and expand the transit system

Transit Planning Basics

The transit system is a network of routes, facilities, and services that need to be well designed and managed to best achieve regional goals, including good stewardship of public resources. This is especially true in a fiscally constrained situation, where available funding only allows for implementing and operating the highest priority projects in the plan.

A number of demographic and urban design factors exist that are generally outside the control of transit providers and that help shape the design and determine the potential success of transit investments. Demographic factors are, for the most part, outside the direct control of any agency or government body, though they can be affected by agency actions over time. Urban design factors are generally managed by the land use planning efforts and development controls of local governments. A successful transit system requires the cooperation of transit agencies and local governments within their respective roles.

In addition to demographic and urban design factors, a number of transit route and network design factors guide the design of transit service and ultimately influence the overall success of the transit network. Transit providers shape these factors in the design of the transit system to manage it relative to land use.

Demographic Factors

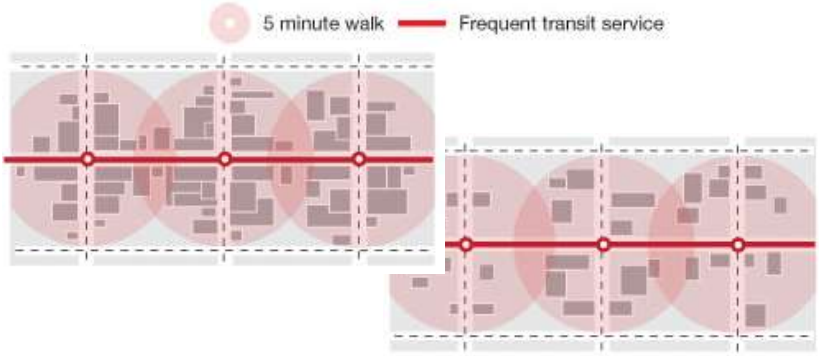
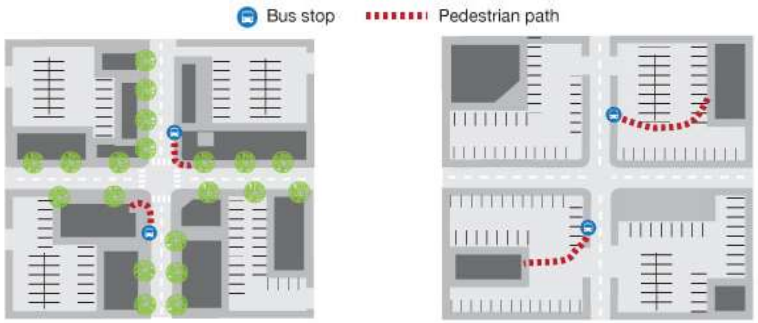
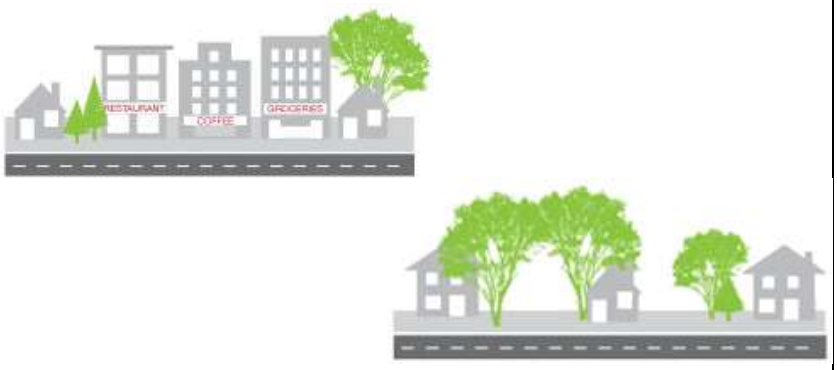
Demographic factors are outside the direct control of transit providers but play a significant role in the design of transit service. While these factors are out of the direct control of transit providers, the impact of transit investment can indirectly influence these factors by providing access to oppotunity. These factors include:

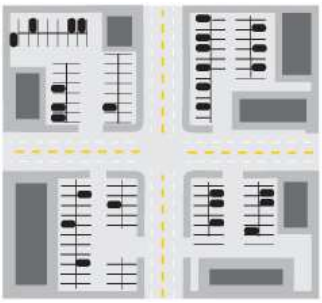
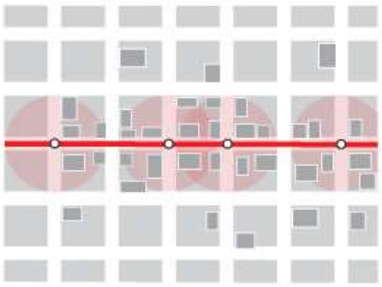
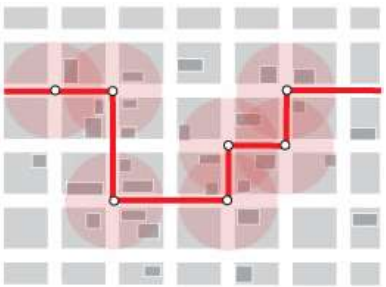
- Auto-ownership or the number of cars available in households
- Demographics such as household income, number of children, age, disability, and marital status
- Job status and unemployment rate

Demographic factors also include areas of concentrated poverty and areas of concentrated poverty where at least 50% of the residents are people of color, which are a special feature in *Thrive MSP 2040*. More information on these is discussed under Transit Market Areas [*insert link*].

Urban Design Factors

Urban design factors that fall within the control of local governments, such as land use, planning, and infrastructure design, also influence the design and potential success of transit services. Local governments and transit agencies need to work together to best match transit service with local land use and maximize the opportunities for the success of the transit system. For communities that desire more transit service, local governments can choose to plan for transit-supportive land use, but the changes will likely take place over time. ~~Investments in transit service will need supportive land use to be sustainable.~~ The following factors are the primary components of effective local transit service. Express and commuter services are discussed separately.

Urban Design Factor	More Transit Supportive	Less Transit Supportive
Encourage population and activity density Density supports transit because there are more people and activities within walking distance of nodes. Additionally, people living in dense areas are more likely to use transit because better transit options can be provided in order to be more competitive with driving.		
Design for a pedestrian-friendly environment All transit users are pedestrians for at least some portion of the beginning and end of their trip. A pedestrian-friendly environment encourages transit use by providing a comfortable walking environment and minimizing the walking distance from the transit stop to front doors.		
Encourage a mixed-use land use pattern Transit is most effective when it serves a variety of trip purposes and destinations. Mixed-use development patterns encourage travel patterns with many origins and destinations throughout the day, making transit more effective and easy to provide for a variety of purposes.		

Develop an interconnected street network that maximizes pedestrian and bicycle access and allows for simple route design An interconnected street network minimizes barriers and maximizes the area that is accessible within a short walk or bike to a transit stop, allowing each stop to serve more people. In addition, it supports the design of simple, direct routes that are efficient and easy to understand.	 
Support travel options that encourage or complement using transit Transit is more effective in areas where the cost of driving and parking are comparable to the cost of using transit, and alternatives like car-sharing, bicycling, and walking are available and convenient.	 
Plan for linear growth in nodes along corridors A linear pattern of development along corridors is easier to serve with transit. Transit routes that are linear and consistent are most effective to provide and easier for customers to understand. This also requires coordination across community boundaries.	 

The factors listed above describe the general relationship between local land use decisions and transit planning. More detail on these factors and the considerations for local communities on land use planning around transit is available in "Land Use and Local Planning" [*insert link*].

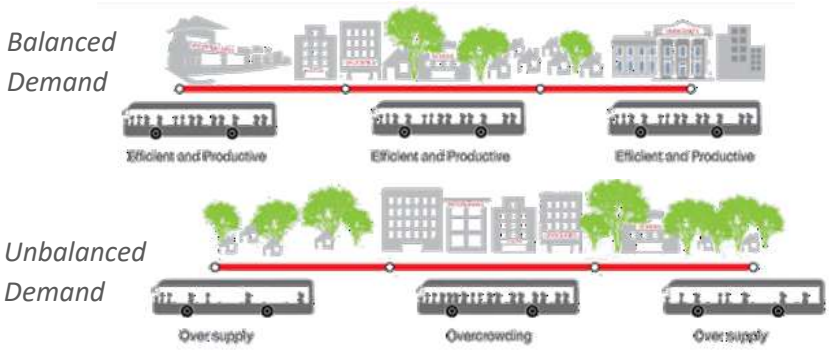
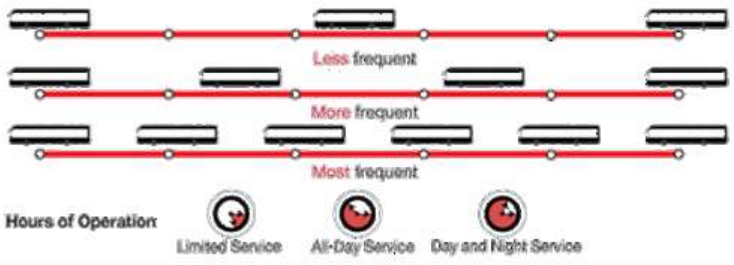
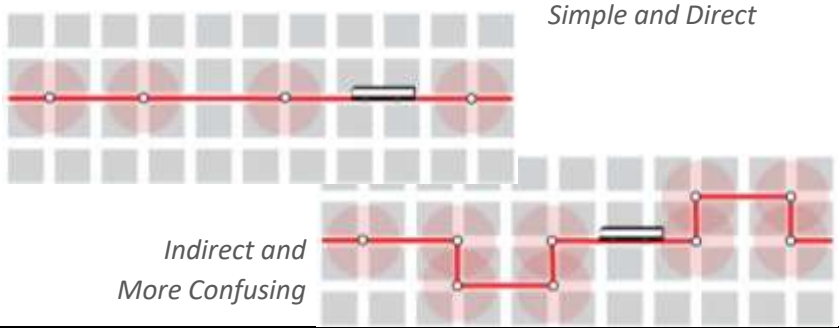
Transit Route and Network Design Factors

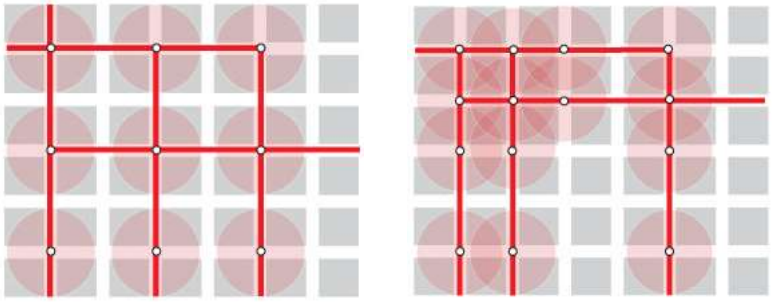
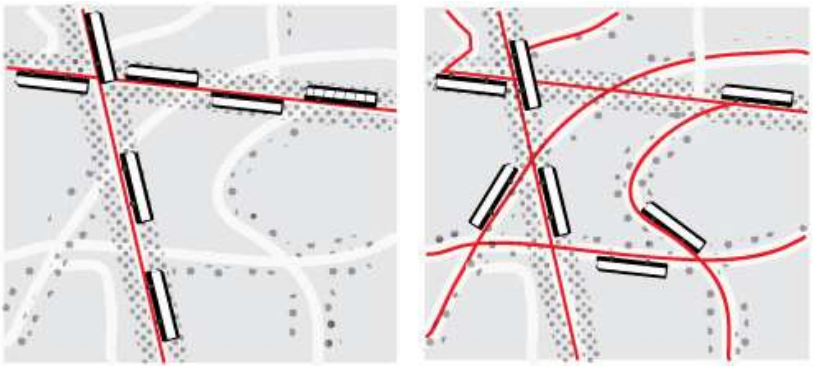
The quality and design of transit service is an important part of the success of transit. Regional transit providers must weigh the potential benefits of transit investments against the costs, in order to best manage the system to be cost-effective and efficient. This applies to times when

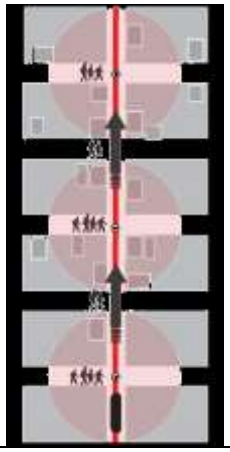
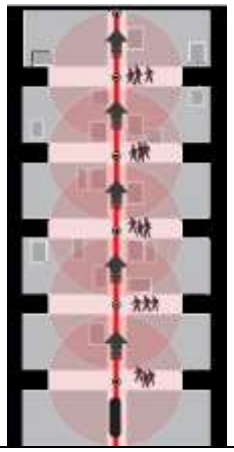
the transit system is stable, when the transit system is expanding, and when the transit system is facing cuts. There are also different factors for the design of local transit service and express and commuter transit service.

Local Route and Network Design

The most important factors that transit providers look for when designing local transit routes and networks are:

Transit Design Factor	Illustration
Serve a variety of trip purposes and destinations Transit will generate higher ridership and more balanced passenger loads if it is designed to serve a number of different trip purposes along the route and throughout the day.	
Design routes with strong anchors at both ends Transit is more efficient with balanced passenger loads in each direction. Important destinations at each end help to distribute demand evenly and limit overcrowding of vehicles and over-supply of service.	
Match level of service to demand Transit will be more effective if the type and level of service provided is appropriate to the demand for transit. This allows providers to get the most out of high-demand areas while still serving lower-demand areas.	
Design simple, direct routes Transit service is more efficient to provide and easier for customers to understand when routes are designed in simple, linear patterns without complicated paths.	

Avoid duplication of service Routes should be spaced far enough apart so that they do not compete with one another for riders at the expense of service coverage in other areas.	 *Less Duplication More Duplication*
Provide useful customer information and comfortable amenities Transit ridership grows and the user experience is better when customers can easily understand the system and are comfortable while waiting at or leaving a stop and riding on a bus or train.	
Balance frequency and coverage An effective transit network finds a balance between providing fast, frequent routes that offer more convenience and providing coverage to more area but with infrequent, less-convenient service.	 *More frequent, less coverage Less frequent, more coverage*

Balance walking distance and travel speed Routes with more stops provide shorter walks to transit but at slower travel speeds. A transit network needs to balance between providing fast service with fewer stops and slower service with many stops.	*Faster service, less access* 	*More access, slower service* 

Commuter and Express Route Design

The factors that guide the design of express routes are somewhat different from those covered in the above section for local routes. Express routes are focused on providing fast, reliable trips into major regional centers. The most important factors for express service success are high-density origins and destinations at both ends of the route (such as at a park-and-ride and downtown) and demand management that balances parking supply and cost with the demand for parking and access for transit. The level and location of congestion can also be a substantial factor in the success of express bus services.

Transit Market Areas

Market Areas Overview

An important underlying element to the transit investment plan is the definition of Transit Market Areas. Transit Market Areas are defined by the demographic and urban design factors that are associated with successful transit service. There are five Transit Market Areas as well as some unique Market Area features. The Transit Market Areas are generally associated with community designations in *Thrive MSP 2040* as follows:

- Transit Market Areas I and II are mostly Urban Center communities where urban form and density are most supportive of transit. These areas also have the largest concentrations of transit-dependent residents in the region. Transit service in these areas focuses on providing a dense network of local routes with high levels of service to accommodate a wide variety of trip purposes. Market Area II will typically have a similar route structure to Market Area I, but lower levels of service, as demand warrants.
- Transit Market Area III is primarily Urban along with portions of the Suburban, Suburban Edge, and Emerging Suburban Edge and is generally characterized by overall lower density and less transit-supportive urban form along with some pockets of denser development. The primary emphasis of transit service in this area

is express and commuter service with some suburban local routes and dial-a-ride service providing basic ~~coverage~~access.

- Transit Market Area IV is primarily Suburban Edge and Emerging Suburban Edge along with portions of Suburban, and is generally characterized by consistently low-density development and an urban form that does not support frequent local transit service. Transit service in Market Area IV is primarily peak-period express and commuter service oriented to park-and-ride facilities that can effectively capture the lower density transit demand. Local trips are provided by general public dial-a-ride services.
- Transit Market Area V is generally all forms of Rural and Agricultural but does include the unique freestanding town centers of Stillwater, Waconia, Forest Lake, and Hastings; Market Area V is generally characterized by low-density development or undeveloped land not well suited for regular-route transit service outside of limited peak-period express and commuter service.

Unique Market Areas

The *Emerging Market* overlays are unique areas of Transit Market Areas II and III where significant pockets of higher density exist but surrounding conditions still limit the success of local transit. These areas should be a focus for future development that will connect them with areas of higher transit intensity, specifically looking at extensions of existing routes or connections.

Freestanding Town Centers are unique areas that grew independently of Minneapolis and Saint Paul and act as suburbs but are still separated from the urban and suburban areas by rural land. These areas typically have small downtowns of their own but also export many workers to other regional centers. Local transit services that connect to the region would not be as effective serving these areas given their location in the region, despite their relatively concentrated nature. However, these areas may still have express service demand and possible demand for small circulator services.

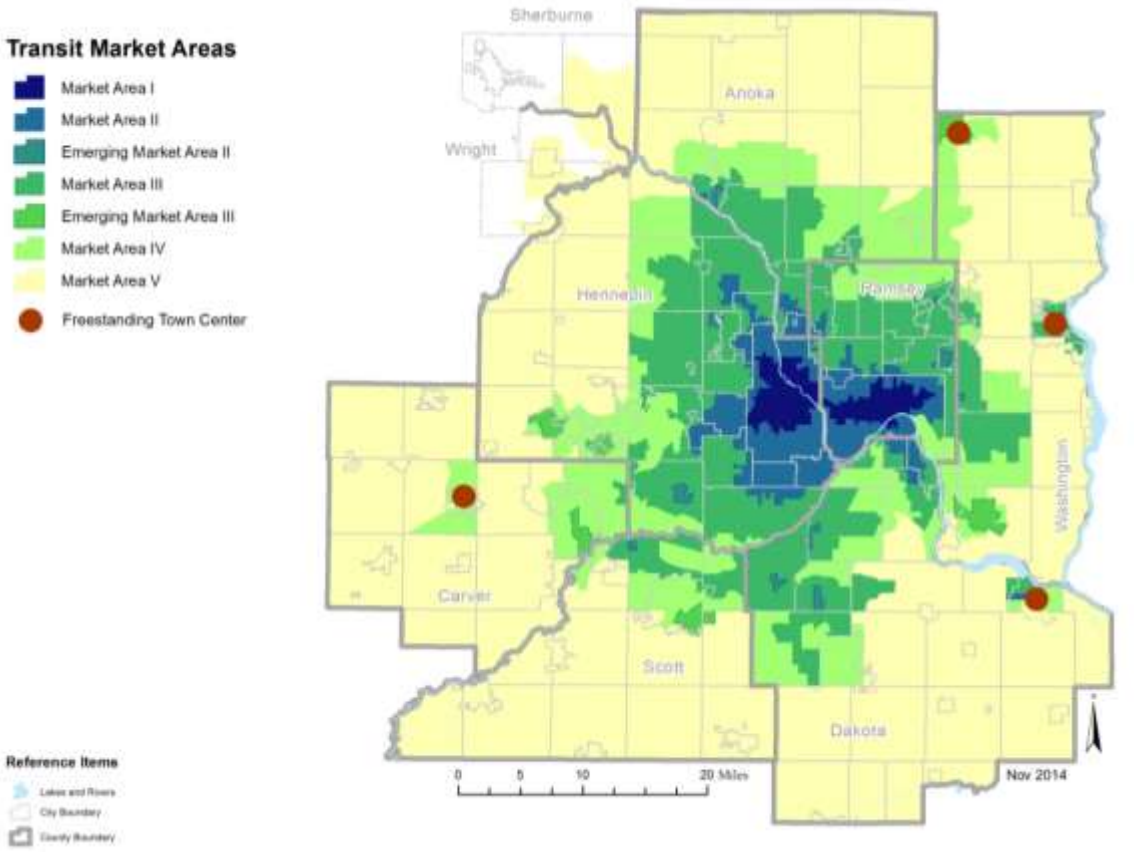
The Council and regional transit providers will also coordinate their efforts with MnDOT and transit services that connect beyond the seven-county metropolitan region. The Transit Market Areas do not address the feasibility of these kinds of services, which are coordinated on a case-by-case basis.

Two additional areas of emphasis in *Thrive MSP 2040* are important for consideration in transit service design, the special features of Areas of Concentrated Poverty, Areas of Concentrated Poverty where at least 50% of residents are people of color, and Job Concentrations. Residents of Areas of Concentrated Poverty must overcome a legacy of private disinvestment to access the opportunity of the region. In transit, this often means considering higher levels of service, better amenities, or unique service types focused on providing better access to jobs or education. These areas are also highly correlated with poor household access to a private

vehicle. Job Concentrations have good potential to be served with transit because of their density and level of activity. Many of these concentrations will need to adapt and continue adding density and diversifying land uses to be truly transit-oriented. This will need to be coordinated with continued investments in transit access to these areas as well as better transit facilities.

The Transit Market Areas are shown in Figure ~~6-1~~6-3 and described in more detail in Appendix G [*insert link*]. Transit Market Areas are primarily used to design the regional bus system, but some guidance on their application to transitways is discussed in the Regional Transitway Guidelines [*insert link*].

Figure ~~6-1~~6-3: Transit Market Areas



Regular-Route System Design

For the regular-route bus system, the guidelines on transit service design in Appendix G: Regional Transit Design Guidelines and Performance Standards (link) cover a number of topics including:

Regional Transit Design Guidelines and Performance Standards Topics

- Transit Market Areas and Service Options – the service types that are appropriate for the different Transit Market Areas
- Network Design and Access
  - Stop Spacing – the distance between bus stops on a route
  - Route Spacing – the distance between bus routes
  - ~~Stop Spacing – the distance between bus stops on a route~~
- ~~Route Structure~~
  - ~~Route Deviations – diversion of some or all service on a route to serve nearby land uses~~
- Service Levels
  - Service Span – the number of hours/day and days/week a transit service operates
  - Service Frequency – the average time between transit trips on a route
- Facility Siting and Design
  - ~~Bus Stop and Station Design – the siting, dimensions, and amenities of bus stops and stations~~
  - ~~Park-and-rides – the siting and sizing of park-and-rides~~Customer Facility Features – features at customer facilities that improve the customer experience
- Performance Standards
  - Productivity – passengers per in-service hour
  - Cost Effectiveness – the subsidy required to operate a route, per passenger

The application of these design guidelines impacts the cost and productivity of transit service. More detail on how these are used in transit investment decisions is discussed in Bus and Support System Investment Plan [*insert link*]. ~~The full detail on these guidelines and standards is available in Appendix G [*insert link*].~~

In addition to these guidelines regarding the design of transit service, there are two performance standards that are used to evaluate *individual transit routes* once they are in operation. These performance standards are Subsidy per Passenger and Passengers per In-Service Hour. Performance standards are discussed in more detail in Appendix G. These measures may differ from those developed to inform the Transportation Policy Plan on the performance of the *overall transit system*, which are discussed in Chapter 12 [*insert link*].

Transitway Design

For transitways, the region has developed the *Regional Transitway Guidelines* (2012). These guidelines assist in the development of transitways in planning, design, or operation and establish technical best practices for nine transitway elements. These elements are:

Regional Transitway Guidelines Topics

• Service Operations • Station Spacing and Siting • Station and Support Facility Design • Runningway • Vehicles	• Fare-Collection Systems • Technology and Customer Information • Identity and Branding • Project Development, Leadership, and Oversight

The guidelines are not intended to be design standards or specifications. Rather, they establish consistent, general practices that ensure transitways are developed in a consistent and equitable manner as the region's transit network continues to grow and expand. The guidelines are intended to be flexible enough so that each transitway can boast its unique characteristics and opportunities and planners can address its unique challenges. The guidelines are also intended to be a living document, evolving over time as the region's experience with transitways continues to grow. The full details on the Regional Transitway Guidelines are available from the Metropolitan Council [*insert link*].

The guidelines will be updated ~~through a work program item [*insert link to "Work Program"*]~~ on an as needed basis to address outstanding issues ~~identified in the first version~~, including the addition of dedicated bus rapid transit ~~characteristics, the addition of land use guidelines,~~ and updated best practices ~~, as needed~~.

~~Definitions of~~Transit Modernization and Expansion through the Regional Solicitation

This transit investment plan ~~refers to improvement~~discusses two unique funding opportunities to improve the transit system in the Current Revenue Scenario ~~in two different categories~~: modernization and expansion. ~~The application of these definitions may evolve with new opportunities and innovation.~~ These categories of funding coincide with the application categories for federal flexible funding through the Regional Solicitation. The needs in these categories will likely evolve over time and the Regional Solicitation allows for regular reviews of the focus and criteria used to rank project submittals. In addition, there are certainly projects that address both expansion and modernization and in some instances, there may be a gray area between the categories. The following is a general description of the needs basis for modernization and expansion projects.

Modernization

~~—~~ The focus of transit ~~M~~modernization is to improve the ~~the improvement of existing~~ transit system~~s~~ to better suit current needs and current transit riders. The focus of transit modernization will generally be to make transit more attractive to existing transit riders. This could include ~~making the systems more efficient, more effective, more user-friendly,~~investments that offer faster, more reliable travel times or investments that improve the overall customer experience. Other opportunities for modernization should be explored through preservation and maintenance investments that could improve efficiency,

effectiveness, or ~~ or more~~ environmental impact~~ly friendly~~. Modernization ~~is~~projects will usually involve a capital investment, but can also include ~~increased~~ impacts to operating investments. Some modernization investments may even reduce operating costs, such as energy efficiency improvements.

~~-~~Examples of modernization projects include:

- Improved bus shelters and comfort amenities at existing bus stops
- Technology and customer information improvements at existing bus stops
- Transit advantages such as bus shoulders or transit signal priority
- Energy efficiency improvements at a ~~n existing facility~~bus garage~~, or additions of customer amenities at existing stops or stations.~~
-

Expansion

The focus of transit ~~E~~expansion is to ~~the addition of something new or additional capacity in the~~improve the transit system to attract new transit riders or invest in future transit needs. The focus of transit expansion will generally be to add capacity, services, or facilities that grow (or facilitate the growth of) transit system use. Expansion projects will generally include a mix of capital and operating investments, since new facilities and service generally require additional ongoing costs.

Examples of expansion projects include:

- New transit routes
- New facilities that are not replacing existing ones
- Added park-and-ride capacity at an existing facility

Bus and Support System Investment Plan

Bus and support system investments include all elements of the transit system that are not specific to transitways, including: regular-route bus service, Metro Mobility, Transit Link and other dial-a-ride programs, vanpool, customer and support facilities, and other support systems. The transit system is operated efficiently and cost-effectively today because of the management tools already in place in the region. The primary role of the transit system is serving people, measured in ridership. The different investment opportunities in the transit system are aimed at serving people, whether through maintaining a route already on the streets, adding service to serve new customers, improving the user experience on transit, or making it more efficient to serve people better.

This section of the plan discusses the types of transit services that will be provided in the region and how they are managed, the facilities and amenities that support these services, and the potential for a better transit system for the people of the region. Investments in the regular-route bus system are guided by the Transit Market Areas and Regional Transit Design Guidelines discussed above. The specific details about how transitways fit into this system are discussed in Transitway System Investment Plan [*insert link*].

Transit System Management

Management of the transit system is an essential part of transit investment and stewardship of the system. A well-managed transit system ensures that public resources for transit are used as efficiently and cost-effectively as possible to meet the needs of transit customers while also considering the impacts and benefits to low-income populations and populations of color. The following are general descriptions of how the region will manage the transit system effectively by coordinating the efforts of multiple regional transit providers.

Route Performance Analysis

Transit providers should review their transit service annually using the performance standards outlined in Appendix G [*insert link*] to ensure that their transit services are being provided to an efficient and cost-effective standard consistent with rest of the region.

Additionally, the Council will prepare an annual Regional Route Performance Analysis that reports the performance of each route as compared to the performance standards defined in this plan. Routes that do not meet the performance standards should be reviewed for adjustment or possible elimination.

Coordination among Transit Services

Coordination among the regional transit providers is essential to ensure that the transit system functions seamlessly and offers user-friendly rider experience. Coordination efforts include identifying opportunities for timed-transfers, providing locations for transfers between dial-a-

ride services and regular routes, and connecting services offered by different providers. The Council will promote coordination of transit services through the regional transit policies and procedures, which outline procedures for fleet management, procurement, and facilities ownership and management. This includes coordination with services that connect to areas outside the seven-county region, when necessary. The Council will also encourage and facilitate communication and coordination among transit providers to ensure well-coordinated schedules.

Transit Fare Structure

Regional transit fare policy will be designed to achieve a variety of goals. Fares should be simple and easy to understand to improve customer service and fare compliance. They should reflect the costs of providing service while mitigating the negative impacts to low-income and transit-reliant riders. The most recent fare increase occurred in October 2017, the first increase since 2008.

Fare policy should take a common regional approach to provide seamless travel for riders among providers and modes. It should promote ridership growth while maintaining or increasing the revenue recovery rate. New fare technology, including new fare media and off-board fare collection, will play an important role in transit fare policy and service delivery. Improvements in fare collection technology should ensure regional compatibility while supporting the need to modernize the fare system.

Regional efforts to mitigate negative impacts of fare increases include Metro Transit's Transit Assistance Program (TAP). The TAP provides qualified, low income transit riders a discounted, $1.00 fare for a full year. Riders that qualify for TAP access discounted fares via a TAP card. Low income riders can apply to TAP individually or through one of several organizations that have partnered with Metro Transit for the program.

Competitively Procured Services

Contracting the operation of transit services can be an appropriate and cost-effective way to meet new service demand, demonstrate new routes or service types, provide efficiencies on certain routes, properly align service expertise with providers, or maintain service in response to fiscal pressures. Decisions about which routes should be contracted to a private provider will be based on service demand and funding levels.

Service contracts should be structured in a manner that promotes healthy competition. Metro Transit will continue to be the primary provider of regular-route transit services in its service area. The Council will review the amount of contracted service every two years. Twenty percent of regular-route bus service, measured in National Transit Database revenue hours, is the target for private contract operations.

Vehicle Fleet

The bus is the most basic element of the transit system. Buses should be comfortable, clean, and designed to meet customer needs. The region utilizes a variety of bus types to match the appropriate vehicle to the service it is providing. The existing bus fleet is over 1,~~700~~ 800 vehicles, including dial-a-ride buses. These vehicles need to be maintained and replaced when they are past their useful life, which varies by bus type. Fleet replacement is the top capital investment priority for maintaining the existing transit system. Vehicles are also equipped with various types of equipment that allow them to better serve customers and provide more efficient operations. Innovation in equipment and general vehicle design is ongoing, and regional transit providers will explore modern features as appropriate. The region will work to maintain a bus fleet that is integrated and not overly specialized to specific services, routes, or corridors. Bus rapid transit services may have sub-fleets, but these should also be integrated across corridors. This will allow for more flexibility in operations and reduce the total number of buses and spare buses required, which saves the region money and reduces demand on support facilities. The regional *Fleet Management Procedure* outlines standards and is available on the Council's website [*insert link*].

Transit Provider Operating Policies

The Council will coordinate regional policies and procedures that apply to all transit providers, and will provide for a high-quality, seamless, and coordinated regional transit system while respecting the local autonomy of individual providers. These policies and procedures will ensure that transit resources are distributed equitably and transparently and facilitate an efficient system. A list of the key operating policies for transit providers is included in Table 6-2. Copies of any of these materials are available are available through the Council or directly from transit providers.

Table 6-2: Transit Provider Operating Policies

Policy	Description
Regional Route Performance Analysis	All regional transit providers will submit route performance information to the Council every year for review and inclusion in the Regional Route Performance Analysis.
Transit Fare Structure	All regional transit providers will adhere to the regional fare structure and prices established by the Council unless otherwise exceptions are specifically justified and granted.
Fleet Management Procedures	The Council's fleet management procedure guides fleet decisions, including vehicle type and configuration, acquisition, use, maintenance, replacement schedule, ancillary equipment, and disposal. The policy also reflects fleet modernization, including alternative fuels such as low-sulfur diesel, bio-diesel and ethanol, and alternative vehicles such

	as hybrid electric. All regional providers will adhere to the procedures and policies for regional transit vehicles.
Facilities Ownership Procedures	The facilities ownership procedure establishes the requirements for owning and maintaining a regional transit facility. All public regional transit facilities will be available for use by any regional transit provider.
Procurement Procedures	All regional transit providers will follow procurement procedures that are consistent with state and federal laws and guidance, when appropriate.
Regional Service Improvement Plan	All regional transit providers must submit proposals for service improvement to the Council in order to be considered for regional expansion funding for transit.
Regional Operating Revenue Allocation Procedures	The region will distribute operating revenues using procedures that allocate resources to the region's priorities, including the preservation of existing transit services and documented expansion priorities.
Title VI Policy	Title VI of the Civil Rights Act of 1964 requires considerations of discrimination through public investments for transit providers.

Alternatives to the Regular-Route Transit Network

While the regular-route transit system is planned to meet the needs of the majority of transit users, some customers can be more effectively served through demand-responsive alternatives. This is typically the case for those living in areas that cannot be cost-effectively served with the regular-route transit network and for people whose disabilities prevent them from being able to use the regular-route transit system. Because these services complement the regular-route transit system, they continually adapt to the service levels provided on the rest of the system.

Metro Mobility

Metro Mobility will meet the requirements of the Americans with Disabilities Act (ADA) by providing transit service to people with disabilities certified as not able to use the regular-route transit system. Under the ADA, the region is required to provide complementary paratransit service within 3/4 of a mile of all local regular-route transit service during the same times that the service operates. Minnesota state law also requires the service to be provided in areas beyond the requirements of the ADA.

Metro Mobility continues to experience intense pressure for growth as demand for ADA service increases with the aging population of the seven-county metro area and other demographic changes. ~~Recent history has indicated growth of up to 10% annually for the program~~In recent years, Metro Mobility has seen an average annual growth in ridership of 7 percent. Each new

ride requires a subsidy (at nearly $~~22~~ 24 per passenger), unlike regular-route bus service, which becomes more cost effective with additional demand. Because Metro Mobility is an essential service for the people it serves and is required under federal and state law to complement the regular-route system, the substantial growth of this program is considered as an investment in the operation and maintenance of the existing transit system, rather than transit system expansion.

Transit Link and Other Dial-a-Ride Programs

Dial-a-ride service provides a public transit option for travel that is not served by the regular-route transit network. The Metropolitan Council contracts with local governments and private companies to provide county-based general public dial-a-ride service, known as Transit Link. Although Transit Link is available to the general public, typical users are the elderly, people who do not own a car, people too young to drive, and persons with disabilities traveling outside the Metro Mobility service area. Some suburban transit providers also provide citywide dial-a-ride services with non-regional funds in place of regular-route service that would not be effective. Growth or reduction in these services will be addressed as a consideration of the overall transit system and as demand warrants. The expansion of the regular-route bus system may result in reduced demand for Transit Link, as more people will have access to regular-route service. However, the expansion of Suburban Edge and Emerging Suburban Edge communities at low densities may increase the demand for this type of service.

In Wright and Sherburne counties, dial-a-ride and deviated routes are the primary transit services beyond access to the Northstar Commuter rail line. Services are available to the public on weekdays. The services are funded with local resources and state and federal transit resources from MnDOT.

Metro Vanpool

Commuter vanpools are made up of five or more people, including a volunteer driver, commuting to and from work at destinations throughout the region on a regular basis. The Metro Vanpool program provides financial assistance for vans serving locations or times not well served by the regular-route transit network.

Emerging Shared Mobility Technology

Recent advances in shared mobility technology provide new alternatives and complements to the regular route transit network. Shared mobility services such as ridesharing services and microtransit have been defined by their ability to leverage smart phone technology (though they are not needed to access service), providing on-demand service, and being dynamically routed to efficiently serve demand in real time. On-demand shared mobility services have the potential to more effectively serve low-density, auto-oriented areas that have proven difficult to serve with fixed-route service. SouthWest Prime, a service operated by SouthWest Transit, provides on-demand, door-to-door, transit service that can be accessed through a smart phone,

Internet browser, or phone call. A significant difference from traditional dial-a-ride programs is that rides do not have to be scheduled in advance. On-demand shared mobility services could complement existing transit in the region by serving as a first-and-last mile connection from transit hubs to low-density or isolated destinations or replacing low performing fixed-route services and flex-route services.

Regular-Route Service Expansion Opportunities

The regular-route bus system includes bus service that operates on a fixed route, stopping at designated bus stops and following a consistent schedule. There are a number of different service types within the regular-route bus system designed to serve the different Transit Markets Areas. The different service types reflect the general trade-off between frequency of stops and speed of service, along with matching level of service to anticipated demand. Express service has fewer stops and faster speeds while local service stops more frequently but travels slower. Together, the collection of regular-route services make up a network that allows people to transfer between services and access many destinations beyond a single line. More information about specific route types can be found in Appendix G [*insert link*].

The regular-route bus system will need to expand to meet growing demand and improve access to destinations, especially for those who rely on transit. Since expansion of the regular-route bus system will typically respond to development patterns and is more flexible than large investments in facilities or transitways, the needs of the system can change more frequently, especially in emerging markets. However, the expansion of the bus system will also provide valuable connections to the transitway system across all route types and extend its reach to broader areas. This will not only support bus system expansion to new customers but also ensure the success of transitway investments. The following are general descriptions of the types of improvement opportunities for service expansion.

Local Routes

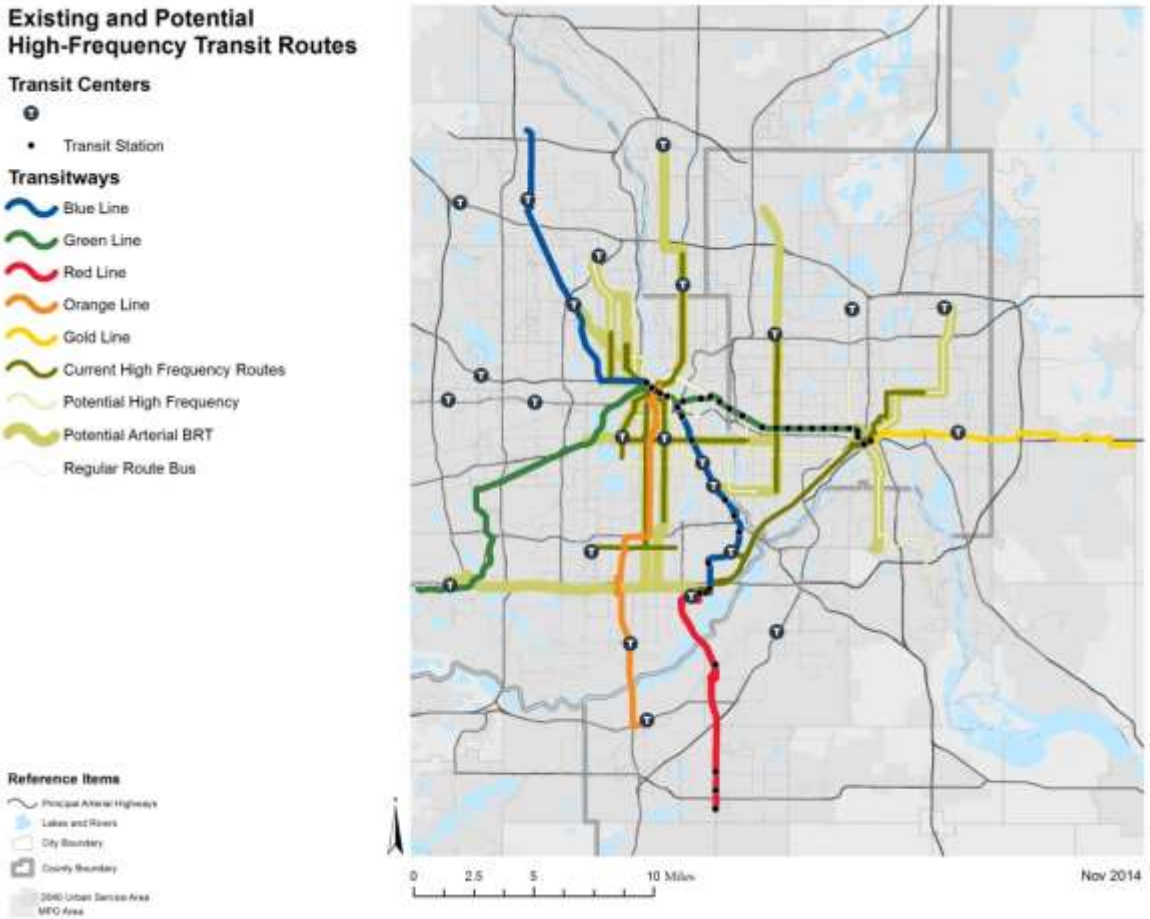
Local routes play a number of different roles and make up the basic structure of the regular-route bus system. These routes operate primarily on city streets in both the urban core and suburban areas and stop frequently, typically every one to two blocks. Local routes provide people with the highest level of access but often come with the trade-off of potentially slower, less reliable trips.

Core Local Routes – These routes generally serve urban areas along dense corridors. They comprise the basic framework of the all-day bus network, providing people with essential connections to major activity centers and transitways. Expansion of core local routes will concentrate on providing more frequent and a longer span of service on existing routes to meet growing customer demand along these corridors.

High-Frequency Transit Routes – These are generally the highest-demand routes in the system. These routes serve a significant portion of the total ridership across the transit network (5840%

of the region's average weekday riders in 2016~~3~~, including METRO Blue Line and Green Line). High-frequency routes receive the highest level of all-day service – at least 15-minute frequency from 6 am – 7 pm on weekdays and 9 am – 6~~7~~ pm on Saturdays. These routes often have highly visible ~~passenger~~ customer facilities at major stops. Existing and proposed high-frequency transit service is shown in Figure ~~6-2~~6-4, including planned METRO lines and arterial bus rapid transit lines~~, which would all meet the standards for high-frequency~~. The Land Use and Local Planning section of this plan specifies the intensity and level of activity needed to support this level of investment. Local governments are encouraged to identify potential high-frequency corridors in cooperation with regional transit providers for consideration. A local example is the Primary Transit Network identified in the City of Minneapolis' comprehensive plan.

Figure ~~6-2~~6-4: Existing and Potential High-Frequency Transit Routes and METRO Lines (NOT YET UPDATED)



Supporting Local Routes – These routes serve urban areas on crosstown corridors that typically do not connect to a major regional center, such as one of the downtowns. They are designed to complete the grid of urban bus routes and facilitate connections to core local routes and

transitways. Expansion of supporting local routes will focus on adding new routes to fill in the grid and provide better service coverage to moderately dense areas of the region. Frequency and span on existing routes will also be improved to better serve customer needs. With more intense development along these corridors, some supporting local routes may be reclassified as core local routes to reflect a more transit-supportive development pattern.

Suburban Local Routes – These routes provide access to the transit network across large portions of the lower-density portions of the transit service area, mostly in Transit Market Areas II and III. These routes tend to operate with less frequent trips and fewer hours of service. Suburban local bus service will be expanded in areas where there are coverage gaps or existing frequency or span of service do not meet expected demand. Improvements will focus on expanding suburb-to-suburb service and connections to major transfer points. Improvements will reduce the need for customers to transfer downtown to get to their destination, and improve access to jobs and other destinations outside of the urban core.

Commuter and Express

Commuter and express routes are designed primarily to bring people from urban and suburban residential areas to jobs in the region's major employment areas. These routes generally operate to serve the most common work start and end times. Future demand for commuter and express service, and associated demand for park-and-ride facilities, is determined based on analysis of population and employment trends along with a projection of future mode share for transit for commuter trips. (UPDATE PENDING PARK-AND-RIDE STUDY)

As commuter and express routes generally travel longer distances over the region's highway network, they will be expanded in coordination with transit advantages to provide a congestion-free alternative in congested highway corridors. Existing routes may be improved to add reverse-commute service to connect urban residents with suburban jobs and to provide mid-day service to provide commuters the flexibility to return home if needed. An important part of express bus service is the presence of a transit advantage to bypass highway congestion. For additional details, go to the Transit Advantages discussion [*insert link*]. Express bus services can also be coordinated with highway bus rapid transit transitway [*insert link to Transitway System Investments*] services and facilities. A map of 2040 express bus service corridors and the ~~2030~~ park-and-ride system are shown in Figure 6-3 under Park-and-Ride Facilities.

Service Expansion Priorities and the Regional Service Improvement Plan

To improve short- and medium-range planning efforts and prioritize transit service growth, regional transit providers should evaluate their ~~prepare a~~ service improvement plan every two years and prepare or update them regularly, as needed. The plan should identify priorities for service expansion in their service territory for at least the next two to four years. Providers will be asked to submit their projects to the Council for consideration in the Regional Service Improvement Plan, which will evaluate them for prioritization. Each submittal should include a

project description, resources needed for implementation, projected year of implementation, project readiness including capital facility coordination, and data for a technical evaluation.

The Regional Service Improvement Plan will evaluate proposed service improvements based on a number of factors. Specific technical measures will be determined based on data availability and methodologies developed in coordination with all regional transit providers. Table 6-3 includes factors that will be the basis of the Regional Service Improvement Plan technical evaluation, and descriptions of the considerations for measuring these factors.

Table 6-3: Regional Service Improvement Plan Technical Investment Factors

Technical Factors	Description and Example Measures
Cost-Effectiveness	Cost-effectiveness for transit service is typically measured relative to ridership. This region has standards for "subsidy per passenger," but other measures could also be considered.
Access to Destinations and People Served	Transit access provides opportunities for people to ride and for transit to be productive. This region has standards for "passengers per in-service hour." Additional measures could consider access to job concentrations as methodologies become more understood.
Equity	The transit system plays an important role in providing access and opportunity to a number of disadvantaged groups, including people with disabilities, people of color, and low-income populations. This includes a large portion of the region's transit-dependent population.
Peak-Period Transportation Benefits	The transit system provides additional capacity to the transportation system when it is most needed, during peak travel times. This benefits the region by shifting trips and miles traveled from driving alone to riding transit; this can reduce traffic congestion. Both of these can also positively impact air quality and contributions to climate change.

The Regional Service Improvement Plan will provide the technical evaluation of submittals for service expansion and may consider other factors through discussions with transit providers. Additional factors will need to be considered by policymakers when prioritizing service expansion, including regional balance and community support. The Regional Service Improvement Plan will be updated ~~every two years~~ as new data becomes available or as needs have substantially shifted, to adapt to the changing demands for bus service. For example, the Plan may be updated when new regional transitway investments are identified in the TPP and feeder routes need to be evaluated, or prior to the next major update of the TPP.

Transit Facilities Expansion and Modernization Opportunities

Transit facilities compose the built environment of the transit system. ~~Passenger~~ Customer facilities are the places where transit customers access transit vehicles, ranginge from bus stops to large and complex multimodal transit ~~centers~~hubs. Support facilities include the necessary "behind the scenes" infrastructure that supports transit providers and their operations, such as bus garages, communications control centers, and bus layover facilities. Transit advantages are roadway improvements that improve person throughput by reducing the factors that hinder efficient transit operation, such as bus shoulders, transit signal priority, or curb bump-outs.~~:~~

- ~~Bus garages and bus maintenance facilities~~
- ~~Rail operations and maintenance facilities~~
- ~~Facilities to support the cleaning and maintenance of the transit network~~
- ~~Bus layover facilities~~
- ~~Transit police stations~~
- ~~Communications control centers~~
- ~~Employee training facilities~~
- ~~Administration buildings needed to keep the system operating smoothly~~

The network of transit facilities must be strategically improved and expanded to serve the region's growing transit system. Improvements to transit facilities will improve the customer experience and maximize the efficiency of transit investments.

~~Passenger~~ Customer Facility Expansion and Modernization

~~Passenger~~ Customer facilities – ~~transit~~ bus stops, transit centers, transit stations, multimodal hubs, and park-and-ride facilities – are essential to provide convenient and attractive access to transit service. Such facilities support the regular-route bus and rail system and provide transfer points for the dial-a-ride system. ~~Passenger~~ Customer facilities are most successful when they are well-integrated with the surrounding ~~landscape~~context. Every customer facility should provide ADA accessibility, safety, comfort, and information for customers to feel secure in using the transit system. ~~Ideally, the passenger facility and surrounding context should provide a high-quality, safe, and attractive pedestrian environment, since all transit trips begin and end with pedestrian or bicycle travel. Passenger~~ Customer facilities also serve as an important point of transfer between transit services, including bus-to-rail transfers. Detailed guidelines for ~~passenger~~ customer facility amenities can be found in Appendix G: Regional Transit Design Guidelines and Performance Standards.

Bus Stops

Bus stops are established locations for customers to get on and off the bus and are the ~~basic~~ most frequently used transit ~~passenger~~ customer facility. They are essential for providing access to transit for the vast majority of customers~~ with access to transit service throughout the transit system~~. There is a greater density of bus stops in Market Areas I and II, where development density and urban design are best suited for walk-up access to transit. Transit providers work

with local communities to provide pedestrian connections and signage at each stop. Features that modernize the bus stop - such as concrete improvements for accessibility, enhanced transit information, shelters, or electrical connections to support heat and light in shelters - improve the customer experience. ~~While not all bus stops can have the same level of amenities throughout the system, some stops warrant an additional level of investment. Many areas of the region can benefit from improved amenities at bus stops, especially areas with high usage. An important part of improving the transit system will be looking at opportunities to improve the customer experience at existing bus stops. Every bus stop should provide a minimum level of safety, comfort, and information for customers to feel secure in using the transit system.~~

~~Basic access to transit is essential. All bus stops should be ADA-accessible. With 13,000+ stops in the network, the Council will work toward the improvement of older stops that do not meet current best practice for accessibility. Local governments and transit providers should coordinate their efforts to ensure that all regular-route transit stops are accessible year-round. This coordination is particularly important in the winter months when snow and ice create an additional barrier for all customers.~~

Transit Centers

Transit centers are locations where two or more transit routes converge, providing ~~provide~~ comfortable and convenient locations for ~~passengers~~ customers to connect to other routes and services in the system. They typically have multiple bus stops and bus service is timed for easy transfers. Buses also frequently layover at transit centers.

Transit centers are typically located at major activity centers or transitway stations, and may be located at a park-and-ride. Transit centers in Market Areas I and II typically serve transit customers who walk up to begin the transit trip or transfer from another route. In Market Areas II, III and IV transit centers anchor local transit routes by creating places outside of the downtowns where routes come together to offer customers more route choices. ~~The region has a network of transit centers that will be maintained to anchor local transit routes and facilitate connections. Urban transit centers typically serve many local routes, while suburban t~~Transit centers in Market Areas III and IV typically have associated park-and-ride facilities that serve express routes and connecting local routes. Transit centers provide customers with shelter, transit information, and other features to enhance the transit customer experience. Transit centers may need to be modernized to meet customers' needs for accessibility, safety, and comfort, and new transit centers may need to be added or improved as transit services expand throughout the region.

Transit Stations

Transit stations are ~~passenger~~ customer facilities associated with transitways. They provide the public access to light rail, commuter rail and bus rapid transit services. New transit stations are typically developed as transitways are constructed, but can also be added incrementally before or after a full transitway is in operation. As the transitway system matures, transit agencies

modernize transit stations through refurbishments and upgrades for service reliability, safety, and customer comfort.~~Transit stations will generally have a similar level of investment as transit centers.~~ More information regarding transit station investment can be found in the "Transitway System Investment Plan."

Regional Multimodal Hubs

In addition to transit stations, there are two regional multimodal hubs in the system that connect light rail and commuter rail transit to a number of other existing and planned services. The Union Depot in downtown Saint Paul is served by the Green Line, local and express bus service, Amtrak passenger rail service, and a number of intercity bus services. Target Field Station in downtown Minneapolis is served by the Green Line and Blue Line light rail, Northstar commuter rail, and other bus services that connect in downtown Minneapolis. More information regarding planned transitway connections to these hubs can be found in "Transitway System Investment Plan."

Investing in customer facilities means time passes more easily for transit customers

Customer facilities at transit stops have a proven positive influence on the customer experience, according to research from the University of Minnesota.

The wisdom in the old saying "time flies when you're having fun" means that transit customers perceive wait times different based on the features provided. At transit stops with no features - such as benches, shelters, and real-time transit information – the research found that transit customers perceived waiting times to be at least twice the actual wait. Facilities with features significantly reduce perceived waiting times. A 5-minute wait feels like only 3.2 minutes for transit customers with access to shelters.

The full findings of the research from the University of Minnesota are reported in "Perceptions of Waiting Time at Transit Stops and Stations".

~~Passenger Amenities~~Customer Facility Features

Regional transit providers offer a range of ~~amenities~~ features at ~~bus stops and other passenger~~customer facilities to improve the customer experience. ~~Passenger~~ Customer facility features ~~amenities~~ may include pedestrian connections and accessibility, customer information in static and real-time signage, shelters, shelter lighting or heaters, trash and recycling receptacles, seating, security cameras~~, good pedestrian access~~, bicycle parking and storage, fare payment and vending machines, landscaping, and public art.~~and customer information in both static and real-time formats.~~

~~Passenger~~ Customer facility features ~~amenities~~ create a more comfortable, accessible and attractive waiting environment for transit customers, as well as enhanced customer safety. ~~Customer information increases customer satisfaction and reassures them that they can depend on transit. Passenger amenities~~Customer facilities can also benefit the surrounding neighborhood by making transit a more attractive travel option for nearby people and businesses, and by contributing to the overall character of the streetscape. ~~Amenities are placed at passenger facilities depending upon multiple factors including number of people served, number of limited mobility boardings, and number of transit transfers. Comfortable~~

~~waiting areas and transfer facilities are particularly important at major transfer locations such as transit stations or transit centers. The placement of amenities is evaluated to ensure that the various types of amenities are located equitably across the region.~~

More specific policy and guidance for ~~passenger amenities and bus stops~~facility features rests with the region's transit providers. For example, Metro Transit has a policy on the prioritization and placement of shelters. Some cities have regulations on the placement of benches. ~~The Council's work program also includes a Metro Transit-led effort to develop Bus Stop Facility Guidelines to detail the opportunities for improving bus stops throughout their service area [*insert link to "Work Program"*].~~

Park-and-Ride Facilities

Park-and-ride facilities are surface lots and structured ramps predominantly located outside of the Urban Center ~~and~~ that are served by express bus, bus rapid transit, or rail. Park-and-rides are important tools for creating ~~the~~ locations with the customer density required to provide cost-effective transit service from suburban and rural areas.

The *2030 Park-and-Ride Plan* (2010) documented~~s~~ the ~~needs~~anticipated demand by regional travel corridors and provided recommendations for future park-and-ride facilities. The plan included~~s a~~ methodologies~~y~~ for determining facility need and integration with the transit system, analyzing market areas, and considering site selection and facility design. The plan also includes a park-and-ride demand forecast model for estimating future need based on a number of factors that contribute to park-and-ride use. This model has been updated to reflect *Thrive MSP 2040* forecasts but also takes into account these factors affecting park-and-ride demand:

- INSERT LIST OF FACTORS PENDING PARK-AND-RIDE STUDY

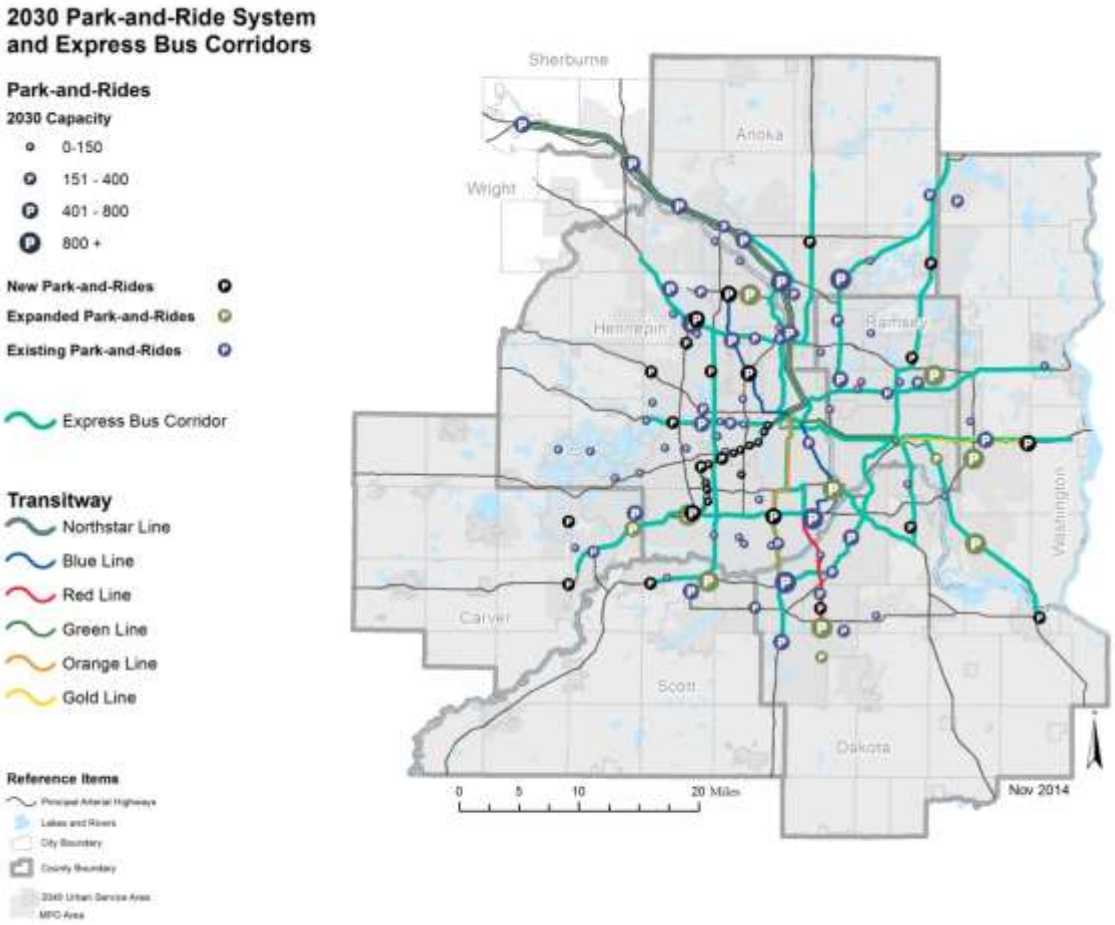
The model is available for the seven-county region and may be used by all regional transit providers to estimate future park-and-ride needs and planning efforts, including project submittals through the regional solicitation.

Park-and-rides are optimally located in a congested travel corridor, upstream of major traffic congestion, with service to major regional destinations. Facility design takes into account the cost of construction and land acquisition; site access for vehicles, pedestrians, and cyclists; site visibility; future expansion potential; community and land use compatibility; environmental constraints; and opportunities for joint-use ventures and transit-oriented development. The region is shifting away from providing small facilities to concentrate on fewer, larger facilities with ~~higher~~ more frequent ~~levels of~~ service. Larger regional facilities serving multiple cities increase the attractiveness of the service to all residents of the region. Transit providers will continue to coordinate with local communities in planning and designing park-and-rides to integrate park-and-rides into local development patterns. Transit-oriented development and joint-use ventures associated with park-and-ride locations may become more prevalent over time as the region's transitway system and land use development matures.

Expansion of the park-and-ride system has been a focus ~~over the last decade~~since the late-1990s, with usage growing annually by ~~six to~~as much as ~~nine~~ 20 percent. ~~The system today includes 96 park-and-ride facilities consisting of over 32,000 vehicle parking spaces. To meet long-term regional demand, an expanded number of park-and-rides with a total capacity of nearly 35,000 vehicle parking spaces are currently planned through year 2030 to serve transit customers using express bus service and transitways. Existing, planned expansions, and new park-and-rides through 2030 are shown in Figure 6-3.~~The previously developed 2030 park-and-ride need has been largely built, with nearly 35,000 spaces in the system. While opportunities still exist to expand park-and-ride capacity in certain locations, the system is not expected to expand as dramatically and quickly as past decades. The system currently operates at around 50-60% of capacity and can accommodate much of the demand expected through 2040. The existing park-and-ride system and express bus corridors are shown in Figure 6-5.

~~Much of the existing capacity was built to serve future demand as the region grows. The park-and-ride plan will be updated to reflect any changes to forecasted demand that may have resulted from *Thrive MSP 2040* forecast updates and to reflect evolving plans being developed for transitways. An updated Park-and-Ride Plan will replace the details included in this section and Figure 6-3.~~

Figure ~~6-3~~6-5: ~~2030~~ Park-and-Ride System and Express Bus Corridors (NOT YET UPDATED)



Support Facility Expansion and Modernization

The regional transit system must have sufficient facilities to support efficient and cost-effective transit services. For buses, these support facilities include garages and bus maintenance facilities, bus layover facilities at route terminal points, and dispatching and control centers. For rail, these support facilities include operations and maintenance facilities, train storage facilities, layover facilities, and logistics facilities such as control centers. In addition, system-wide support facilities are needed for the maintenance of ~~passenger~~ customer facilities, transit police force, employee training, customer service centers, and administration. As the transit system expands, and the types of services available and the number of riders increases, support facility capacity must increase as well. ~~Metro Transit is working to develop a system-wide plan to anticipate the support facility needs of the growing transit system.~~

Bus Support Facilities

As the bus fleet expands to meet anticipated ridership growth, bus garages, bus layovers and vehicle storage will need to be increased. This will be accomplished by expanding existing

facilities and constructing new facilities. Maximum use of existing garage facilities should be made but over-crowded bus garages lose operating efficiency, making it more difficult to provide the quality of transit service expected in the region. ~~b~~Bus garage expansion should precede fleet expansion. Currently, Metro Transit uses five bus garages to provide for daily maintenance and storage of vehicles, with an additional facility serving needs for more intensive vehicle repair. Other regional transit providers have support facilities as well, either through direct ownership or through agreements with private operators. These facilities support bus rapid transit vehicles as well as regular-route vehicles. ~~These facilities also age and require maintenance, including possible long-term replacement.~~ Existing garage facilities in the region are aging and the need to maintain or replace them will emerge as an issue that will need to be addressed in the coming decades. Their use and effective life can be maximized with maintenance and modernization efforts, including investments that result in operating efficiencies.

Bus layover facilities provide a physical space for transit vehicles to stage, an opportunity for route recovery time, and driver break rooms and restrooms. Bus layover facilities are typically located at the terminus of transit routes and may be co-located with customer facilities. These facilities enable the system to operate cost-effectively and on time. Additional layover facilities will be needed in both downtowns, the University of Minnesota, and some suburban locations.

Rail Support Facilities

Rail support facilities presently include two light rail transit operations and maintenance facilities, a rail operations support facility, and the Northstar commuter rail maintenance facility. Additional transitway rail service will generate need for additional operations and maintenance facilities. Options to improve or expand existing facilities as well as construct new facilities will be evaluated based upon the planned transitway network, corridor-specific planning efforts, and system-wide facilities planning.

System-wide Support Facilities

Transit control centers are an essential communications, safety, security, and service link for regional transit service. ~~Metro Transit operates two transit control centers; one supports bus operations the other supports rail operations.~~ Control centers monitor schedule adherence and coordinate the daily activities of ~~Metro Transit~~ buses, trains, Metro Mobility and dial-a-ride services, service vehicles, training vehicles, and other mobile units. They also dispatch vehicles to respond to on-street incidents and to support transit police. As the bus and rail system expand, the transit control centers will also need to expand.

Facilities that headquarter maintenance crews are needed to keep ~~passenger~~ customer ~~waiting environments~~facilities clean and in good condition. As ridership grows, ~~passenger~~ customer facility maintenance capacity must expand to meet the maintenance needs of more heavily used existing facilities and of new facilities.

Transit police support facilities are composed of a central headquarters and small local substations. Administrative offices are also part of the support facilities that contribute to a well-functioning transit system. These system-wide support facilities must have the capacity to support the transit system as it grows.

Other Transit System Improvements

Expansion of Transit Advantages

Transit advantages are roadway improvements that improve person throughput by reducing the factors that hinder efficient and attractive transit service. These advantages include but are not limited to bus shoulders, high-occupancy vehicle lanes and MnPASS, ramp-meter bypasses, traffic signal queue jumps, transit signal priority, and curb extensions.

Growing roadway congestion will make it increasingly more difficult for buses to move around the region. Right-of-way that provides a fast travel alternative for rail and bus transit should be pursued when transit volumes justify.~~, but opportunities for implementation are limited. However, a number of roadway improvements can be made to provide transit advantages that maintain travel times and reliability. These improvements~~Transit advantages benefit transit operations and can work to relieve congestion for both transit and solo drivers alike. Current efforts to implement bus rapid transit in the region, along freeways as well as higher density urban arterial roads, provide faster, more reliable travel times, reduced waiting time for service, and attractive transit amenities and options for commuters who currently drive.

On state highways, transit advantages can include bus-only shoulders, dedicated bus lanes, MnPASS lanes, ramp meter bypasses, and transit stations adjacent to or ~~between~~ on roadways (see Figure ~~6-4~~6-6). Opportunities for further implementation of bus-only shoulders are limited as the system is nearly built out. MnPASS lanes are highway lanes that are shared by transit, high-occupant vehicles, and single-occupant vehicles (SOVs) that opt to pay a toll to use the lane. SOV usage is controlled by varying the toll price based on real-time traffic conditions. Prices are set to maintain a consistent flow of traffic. MnPASS lanes, like those in the I-394 and I-35W corridors, provide a significant transit advantage by offering a congestion-free alternative for transit riders. This strategy can dramatically increase the overall number of people that can travel through a corridor in a given amount of time. The development of the region's MnPASS system is discussed in "Highway Investment Direction and Plan" [*insert link*].

On city streets and signalized highways, improvements include dedicated bus lanes, dynamic parking lanes, traffic signals that are coordinated with transit service and/or provide transit priority, curb extensions that allow buses to avoid pulling into and out of travel lanes, and queue jump lanes, among others. These improvements all work to provide faster trips for customers, improve the attractiveness of transit, and significantly increase the people capacity of city streets.

While some express and local transit corridors are currently well supported by transit advantages, there are a number of locations that need improvements to maintain or improve transit travel times and reliability. In addition, opportunities to coordinate with planned road improvements, or to adequately serve planned community development projects through enhanced transit service, provide high returns on capital transit infrastructure investment. Corridors with high levels of congestion and high existing and potential transit ridership should be prioritized for new transit advantages. The timing of these projects will be dependent on opportunities associated with roadway projects, where coordination is essential to project delivery, but may also be coordinated with transitway projects.

Figure ~~6-4~~6-6: 2040 ~~Transit Advantages~~Bus Shoulders and MnPASS (NOT YET UPDATED)

Marketing Transit

Marketing transit can significantly increase awareness of service and lead to higher ridership. The Council and regional transit providers will increase the value, benefits, and usage of transit services through a variety of advertising and promotional programs. Additionally, the Council will pursue opportunities for partnerships with other transit-supportive services including

bicycle- and car-sharing services. Annual transit marketing plans will be developed by the Council based on input from stakeholders.

Transit providers will also form partnerships on travel demand management strategies including working with Transportation Management Organizations to broaden the awareness of transit to more businesses and employees. For additional detail, go to "Travel Demand Management" discussion [*insert link*]. (TDM SECTION CHANGES PENDING OTHER CHAPTER UPDATES)

Safety and Security

Working with transit providers and communities, the Council will continue to strive to provide a safe and secure environment for ~~passengers~~ customers and employees on vehicles and at transit facilities. The Metropolitan Transit Police department is an important component of this effort. Through a variety of means, the Transit Police enhance safety, increase ridership, and preserve the quality of regional transit infrastructure. These include regular patrols and rides on transit vehicles, partnerships with other law enforcement agencies and community organizations, and innovative programs such as community service officers.

Transit infrastructure is another important component of safety and security. These investments include cameras on transit vehicles and at stations, and improved lighting at transit stops and stations, among others. An important component of safety and security is good design of facilities, including the consideration of Crime Prevention through Environmental Design principles. Additionally, the Council will continue to invest in employee awareness and public education campaigns to improve transit safety.

In addition to promoting safety and security during regular transit operations, the Council and Metro Transit also have an important role in regional disaster preparedness. The Council maintains an emergency management plan to coordinate between Metro Transit and the various regional and state public safety agencies in the event of an emergency situation.

Current Revenue Scenario Bus and Support System Investments

The bus system is the largest and most important part of the transit system because it serves all parts of the region. Bus and support system investments are limited by reasonably expected resources, and opportunities to invest are dependent on these constraints. The following summarizes the components of the system that are assumed to be funded in the plan's Current Revenue Scenario. The first priority for investing in the region's bus and support system is continuing to operate and maintain the existing system.

Operate and Maintain the Existing Bus and Support System
• Operating and managing the bus network and routes consistent with Regional Transit Design Guidelines and Performance Standards

- Operating Metro Mobility, including anticipated growth needed to meet demand
- Operating the Transit Link dial-a-ride service and providing Metro Vanpool subsidies
- Operating and maintaining the support systems for the transit system, such as shelter and public facility maintenance and customer information
- Maintaining and replacing vehicles
- Maintaining or replacing existing capital facilities and other equipment to support operations and a positive customer experience, including a modest expansion of bus stop amenities

Beyond ongoing operations and maintenance, opportunities for expansion and modernization of the transit system are limited and available primarily through competitive grant programs. This includes the regional solicitation, which distributes federal ~~Congestion Mitigation and Air Quality (CMAQ) and Surface Transportation Program (STP)~~flexible funds such as surface transportation block grants within the metropolitan area, or other federal, state, and local programs. The opportunities include:

Expand and Modernize the Bus and Support System

- Expansion of transit capital vehicles or facilities to serve new markets or provide an improved experience for existing customers, such as enhancements to customer information signage, retrofits to existing transit stations, and placement of additional ~~passenger~~ customer waiting shelters and bike amenities
- Start-up operating funding for limited expansion of transit service for demonstration purposes, including exploring innovative service models and new technologies
- Modernization of transit facilities or systems to improve the customer experience, provide more efficient transit operations, or improve the operating capabilities of regional transit providers

The opportunities for bus operating and capital expansion will be prioritized based on an evaluation through the Regional Service Improvement Plan, the Regional Solicitation, or other more specific plans that focus on short-term regional transit needs.

Increased Revenue Scenario Bus and Support System Investments

The region will need additional resources to realize the vision for the transit system in this plan that goes beyond the limited opportunities in the Current Revenue Scenario.

Additional resources would allow the region to expand existing services and add new service to parts of the region. Expansion and modernization of transit facilities will enhance the transit customer's experience on multiple levels. Access to a bus stop or ~~passenger~~ customer facility

might be improved through a better pedestrian connection, provision of secure bike storage, or a more conveniently located park-and-ride. A transit user's wait for the bus would be improved with shelters at more bus stops and more amenities at ~~passenger~~ customer facilities such as heaters, lights, and transit information. These ~~passenger~~ customer facilities would be in clean, good condition because investments in maintenance support facilities would be commensurate with ~~passenger~~ customer facility expansions and improvements. Once on the bus, a transit customer's ride might be more reliable or comfortable because the vehicle has been cleaned and maintained at an updated bus garage that operates at its optimal capacity. Better access to customer support, from police to transit information, would be made possible under this scenario because of investments made in support facilities.

Expand and Modernize the Bus and Support System – Increased Revenue Scenario

• An average of at least 1% annual growth in the regular-route bus service over 25 years (at least 25% growth in total), with near-term improvements guided by the Regional Service Improvement Plan, that includes:
  ○ Improved local service frequencies and hours of service to attract new riders to the system and improve access and reliability for existing riders, including an expansion of high-frequency arterial routes
  ○ Expanded coverage of local service with an emphasis on connections between high-density residential neighborhoods, regional job concentrations, and transitways
  ○ Expanded commuter and express service to new markets and improved service in markets that are overcapacity
• Expanded fleet needed to expand service
• Enhanced maintenance including snow removal at transit ~~passenger~~ customer facilities and improvements including better lighting, more customer information, rehabbed aging facilities (e.g. ~~such as~~ Sun Ray Transit Center), more and better shelters, improved multimodal connections, enhanced pedestrian connections to bus stops, and energy-efficient improvements
• Expanded or modernized transit support facilities including additional garages for increased system capacity, additional layover capacity in major regional centers, light rail support facility upgrades, bus rapid transit garage capacity, and other improvements

Like the Current Revenue Scenario, the opportunities for bus operating and capital expansion will be prioritized based on an evaluation through the Regional Service Improvement Plan or other more specific plans that focus on short-term regional transit needs.

Transitway System Investment Plan

A network of transitways is and will be a significant element of the regional transit system, both in terms of use and investment. Transitway investments are permanent and long-range. They require diligent planning to best serve the existing developed region and help guide future development in the region. This permanence also plays a strong role in the ability of transitways to focus future growth and act as a catalyst for development in the region.

The region will develop a network of transitways that considers a variety of modes including: bus rapid transit in multiple forms, light rail, and commuter rail. The region is currently examining modern streetcar as a regional transitway mode (see discussion near the end of this chapter). Each mode has unique characteristics that are cost-effectively matched to an appropriate purpose and need.

Transitway Modes

The following are general descriptions of transitway modes in the region.

Bus Rapid Transit

Bus rapid transit (BRT) is a transitway mode that uses buses while incorporating many of the premium characteristics of rail. BRT is more flexible than rail in fitting the unique opportunities and limitations of a corridor. BRT has a number of attributes that, as a whole, distinguish it from other bus services in the region.

- Service operations: BRT typically operates at service frequencies of 15 minutes or better for most of the day in both directions, and can be complemented with other services such as local or express routes.
- Running way: BRT can operate in a dedicated busway, bus lanes, MnPASS lanes, dynamic shoulder lanes, dynamic parking lanes, bus-only shoulders, or mixed traffic, depending on the characteristics of the corridor. BRT typically includes various transit advantages such as queue jump lanes and curb extensions to provide faster travel.
- Technology: BRT can include transit signal priority to allow buses to move more quickly and reliably through traffic signals. Customer information displays and other technology are often provided to improve the customer experience.
- Identity/brand: BRT is often uniquely branded to help distinguish it from other bus services.
- Stations: BRT stations are uniquely branded with more amenities and generally spaced further apart than a standard bus stop to provide faster travel.
- Vehicles: BRT vehicles can range from typical 40-foot transit buses to specialized vehicles with a unique look, low floors and additional doors for quicker boarding, and other customer amenities.

- Fare collection: BRT typically utilizes off-board or other unique fare collection methods that allow for quicker ~~passenger~~ customer boarding.

BRT facilities are often scalable to demand and can be added or expanded, as needed, over time. For example, an express corridor could add a MnPASS lane or other transit advantage, and then add stations and park-and-rides as demand increases. Because of this, BRT is better suited to adapt to unique corridor conditions than rail. The region is planning for three types of BRT that are matched to the conditions of the corridors: dedicated bus rapid transit, highway bus rapid transit, and arterial bus rapid transit.

Dedicated Bus Rapid Transit

Dedicated BRT is often considered the most similar to light rail in the characteristics of how it operates and level of investment. Dedicated BRT uses special roadways or lanes of roadways dedicated to the exclusive use of buses. Projects are generally similar to light rail in project length, with stations also spaced about a mile apart. Dedicated BRT has more flexibility than light rail because the dedicated guideway and stations can be shared with other services, such as express or local bus. Buses are also more flexible than light rail to operate on existing facilities through small areas where space is limited to build a dedicated guideway. Dedicated BRT has requirements for right-of-way and infrastructure similar to light rail, except for the train and associated propulsion and track systems. A local example of dedicated BRT infrastructure is the University of Minnesota busway, which connects the University's campuses with frequent bus service. The ~~Gateway corridor locally preferred alternative~~future METRO Gold Line is the first dedicated BRT transitways to be included in the plan.

Highway Bus Rapid Transit

Highway BRT provides frequent, all-day service to regional centers that are near highways and spaced further apart throughout the region, making them difficult to connect with local bus service. Highway BRT generally operates on limited access roadways where buses can use bus-only shoulders, MnPASS lanes, ramp meter bypasses, and priced dynamic shoulder lanes as transit advantages. Stations are spaced about one to two miles apart. Highway BRT service is often complemented with express bus service that uses the same facilities and is coordinated with local bus connections. Other highway BRT characteristics would be similar to dedicated BRT and light rail, such as service frequencies, fare collection, technology, and customer information. The METRO Red Line is the only existing highway BRT line operating in the system.~~, although some capital components of~~ T~~t~~he second line, the METRO Orange Line on I-35W South, ~~have been completed, such as the I-35W and 46th Street Station~~is also included in the plan.

Arterial Bus Rapid Transit

Arterial BRT is an all-day, frequent service that is faster and provides a better customer experience in corridors with strong existing local bus service. These corridors are all in highly developed areas of the region where available right-of-way limits the ability to implement ~~services like~~facilities for light rail or dedicated BRT. Arterial BRT can attract a high number of new transit riders and improve the experience for a high number of existing riders. Arterial BRT generally operates in mixed-traffic on local streets with stations spaced about ½ mile apart, depending on corridor specifics, and incorporates transit advantages such as transit signal priority or queue jump lanes. Arterial BRT can be complemented with local bus service that stops more frequently. Typical amenities include improved stations and customer information, unique vehicles and branding, and fare collection that allows for faster boarding. The first arterial BRT line in the region, the A Line, opened along Snelling Avenue in 2016. Construction is expected on a second line, the C Line, on Penn Avenue in 2018.

Since BRT is intended to be flexible, corridors may be implemented in a way that is a combination of BRT types. Dedicated BRT projects are typically more substantial investments and will likely fit into the New Starts category of federal funding. Highway BRT and arterial BRT projects will typically fit into the Small Starts category of federal funding and may be explored in a phased approach. In many cases, elements of these projects can be implemented prior to the complete bus rapid transit investment (for example, limited stop bus service or enhanced bus shelters). Dedicated BRT and highway BRT lines will be considered part of the METRO system with color designations as long as the service and facilities meet certain minimum characteristics.

Light Rail Transit

Light rail transit is an all-day, frequent service that connects dense employment and population centers with each other. It operates on tracks primarily in an exclusive running way. Vehicles are typically powered by overhead electrical wires. Stations are typically spaced about ½ to one mile apart. Typical light rail lines in this region can extend 10 to 15 miles out from the urban core and primarily serve the most densely developed areas of the region. Longer lines would generally be cost-prohibitive and better served by connecting local or express service. Light rail service operates in both directions at a high frequency. All light rail lines will be considered part of the METRO system and given color designations for customer information purposes. The initial segments of the METRO Blue Line and Green Line are operating, with extensions in development.

Modern Streetcars

Modern streetcar is an all-day, frequent service that operates in urban areas with high transit demand. ~~Modern streetcars are under consideration in a number of corridors.~~ Modern streetcars typically operate in mixed traffic, similar to a local bus route. They typically stop every few blocks and operate at shorter distances than light rail, with an emphasis on high-frequency service with high accessibility. Typical modern streetcar lines are less than four miles

long and ~~while light rail lines are typically around ten miles long. T~~they travel more slowly than light rail ~~transit because light rail operates primarily in its own dedicated right-of-way and stops approximately every mile, while streetcars usually operate in mixed traffic and stop more frequently~~. However, ~~M~~modern streetcars may attract new transit riders similar to light rail and may offer some travel time advantages over local buses, such as faster boarding, faster fare collection, and intersection signal priority – similar to the transportation benefits BRT can offer. Modern streetcar service is particularly suitable for high-density, mixed-use areas with short average passenger trip lengths, areas where improved transit will benefit a high number of existing riders, and as an attraction for new or infrequent transit users like shoppers or visitors. Modern streetcars also have demonstrated promise for supporting high-density, mixed-use, walkable development in urban cores where people can live without a car and become regular and frequent transit users. Despite their differences, there are many similarities between modern streetcar and light rail and the two modes may share characteristics of each other, depending on the purpose of the project and implementation decisions made by lead agencies.

A number of recent and ongoing studies are considering modern streetcars for further planning or implementation but no existing modern streetcars exist in the region and no specific projects are assumed in the Current Revenue Scenario of this plan. As project recommendations come forward that would introduce this mode to the region, they will be considered on an as needed basis. ~~The most advanced of these studies is the Nicollet-Central modern streetcar locally preferred alternative recommendation to the Council that was approved by the City of Minneapolis. Modern streetcar is also under consideration in studies of the Robert Street corridor, Midtown corridor, and West Broadway Corridor. The cities of Minneapolis and Saint Paul also completed city-wide feasibility studies with resulting long-term streetcar networks proposed for each city. More detail is discussed under Corridor Planning Status Updates.~~

~~The number of studies considering modern streetcar illustrates the positive support for it as a new transit mode in the region.~~ The Council is continuing to collaborate with local units of government and regional transit planning partners to determine the role of modern streetcars in the regional transit system as the first potential applications of the mode are discussed. ~~This continued effort is described in the "Work Program" [*insert link*].~~

Commuter Rail

Commuter rail is an express transit service that primarily connects downtown employment centers to distant population centers. Commuter rail typically operates on existing freight railroad tracks to reduce infrastructure costs. Commuter rail vehicles may use diesel multiple unit vehicles or conventional diesel locomotives pulling passenger coaches. In many cases, commuter rail operates on tracks that also carry intercity passenger rail traffic operated by Amtrak or other passenger rail services, potentially sharing common stations. Lines are typically 20 or more miles in length, with stations spaced much further apart than light rail or BRT, typically about five miles apart. This spacing results in faster travel times that are competitive with auto travel. Station areas are primarily oriented to park-and-ride uses or dense housing

and mixed-use development. Commuter rail services operate at 20- to 30-minute frequencies during peak periods, with limited or no midday or reverse-direction service. The Northstar Line is the only existing commuter rail line in the transitway system and is not considered part of the METRO system of all-day, frequent transitway service.

Regional Transitway Guidelines

More detailed descriptions of the characteristics of each mode are available in the *Regional Transitway Guidelines* (2012). The image in Figure**Error! Reference source not found.** 6-7 is an excerpt from the Regional Transitway Guidelines and it illustrates the basic characteristics of each mode. The only modes not included in this discussion is dedicated BRT and modern streetcars, modes that have not been implemented in this region yet. ~~An update to t~~The Regional Transitway Guidelines ~~is~~will be updated on an ongoing basis as additional information or insights are available or if the parameters for the Guidelines change. ~~identified as a work program item and will consider addressing dedicated BRT [*insert link to "Work Program"*].~~

Other Modes

Other modes may be explored through further detailed study, but their inclusion in the plan will require an amendment. ~~A discussion of modern streetcars is included at the end of this section and will be addressed through a work program item.~~

Figure ~~6-5~~6-7: Excerpt of "Minimum Elements" from the Regional Transitway Guidelines

Regional Transitway Guidelines

Table 10-1 – Minimum Elements from Transitway Guidelines[3]

	Arterial BRT	Highway BRT[4]	LRT	Commuter Rail
Service Operations	*WEEKDAY* Combined frequency for Arterial BRT and local service should be 10-min. peak period, 15-min. midday/evening, 30- to 60-min. early/late *WEEKEND* 15-min. day/evening, 30- to 60-min. early/late	*WEEKDAY* Combined frequency for station-to-station and express services should be 10-min. peak period and 15-min. midday *WEEKEND* Frequency based on demand	*WEEKDAY* 10-min. peak period, 15-min. midday/evening, 30- to 60-min. early/late *WEEKEND* 15-min. day/evening, 30- to 60-min. early/late	*WEEKDAY* 30-min. peak period Off-peak frequency as needed At least 5 trips each peak period
Stations	Transitway stations justified by proven, documented demand that: • Achieve a functional, cost-effective outcome that balances aesthetics with funding availability • Are attractive and informative environment for passengers at stations that is consistent with local community context, transitway identity, and passenger waiting times • Achieve functional integration with the surrounding land uses, which may include forming a nucleus for transit-oriented development at stations • Balance travel time, access and station demand relative to travel markets at the time of implementation • Promote a safe and secure environment by designing all elements to enhance passive security by maintaining visibility to and within the station and station area • Implement an interdisciplinary approach to station and facility design that incorporates advancements in technology			
Runningway	Full-sized mixed-traffic lanes (10-12 feet) that provide transit with travel-time advantages under congested roadway conditions	Full-sized (12 feet) managed lanes or bus-shoulder lanes that provide transit with travel-time advantages under congested roadway conditions	Adequate, exclusive trackage for safe and reliable operation	Adequate trackage (or trackage rights) for safe and reliable operation
Vehicles	Sleek, modern, premium-styled buses appropriately sized and configured to service characteristics		Compatible with existing rail and infrastructure systems	
Fare Collection	Modern and proven fare collection systems that integrate well within the regional system and fit the needs of the region and transitway			
Technology	Automatic vehicle location (AVL) on all vehicles and automatic passenger counters (APC) on all LRT, Commuter Rail, and BRT station-to-station vehicles Real-time schedule information at all high-volume stations and real-time parking availability at major park-and-ride facilities			
	Proven communications link compatible and coordinated with regional transit control center		Compatible with existing rail systems technology and control centers	
Identity and Branding	TBD	Color line names for station-to-station services Unique system name Consistent signage and branding using regional transit system color scheme Unique vehicle designs distinguished from local bus		Unique line name that does not conflict with color lines or LRT/Highway BRT system name

10-11

Transitway Development Process

Corridor Planning and Development

The development of the transitway system and individual corridors warrants substantial study prior to investment decisions. This process is essential for gathering public input and being good stewards of public money. The following is a typical process for the development of a transitway:

1. **System Planning and Feasibility** – The Metropolitan Council will lead or collaborate on region-wide studies of transitways, in coordination with MnDOT~~, the Counties Transit Improvement Board~~, local governments (counties and cities) and transit providers, to guide decision-making at the regional level. Corridor feasibility studies led by local governments or transit providers should also coordinate with regional system planning.
2. **Corridor Planning and Alternatives Analysis** – Corridors should undergo an analysis of alternative transitway modes or alignments through early planning work that narrows the list of alternatives down to a local recommendation for the "Preferred Alternative." The locally preferred alternative is the alternative ultimately included in the Transportation Policy Plan, a requirement for federal, state, or regional funding.
3. **Environmental Review** – Every project will undergo an environmental review, consistent with state and federal law, depending on the size and nature of a project. The environmental review will disclose potential environmental impacts of a project and identify ways to avoid or minimize them.
4. **Design and Engineering** – The design and engineering of a project will build upon preliminary work in previous steps through to full project design and engineering. This step includes work described as "project development" and "engineering" under the federal New Starts program, but also includes pre-project development work that may be required to transition a project after environmental and planning work.
5. **Construction** – The capital elements of a project will be built, tested and readied for operations. This phase also includes the expansion of vehicle fleets and other systems needed to operate the transitway.
6. **Operation** – A project begins operating during the testing phases but "revenue service" begins when it opens to the public to serve ~~passengers~~customers.

For rail projects, these steps generally occur as a complete project where all elements are planned, designed, built, and opened for operation on the same timeline. For BRT projects, these processes can occur in phases with different elements of the project~~;~~, a park-and-ride for instance, being planned, designed, built, and opened before other elements.

Throughout all of these steps, public and stakeholder participation will be an essential aspect of project work. The Council and its regional partners in transitway development, including local governments, will work together to ensure that each transitway project is developed to

integrate into the transportation system and the community context, and to consider the concerns of affected communities.

County governments have led the way on the early stages of many transitways, often funding and leading corridor studies. Cities and transit providers are also engaging in corridors studies. It is important that the Council, counties, cities, regional transit providers, MnDOT, and other stakeholders work together to develop these major investments in a collaborative way. Many of the details of project implementation and best practices are described in the Regional Transitway Guidelines. However, best practices will continue to evolve and project-specific issues will continue to arise in projects of this scale. Collaboration will be a key component of project development.

Transitways are major regional projects that require the coordination of many potential elements that are not directly addressed in this chapter. Table 6-4 includes references to other areas of the plan and other considerations that will be used in transitway development.

Table 6-4: Transitway Development Coordination References

Bus System Service and Facilities (within Chapter 6)	Other elements of this plan describe how bus improvements are planned and how facilities support the development of transitways, such as park-and-rides [*insert link*].
Transit Advantages and Highways (within Chapter 6)	The discussion of transit advantages [*insert link*] can often be coordinated with transitway improvements, particularly with BRT transitways.
Pedestrian and Bicycle Plans (within Chapters 3 and 7)	The plan has a substantial discussion on the regional bicycle system [*insert link*]. Elements of a good pedestrian experience are also discussed in "Land Use and Local Planning" [*insert link*].
Land Use and Local Planning (within Chapter 3)	Local governments play a significant role in planning local transportation and land use that connects to transitways. More discussion is available in "Land Use and Local Planning" [*insert link*] and through local comprehensive plans.
Regional Transitway Guidelines (available on Council website)	The Regional Transitway Guidelines have a lot of information on best practices and standards for transitway design and integration into the transportation system [*insert link*].

Setting Regional Transitway Priorities

Transitways are some of the largest single transportation investments that the region is planning through 2040. The significance of these projects and the number of corridors under study will require the region to prioritize transitway investments to ensure the efficient development of a successful, regionally balanced system. *Thrive MSP 2040* and the Transportation Policy Plan have established new accountability considerations that are intended to guide the development of the region and investments in infrastructure. *Thrive MSP 2040's* outcomes and the Transportation Policy Plan's goals and objectives are important policy statements that will establish a clearer understanding of the results that transitway investments are intended to achieve.

The ability of the region to compete for federal New Starts and Small Starts funding will also depend on advancing competitive projects. The region will need to be aggressive but strategic about which projects are submitted to compete for federal funding. The region will also need to be strategic about funding projects with higher levels of state or local funding if they may not compete well for federal funding.

Transitway projects already undergo a substantial analysis at the corridor level to determine the appropriate mode and alignment. Counties, cities, and transit providers are leading efforts to determine the right fit for each corridor. The information developed during these analyses by lead agencies to recommend a locally preferred alternative for inclusion in the plan should provide a common understanding for determining how a project advances the region toward its desired results. The region's desired results can also inform each corridor analysis to help determine the best result for the region, while allowing for flexibility to fit with local needs.

Setting regional transitway priorities ~~will be~~is a dynamic process as projects come forward for inclusion in the Transportation Policy Plan. The process ~~will be~~is a collaborative effort of policymakers that includes ~~the Counties Transit Improvement Board (CTIB) and the Metropolitan Council~~funding and operating agencies, such as counties and transit providers, with involvement from cities and other stakeholders through the region's advisory committees. The process ~~will~~ starts with gathering the appropriate technical information and allowing policymakers to be strategic in deciding how a project moves forward and how it is reflected in the Transportation Policy Plan.

Providing the Technical Information

The basic technical information for a proposed transitway project will provide a common understanding for regional decision-making. Through corridor analyses, this region has substantial experience evaluating transitway alternatives with technical measures to determine the right investment for a corridor. This plan ~~is establishing the~~identifies technical investment factors that will be ~~considered~~considered when evaluating corridors for the region to prioritize. ~~A work program item that will build on the extensive experience of the counties and other~~

~~project leads will help determine specific measures.~~ The technical investment factors ~~and example measures that help provide context~~ are included in **Error! Reference source not found.**~~Table~~ 6-5. Projects should provide information that addresses the technical investment factors, using example measures as guides.

Table 6-5: Technical Investment Factors for Setting Regional Transitway Priorities

Technical Investment Factors	~~Possible~~ Suggested Measures
Ridership (Current and forecast year)	• Average weekday project boardings • New weekday system linked trips on transit
Access to Jobs and Activity	• Increase in job accessibility on the transit system ~~within 45 minutes~~ • Number of regional job concentrations or local centers served
Cost-Effectiveness	• ~~Annualized capital and operating cost per annual boarding~~ or • ~~Annualized capital and operating cost~~ per new annual system linked trip on transit
Existing Land Use	• Total population, employment, and student enrollment within ½-mile of proposed stations • Intersection density and walkability near stations • Number and relative share of affordable housing units within ½ mile of proposed stations and community housing performance scores
Future Land use and Development	• Land use plans supportive of transitway densities, as described in "Land Use and Local Planning" • ~~Official land use controls supporting affordable housing construction~~ • Qualitative assessment of regulatory, infrastructure, and financing tools supportive of transit-oriented development ~~including shared parking, parking requirement reductions~~ • Strength of development market • Plans, ~~and~~ policies and land use controls to create and preserve a mix of housing affordability (see Housing Policy Plan)
Equity	• Average weekday project boardings by transit-dependent households • Income and affordable housing access • Opportunity access for low-income population and people of color

Environment	• Water supply – ~~suitability and~~ local policies supporting ~~groundwater recharge~~sustainable water management • Air quality – emissions reduction

This list of technical factors was developed to strongly align with the federal ~~New Starts and Small Starts~~Capital Investment Grants program evaluations and with factors that measure the region's desired results stated in *Thrive MSP 2040* and the *2040 Transportation Policy Plan*. ~~The work program item on Further Defining the Process for Setting Transitway Priorities will work through specific measures as well as methodologies and potential benchmarks [*insert link to "Work Program"*].~~ The technical information will inform decision-making by policymakers that will consider the technical information and policy factors. The technical details on projects included in this Plan are included in tables following the current revenue scenario and increased revenue scenario transitway discussions.

Considering Policy Factors

With the technical information available, policymakers will then need to consider other factors that are more qualitative and less technical. This will require a strong collaboration that includes the ~~CTIB~~ funding partners and the Council, with involvement from cities and other stakeholders through the region's advisory committees. All seven counties in the region administer a sales tax for transportation with identified investment priorities, some including substantial funding for transit. These priorities will be a significant input into the policy discussion about transitway priorities. ~~CTIB has a *Transit Investment Framework* that sets forth the Board's policies and procedures governing the award of grants from the sales tax proceeds and describes the Board's vision for a network of transitways.~~ The county-administered sales taxes ~~is~~are currently the most substantial ~~regional~~ non-federal funding source for transitways. The policy investment factors and important considerations for this analysis are included in Table 6-6.

Table 6-6: Policy Investment Factors for Setting Regional Transitway Priorities

Policy Investment Factors	Possible Considerations
Regional Balance	• Investment levels across the region (geographic and per capita considerations) • Investment levels that promote prosperity at the community's stage and level of development
Funding Viability	• Viability for revenues being considered • Timing of spending expectations and revenues available
Community Commitment	• Local government support (Resolutions of support) • Local land use and development commitments

	• Public support
Risk Assessment and Technical Readiness	• Potential risks through project implementation • Stage of technical readiness, project development

Transitway corridors should take these technical and policy investment factors into consideration during corridor studies, including feasibility studies and alternative analyses. The technical and policy factors will guide the region in determining how a project fits into the timing and funding options in the Current Revenue Scenario of the plan. ~~The prioritization factors will not be used to determine consistency of CTIB's transitway grants with this plan. The technical and policy factors are informative for the region's policymakers and public to provide transparency to the decision-making process.~~

The investment factors highlight the importance of land use and local government development support. Transitway investments are intended to help shape development patterns, but development patterns will also help shape transit investments. In order for transitways to realize their full potential for expected development, local governments will need to provide the vision and planning for land use and local investments. The Council ~~and CTIB~~ and transitway funding partners are committed to expanding the transitway system; local partners will need to show commitment to transit-supportive land use in return. More information on how local governments can do this is available in "Land Use and Local Planning" [*insert link*].

Transitways will not be included in the Current Revenue Scenario until a locally preferred alternative is recommended from a local process. If a number of transitways make this recommendation simultaneously, a multi-transitway analysis may need to be conducted to consider several projects at once. This may also be explored through a regional Program of Projects approach to funding multiple projects at once and accelerating some projects. Until specific measures and methodologies can be defined through the work program item, transitway projects that come forward will be evaluated on a case-by-case basis. ~~by CTIB and the Council, with involvement from cities and other stakeholders through the region's advisory committees.~~ This process is not intended to add steps to the transitway adoption process, but rather to add clarity to the decision-making process moving forward. The process will be integral to decision-making under an Increased Revenue Scenario, where transitway investment has the potential to be accelerated across multiple corridors.

Current Revenue Scenario Transitway System Investments

The region has many corridors under for transitway investment potential. Transitway investments are limited by reasonably expected current revenues and projects must be prioritized within these constraints. The Current Revenue Scenario includes the list of projects that have a locally preferred alternative with approved local resolutions of support and an

identified reasonable funding plan~~, but there is flexibility in the plan to add additional projects under the Current Revenue Scenario~~.

Existing Transitways in Operation

The first priority for investing in the region's transitway system is continuing to operate and maintain the existing transitways.

Existing Transitways in Operation
• METRO Blue Line (Hiawatha Light Rail Transit) • Northstar Commuter Rail • METRO Red Line (Cedar Avenue ~~Transitway~~Highway Bus Rapid Transit) • METRO Green Line (Central Corridor Light Rail Transit) • A Line (Snelling Avenue Arterial Bus Rapid Transit)

Beyond ongoing operations and maintenance, these corridors may require modernization or modest expansion improvements that address operational issues, unmet demand, or other unique challenges. This may include additional stations that will be identified in the project list (Appendix C) and Transportation Improvement Program (TIP), which is updated annually. Existing transitways are shown on Figure 6-8 - Map of Existing Transitways and Current Revenue Scenario Expansion Transitways.

Transitway Expansion Assumed to be Funded within the Current Revenue Scenario

The second priority for investing in the region's transitway system is the expansion of the system in corridors that provide the strongest contributions to meeting *Thrive MSP 2040* outcomes and regional goals and objectives in this plan. The funded projects have a locally preferred alternative (if seeking federal New Starts or Small Starts funding) and an accepted funding plan. These projects are advancing through project development phases, such as final environmental clearances, design and engineering, or construction, with a tentative opening date planned.

The projects assumed to be funded are also furthest along in implementing land use strategies around transitways that further support the region's desired results. Local governments should be conducting or implementing station-area planning for these corridors as they continue to move through the transitway development process. Land use strategies are discussed in more detail in "Land Use and Local Planning" [*insert link*].

Transitway Expansion Assumed to be Funded within the Current Revenue Scenario

The transitway corridors below have a locally preferred alternative and are funded within the current revenue assumptions of the plan. They are shown on Figure ~~6-6~~6-8 - Map of Existing Transitways and Current Revenue Scenario Expansion Transitways ~~Map of Current Revenue Scenario Transitways and CTIB Phase I Program of Projects~~.

- ~~METRO Red Line Stage 2 (Cedar Avenue Transitway): in project development, planned to open around 2019~~
- METRO Orange Line (I-35W South Highway Bus Rapid Transit): ~~in project development~~under construction with some elements already ~~construction~~ completed, planned to open around ~~2019~~2021
- METRO Green Line Extension (Southwest ~~LRT~~Light Rail Transit): ~~in project development~~in engineering with heavy construction anticipated to begin in 2018, planned to open around ~~2019~~2022
- METRO Blue Line Extension (Bottineau ~~LRT~~Light Rail Transit): ~~in pre-project development~~beginning major construction in 2019, planned to open around 2022
- METRO Gold Line (Gateway Dedicated Bus Rapid Transit): in pre-project development, planned to open around ~~2022~~
- ~~Three~~ C Line (Penn Avenue Arterial Bus Rapid Transit): in engineering, planned to open in 2019
- ~~arterial BRT projects with one opening every 2-3 years: Snelling Avenue in design, Penn Ave in pre-project development, and Chicago-Emerson-Fremont in planning~~

~~The region has the financial capacity to fund these projects with current revenue assumptions that include federal funds, sales tax funds administered by CTIB, state funds, and local funds. Sales tax funds administered by CTIB are not assumed for arterial BRT projects. The increased operating costs associated with arterial BRT are not funded because the revenues available are only available for capital. However, arterial BRT capital investment does provide for improved customer experience and operating efficiencies in corridors with existing high levels of service.~~

METRO Orange Line (I-35W South Highway BRT) This project will connect Minneapolis, Richfield, Bloomington, and Burnsville primarily along I-35W. The locally preferred alternative of highway BRT on I-35W was refined in 2014 with the adoption of the *Orange Line Project Plan Update*, which incorporates and updates previous planning projects completed in the corridor between 2005 and 2010. The Orange Line began early construction activities in 2017 and anticipates a federal Small Starts funding agreement in 2018, toward full construction in 2019 and opening in 2021.~~Several capital components were completed through the recent Urban Partnership Agreement and Crosstown Commons reconstruction. Metro Transit is partnering with a number of agencies to design and implement the remaining guideway improvements, stations, and service elements. The project was approved for entry into the FTA's Small Starts project development phase in late 2014. MnDOT's 2005 I-35W BRT Study and the 2030 Transportation Policy Plan recommended extending METRO Orange Line south to Burnsville~~

~~Shopping Center and the Kenrick Avenue Park and Ride in Lakeville. Future station locations, routing, and implementation timeline will be determined as part of this potential second phase.~~

METRO Green Line Extension (Southwest ~~LRT~~Light Rail Transit) This ~~project~~ 14.5 mile extension of the METRO Green Line will connect Eden Prairie, Minnetonka, Hopkins, St. Louis Park, and Minneapolis and the existing Green Line communities. The project's locally preferred alternative was adopted as the Kenilworth-Opus-Golden Triangle (3A) ~~LRT~~ light rail alignment in May 2010~~ and has progressed through the Draft Environmental Impact Statement (DEIS)~~. During the project development phase, the terminus was revised to SouthWest Station, eliminating the Mitchell Road Station from the project. The project anticipates starting heavy construction and receiving a full funding grant agreement in 2018.~~ The project is currently in the preliminary engineering phase and advancing work on local land use planning around proposed stations. Construction is expected to start in 2016 with an opening year of 2019.~~

METRO Blue Line Extension (Bottineau ~~LRT~~Light Rail Transit) This ~~project~~ 13.5 mile extension of the METRO Blue Line will connect Brooklyn Park, Crystal, Robbinsdale, Golden Valley, and north Minneapolis with the existing Blue Line communities. The project's locally preferred alternative was adopted as the West Broadway~~ in Brooklyn Park~~ – Burlington Northern Santa Fe Corridor – Olson Memorial Highway (B-C-D1) ~~LRT~~ light rail alignment in May 2013. The project is in engineering and anticipates starting heavy construction and receiving a full funding grant agreement in 2019. ~~It has advanced into the environmental review phase. Advanced station-area land use planning is ongoing and the region has submitted a request for entry into the FTA New Starts project development phase in 2014.~~

METRO Gold Line (Gateway Dedicated BRT) This project will connect Saint Paul, Maplewood, Landfall, Oakdale, ~~Lake Elmo,~~ and Woodbury. This project's locally preferred alternative was adopted as dedicated BRT generally on the Hudson Road – Hudson Boulevard (A-B-C-D3~~A-B-C-D2-E2~~) alignment that crosses to the south side of I-94 at approximately Bielenberg Drive terminating at Woodbury Theater~~between approximately Lake Elmo Avenue and Manning Avenue~~. Advanced station-area land use planning, environmental work, and early engineering is ongoing and the region plans to submit a request for entry into the FTA New Starts project development phase in 2018.~~The project has advanced into the environmental review state. Advanced station-area land use planning is ongoing and the region plans to submit a request for entry into the FTA New Starts project development phase in 2015. The Gateway corridor has been identified as a funding priority for CTIB in its Phase I Program of Projects.~~

C Line (Penn Avenue Arterial BRT) This project will connect Minneapolis and Brooklyn Center. The project is arterial BRT generally along Glenwood and Penn Avenues terminating at Brooklyn Center Transit Center. Temporary stations will serve the line along Olson Memorial Highway starting in 2019 -until the Blue Line extension is complete, after which the line will move to Glenwood Avenue ~~in 2022~~concurrent with the Blue Line extension opening.

Federal Funding Assumptions for Transit Expansion

The Twin Cities region is in the midst of an aggressive build-out of the transitway system that will help shape the future of the region. To date, the region has been successful in advancing projects that have received substantial funding from the federal government's highly competitive Capital Investment Grants program that includes New Starts and Small Starts grants. This Plan's list of projects is no different, assuming between $200-$250 million per year in federally competitive capital expansion funds for the next decade, and potentially beyond.

Four of the five funded expansion projects assume 45-50% federal funding for the capital cost of the project. The region will continue to plan for and prepare federally competitive projects and explore opportunities for multi-project commitments from the federal government.

There is risk in these assumptions, as the Plan assumes approximately 10% of the federal budget for Capital Investment Grants (under current budget amounts) for ten years. Should federal funding not materialize for any given project, the region will need to work cooperatively to determine a viable funding path forward that considers the *Thrive MSP 2040* outcomes of Stewardship, Prosperity, Equity, Livability, and Sustainability. The discussion of Setting Regional Transitway Priorities will assist with this potential situation.

~~**Federal Expansion Funding in the Current Revenue Scenario**~~

~~Since 2011, the region has been able to secure approximately $90 million per year in New Starts funding for capital projects. (From 2001 through 2010, the annual average was approximately $50 million.) This plan assumes a more aggressive approach to federal New Starts funding of nearly $180 million annually in the first ten years. Federal funding is assumed for 50% of the capital cost of New Starts eligible projects, an assumption the region has a history of achieving. The federal funding levels can be managed with short-term financing tools, such as grant anticipation notes, to provide higher levels of funding when needed with the federal payback occurring later. Beyond the first 10 years, no federal New Starts funding is included in the plan until specific projects are identified with a locally preferred alternative and a plan for funding the project.~~

~~The Council and CTIB will work aggressively to seek competitive federal funding beyond the historical level of federal funding to accelerate building transitways and delivering the region's vision for a system. The region will continue to plan for and prepare federally competitive projects and explore opportunities for multi-project commitments from the federal government. The region will also explore a program-of-projects approach in which some projects are locally funded to leverage federal funds for other projects.~~

~~The region also does not yet have experience pursuing Small Starts funding for a project. Small Starts funding may provide another option for the region to secure additional federal funding~~

for smaller transitway investments, increasing the overall revenue for the region. Small Starts projects do not need to have a locally preferred alternative identified in the plan until seeking a full-funding grant agreement from the FTA, which provides for more flexibility in the timeline for projects to be amended into the Transportation Policy Plan.

Transitway Expansion in CTIB Phase I Program of Projects

The Counties Transit Improvement Board (CTIB) has adopted a list of priority corridors for implementation within current revenue assumptions. These corridors are expected to be implemented in the first 10 years of the plan once a funding plan and locally preferred alternative are determined. The corridors included below are not yet at the point of having a locally preferred alternative or a funding plan to include in the Current Revenue Scenario. In order to accelerate these transitways into the first 10 years of the plan, financing will likely need to be assumed in coordination with CTIB. A project locally preferred alternative will be considered for amendment into the plan when selected and recommended by the lead agency and local governments along a corridor. It is anticipated that these projects will be funded with a combination of federal funds, sales tax funds administered by CTIB, state funds, and local funds but the project specific sources and shares will vary.

Transitway Expansion in CTIB Phase I Program of Projects The transitway corridors below are new transitway project priorities adopted in CTIB's Phase I Program of Projects that are under study for a locally preferred alternative. They are shown on Figure 6-6: Map of Current Revenue Scenario Transitways and CTIB Phase I Program of Projects.
• Robert Street • Riverview • Red Rock

In addition to these expansion corridors, CTIB's Phase I Program of Projects identifies transitway improvement opportunities in existing and planned corridors. These improvement projects are not full transitway implementations, but may enhance existing transitways or advance elements of future transitways, such as incremental improvements in BRT corridors. The Red Rock corridor is prioritized for transitway improvements that move the corridor toward a future transitway.

Acceleration Opportunities within the Current Revenue Scenario

Arterial Bus Rapid Transit Acceleration Opportunities

The Current Revenue Scenario assumes three arterial BRT projects will begin construction in the first 10 years of the plan, funded by a combination of federal CMAQ, state bond, and Council regional transit capital funding. There is financial capacity in the Current Revenue Scenario to fund additional arterial BRT projects beyond the first 10 years should the region establish a

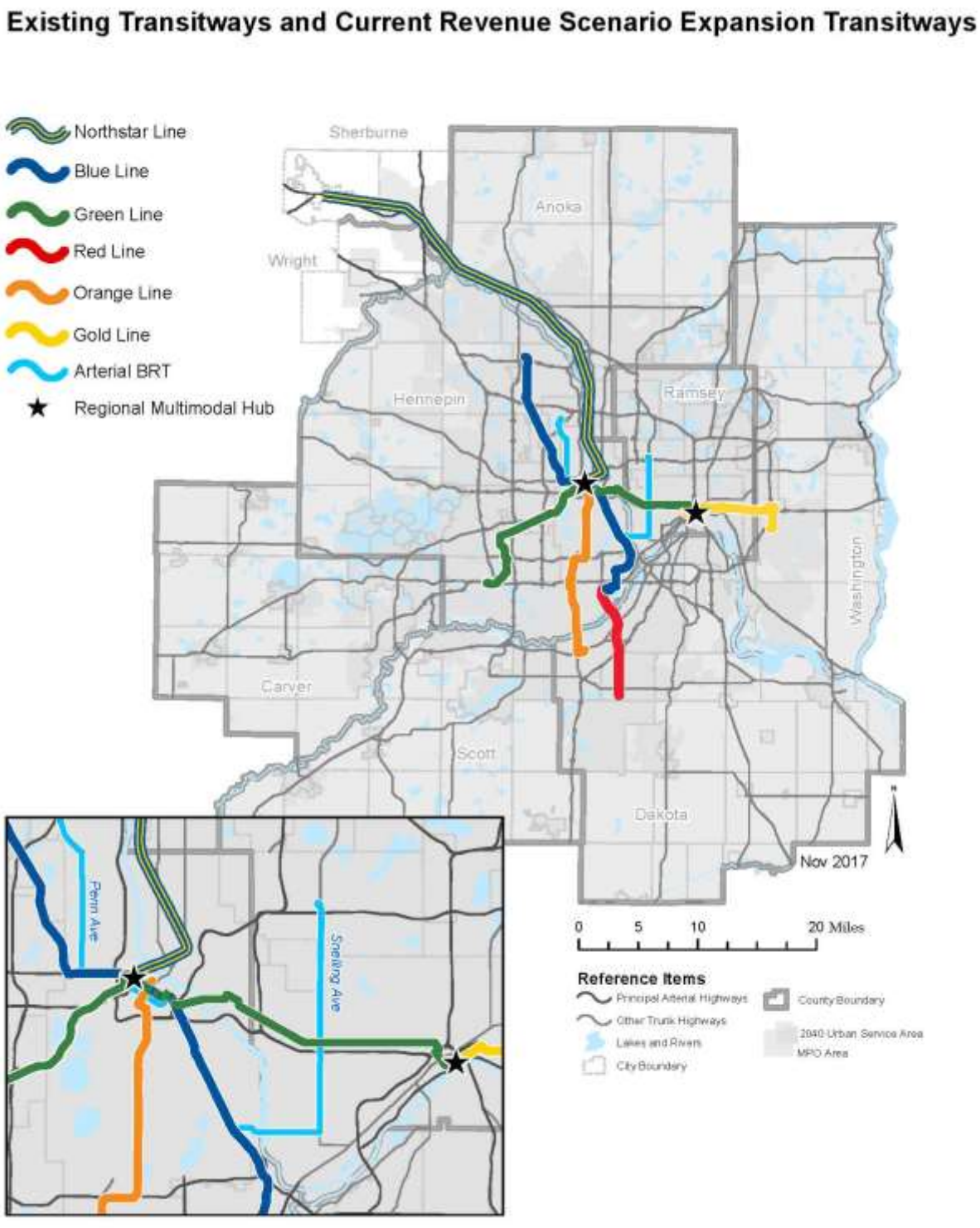
~~track record of securing CMAQ and state bond allocations for arterial BRT projects. Additional arterial BRT projects are not yet included in the Current Revenue Scenario as the next 10 years will be key to assessing this funding assumption.~~

~~Modern Streetcar Acceleration Opportunities~~

~~A number of transitway studies are exploring the modern streetcar alternative as a possible addition to the regional transitway system. While this plan acknowledges that a broader discussion on modern streetcars needs to occur at the regional level, there are opportunities for projects to move forward on a case-by-case basis.~~

~~The City of Minneapolis recommended modern streetcar as the locally preferred alternative in the Nicollet-Central corridor. Subsequent to 2013 legislative authority, the City of Minneapolis established a Value Capture District specific to this project to allow the City to issue bonds for up to $60 million toward project implementation. These potential revenues are not assumed in the Current Revenue Scenario, but present a significant opportunity to pursue federal, state and other local funding to advance the Nicollet-Central modern streetcar. Operating funding for the project has not been identified. A project seeking a Small Starts grant agreement (or "Expedited Grant Agreement") to begin construction is required to identify operating funds through the federal application process. If the city identifies all the capital funding for the project, the project and its revenues can be added to the preceding list of expansion projects assumed to be funded within the Current Revenue Scenario, pending a policy discussion of the source of operating funding.~~

Figure ~~6-6~~6-8: Map of Existing Transitways and Current Revenue Scenario Expansion Transitways ~~and CTIB Phase I Program of Projects~~



Increased Revenue Scenario Transitway System Investments

In order to complete the region's vision of a transitway system and do it on an accelerated timeline, the region will need additional funding for transitways. Increased funding will allow the region to:

- Accelerate the build-out of the transitways included in the Current Revenue Scenario
- ~~Afford the transitways in CTIB's *Transit Investment Framework* beyond the Phase I Program of Projects~~
- Afford additional transitways ~~not in CTIB's *Transit Investment Framework*~~ that have recommended locally preferred alternatives, are under study, or needing to be studied for mode and alignment by other partners
- Implement a system of ~~11~~ arterial ~~BRT~~ bus rapid transit projects that provide enhanced transit on heavily used existing transit routes

Increased funding will allow the region to invest in a system of transitways that keeps the region competitive in providing an attractive economy and connected, livable communities. The corridors listed in this section will need to go through the technical and policy investment factor prioritization identified previously [*insert link to Setting Regional Transitway Priorities*]. Because implementation of these corridors is likely not available under current revenues until after 2024, any prioritization efforts will need to consider the long-term implications of prioritization as well as the near-term possibilities should increased revenues become available.

Local governments along these corridors should be working on land use studies and planning that would maximize the potential of transitways while recognizing that they are still in the planning phases. These projects still provide an opportunity to adapt the transportation decisions with the land use visions of local communities.

Additional Transitways under Increased Revenue Scenario

Under the Increased Revenue Scenario, the transitway corridors listed below ~~– along with accelerating the Current Revenue Scenario transitways and the CTIB Phase I Program of Projects –~~ could reasonably be implemented by 2040. These corridors are in various stages of ~~planning and will need to complete a locally preferred alternative recommendation to be considered~~development and will need to be ~~for~~ prioritiz~~ation and~~ed for funding if it becomes available. The Council will continue to work with the appropriate partners in the planning of these potential transitway investments and with local governments working on land use planning. The complete transitway vision is shown on Figure 6-9 ~~6-7~~: Map of Increased Revenue Scenario Transitways – Building an Accelerated Transitway Vision.

Projects with Study Recommendations in Advanced Stages of Development:

- METRO Red Line Future Stages
- Rush Line Dedicated BRT
- Nicollet-Central Modern Streetcar

Projects with Study Recommendations:

- Midtown Rail
- Red Rock Bus Rapid Transit
- West Broadway Modern Streetcar
- Highway 169 Bus Rapid Transit

Projects under Study or to be Studied:

- Riverview Corridor
- METRO Orange Line Extension
- Highway 36
- I-35W North
- I-394/Highway 55
- Robert Street
- ~~North~~ Central[1]
- ~~Rush Line~~

Arterial BRT ~~projects~~[2]projects with partial funding, incremental improvements:~~:~~

- Chicago/~~-~~Emerson-Fremont

~~American Boulevard~~
~~Central Avenue NE~~
~~East 7th Street~~
~~Hennepin Avenue~~

- Lake Street/Marshall Avenue
- Hennepin Avenue

~~Nicollet Avenue~~
~~Robert Street~~
~~West Broadway Avenue~~

Arterial BRT projects[1] without partial funding:

- American Boulevard
- Central Avenue NE
- East 7th Street
- Nicollet Avenue
- Robert Street
- West Broadway Avenue

~~[1]CTIB identified corridor, not currently under study for transitway investment.~~

[1~~2~~] Several arterial BRT corridors are also under consideration for other modes.

Projects with Study Recommendations but Incomplete Funding Plan

METRO Red Line Future Stages (Cedar Avenue Highway BRT) The first stage of this project opened in mid-2013 ~~with service to stations in Bloomington, Eagan, and Apple Valley~~. An

Implementation Plan Update (~~2010~~2015) has identified future stages that will add stations, park-and-ride capacity, and service to the line, including an extension to a number of planned stations in Lakeville. Future stages would also address bicycle and pedestrian improvements and station area planning. ~~Stage 2 is included in the Current Revenue Scenario as an extension of BRT service to the Lakeville-Cedar station at 181st Street. The Implementation Plan is being updated with adoption anticipated in 2015.~~

~~**Rush Line** This corridor links Saint Paul with White Bear Lake and communities beyond. An initial Alternatives Analysis was completed in 2009 and a pre-project development study is currently underway to recommend a locally preferred alternative. A commuter bus demonstration service was initiated in 2010 that provides peak-hour express service to downtown St. Paul.~~

Rush Line Dedicated BRT This project will connect Saint Paul, Maplewood, Vadnais Heights, Gem Lake, and White Bear Lake. The project's locally preferred alternative is dedicated BRT generally from Union Depot along Phalen Boulevard, Ramsey County Regional Railroad Authority property (adjacent to Bruce Vento Trail) to I-694, and Highway 61 terminating in downtown White Bear Lake. Work is ongoing on station-area planning, environmental review, and early engineering in preparation for eventual request into the FTA New Starts project development phase.

Nicollet-Central Modern Streetcar This project would connect neighborhoods in downtown, northeast, and south Minneapolis. The corridor study was completed in 2013 and the locally preferred alternative recommendation is modern streetcar primarily along Nicollet Avenue, Nicollet Mall and Hennepin/1st Avenues. The project is currently in the environmental review phase and the City of Minneapolis is expected to begin engineering in 2018. ~~This corridor in Minneapolis was studied through an Alternatives Analysis that concluded in late 2013 with a recommended locally preferred alternative of modern streetcar. The LPA is under consideration for potential funding commitments in anticipation of being amended into the plan. The modern streetcar would provide circulation through the core of the city from Lake Street to at least 5th Street NE along Nicollet Avenue, Nicollet Mall, and Hennepin/1st Avenues. It would connect with the METRO Blue and Green lines in downtown. The environmental review phase is currently underway and is expected to be completed in early 2015.~~

Midtown Rail This ~~corridor~~ project would connect~~links~~ the existing METRO Blue Line Lake Street Station ~~with~~ and planned METRO Green Line West Lake Station with neighborhoods in ~~along the 29th Street Greenway through~~ south Minneapolis. The transit study was completed in 2012 ~~The corridor was studied through an Alternatives Analysis that concluded~~ with a locally preferred alternative recommendation of rail in the Midtown Greenway combined with ~~the proposed A~~arterial BRT on Lake Street. Funding has not yet materialized for further development of the rail project, though Metro Transit secured partial funding for bus improvements on Lake Street and will begin bus improvement planning efforts in 2018.~~The~~

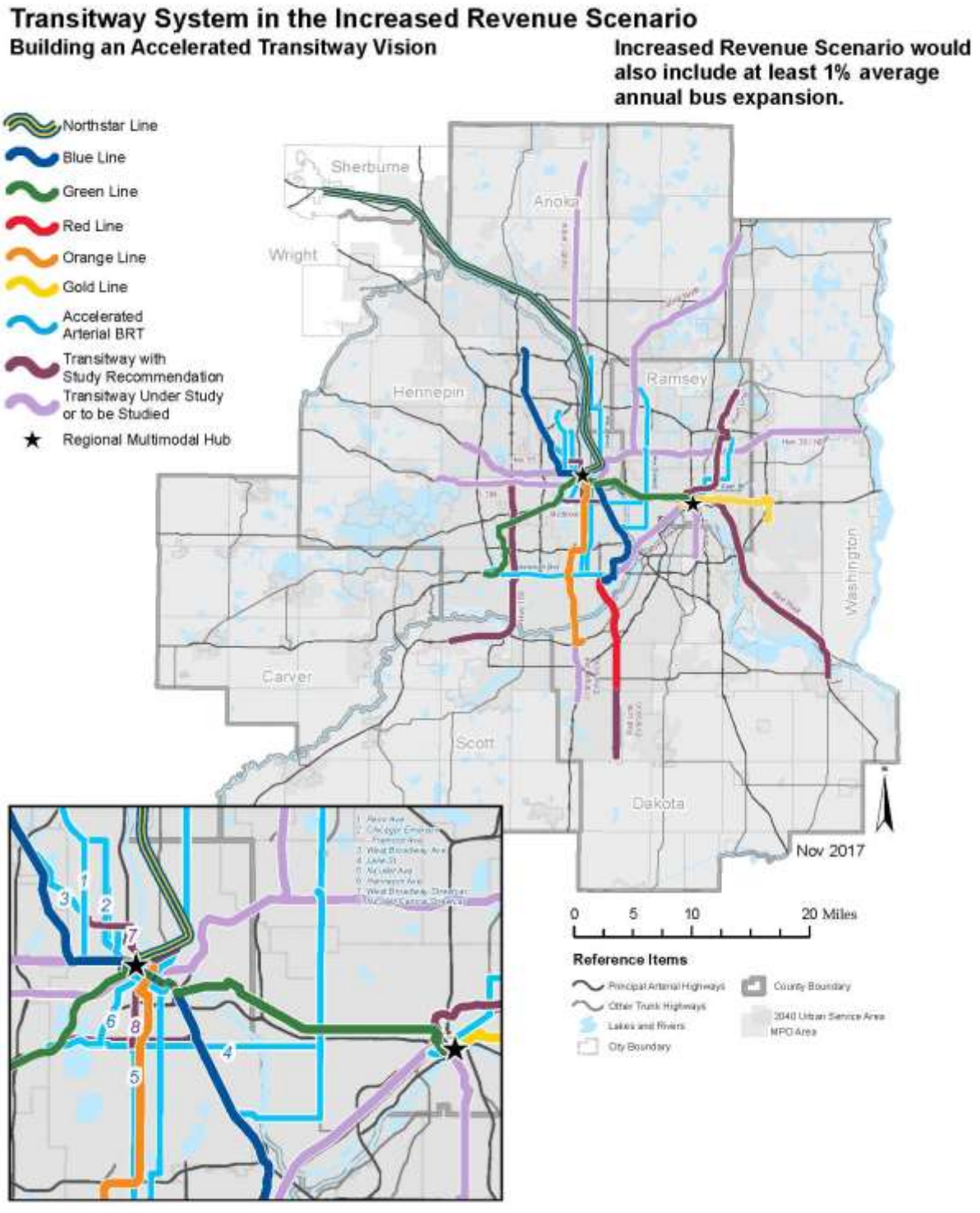
~~recommended locally preferred alternative will be considered through a future amendment to the Transportation Policy Plan.~~

Red Rock **Highway Bus Rapid Transit** This project would connect Saint Paul to Newport, Saint Paul Park, Cottage Grove, and Hastings. An implementation plan was completed in 2016 that refined a long-term vision of highway BRT recommendations in the Highway 61 corridor. Initial stages include improved express bus service and all-day bus service introduction with ongoing monitoring of its performance. ~~This corridor links Hastings to Saint Paul and Minneapolis, and was studied through an Alternatives Analysis update in 2014. The analysis recommended a staged approach to developing highway BRT in the corridor. The next steps will include developing an implementation plan and ongoing strategies for investment. Transitway improvements in the corridor are a priority in CTIB's Phase I Program of Projects.~~

West Broadway **Modern Streetcar** ~~The West Broadway corridor~~This project would connect~~s~~ the Minneapolis neighborhoods along West Broadway to downtown Minneapolis and Robbinsdale. The corridor study was completed in 2017 with a recommendation of modern streetcar to North Memorial along with additional improvements to bus service in the corridor. Funding has not yet materialized for further development of the project.~~The corridor was studied as part of the Bottineau corridor but was not the recommended alignment. Metro Transit, the City of Minneapolis, and Hennepin County are partnering on a detailed corridor study of West Broadway that will begin in 2014. The study will analyze transit options along West Broadway and options to connect to downtown Minneapolis, to the planned Bottineau LRT corridor, and other transit services.~~

Highway 169 Highway Bus Rapid Transit The project would connect communities in northern Scott County to cities along Highway 169 in Hennepin County and downtown Minneapolis. A study of bus rapid transit and MnPASS improvements was completed in 2017. The study recommended…UPDATE PENDING STUDY RESULTS LATE 2017.

Figure ~~6-7~~6-9: Map of Transitway System in an Increased Revenue Scenario ~~Transitways~~ – Building an Accelerated Transitway Vision



Arterial Bus Rapid Transit

Arterial bus rapid transit is a transitway mode intended to improve the customer experience and attractiveness of some of the most heavily used existing bus routes in the transit system. The first line, the A Line, opened in 2016, and the second line, the C Line, begins construction in 2018. These lines are part of a planned system that was first developed in 2012 through the Arterial Transitway Corridor Study.

Additional investment in the arterial BRT system is happening incrementally until full funding can be secured for each project. Several projects have identified funding for certain elements of the future BRT (see "Additional Transitways under Increased Revenue Scenario" box for a complete list) and these elements will provide improvements to the existing bus service in the corridor, regardless of when funding for the full BRT project is secured. Examples of incremental investments building toward arterial BRT include:

- Enhanced customer waiting facilities and customer information technology
- Faster, limited stop bus service
- More reliable bus service with transit signal priority and transit advantages
- New larger buses for improved circulation and boarding

This plan acknowledges the incremental build out of some of these elements for the corridors in planning. A number of these improvements are funded through the Regional Solicitation (see Project List, Appendix C). As funding is identified for the implementation of the full set of arterial BRT improvements for a corridor, the plan will be amended.

Arterial Transitway Corridor Study Metro Transit completed a system study on arterial BRT in 2012 that concluded with recommendations for arterial BRT in 1~~1~~2 corridors (11 in the study plus one added ~~through~~following ~~the~~ Bottineau light rail project planning) originally identified in the 2030 Transportation Policy Plan~~ and another corridor based on work done through the Bottineau light rail project~~. Development of the West 7th Street l~~L~~ine has been put on hold pending the results of the Riverview corridor study. The remaining 11 corridors are being advanced by Metro Transit incrementally, capitalizing on the timing of bus replacement schedules, road reconstruction projects, and other opportunities that may allow for coordinated transit investment. Several arterial BRT corridors are also under

Additional Projects Under Study or to be Studied

The following projects have been identified as showing potential for transitway investments as a result of transit system studies.

Riverview Corridor This corridor connects Saint Paul with the Minneapolis-Saint Paul International Airport and the Mall of America and South Loop district in Bloomington. A draft locally preferred alternative has been developed in late 2017 recommending modern streetcar within a dedicated and shared-use guideway generally along West 7th Street, the Highway 5 river crossing, and existing light rail tracks starting just north of Fort Snelling Station. The corridor is in the progress of advancing this recommendation through the appropriate local processes. ~~Initial analysis on the corridor was completed in 2000 but transitway implementation did not move forward. A pre-project development study is underway to recommend a locally preferred alternative. The Riverview corridor is a priority in CTIB's Phase I Program of Projects.~~

METRO Orange Line Extension The first stage of the METRO Orange Line is expected to bring BRT service to Burnsville on I-35W. The *Metro Orange Line Extension* Study (2017) is defining the key components of a potential future extension of Orange Line service south further into Burnsville and to Lakeville. The study is identifying station locations, route alignments, runningway operations and operating technologies needed for an extension. The study is expected to be completed in 2018.

I-35W North This corridor links downtown Minneapolis with communities along I-35W north of downtown to Forest Lake. The corridor was studied through a feasibility study led by MnDOT in 2013. The study focused primarily on the highway ~~managed lane~~ MnPASS vision but included an analysis of highway BRT potential coordinated with that vision. As ~~highway~~ MnPASS design work on the corridor continues, BRT implementation will be coordinated with these concepts through planning efforts.

Robert Street This corridor completed a transit study in 2015 that narrowed down the potential projects to arterial BRT and streetcar on Robert Street from downtown Saint Paul to West Saint Paul. A recommendation for a locally preferred alternative did not emerge from the study but is expected to be reanalyzed after local governments completed their Comprehensive Plan updates by the end of 2018.~~This corridor initiated an Alternatives Analysis that is looking at a highway BRT option on Highway 52 and arterial BRT and streetcar options on Robert Street from downtown Saint Paul south into Dakota County. A recommendation for a locally preferred alternative is expected in late 2014. Robert Street is a priority in CTIB's Phase I Program of Projects.~~

Highway 36 and I-394/Highway 55 through the Highway Transitway Corridor Study The Highway Transitway Corridor Study was a regional analysis of potential highway BRT investments in nine corridors throughout the region. These investments have the potential to be coordinated with highway improvements that might include MnPASS, bus-only shoulders, or other transit advantages. The analysis indicated the strongest potential for highway BRT improvements in the Highway 36, Highway 169, I-94, and I-394/Highway 55 corridors. Highway 169 has been studied in more detail and I-94 was dismissed because of a lack of local support.

The remaining corridors were acknowledged as potential projects but have yet to undergo more detailed study.

Transitway Investments Technical Information

Transitway investments represent the major transit projects included in this plan. For projects in the both the Current Revenue Scenario and the Increased Revenue Scenario, an important step in the plan's decision-making process is Setting Regional Transitway Priorities. Table 6-7 provides a summary of important technical information about transitway projects in both funding scenarios, as available.

Table 6-7 – (NOT YET AVAILABLE)

~~The most important next step for this tier of transitways is continued study at a corridor level to progress toward a specific locally preferred alternative recommendation (if seeking federal New Starts or Small Starts funding) to the Council. While a recommendation does not guarantee funding in the plan, it does put the region in a position to better understand the needs of each project and consider them for available resources along with other potential projects.~~

~~These corridors will need to go through the technical and policy investment factor prioritization identified previously [*insert link to Setting Regional Transitway Priorities*]. The region will conduct an analysis of potential transitway recommendations when they are ready, following the adoption of this plan. Because implementation of these corridors is not available under current revenues until after 2024, any prioritization efforts will need to consider the long-term implications of prioritization as well as the near-term possibilities should increased revenues become available.~~

~~Local governments along these corridors should be working on land use studies and planning that would maximize the potential of transitways while recognizing that they are still in the planning phases. These projects still provide an opportunity to adapt the transportation decisions with the land use visions of local communities.~~

THE REMAINING SECTIONS WILL BE UPDATED IN DECEMBER 2017

Transit Investment Plan Financial Summary

The previous sections of this chapter described in detail the expected investments under the current and Increased Revenue Scenarios for both the bus and support system and transitway system investments. This section summarizes the two scenarios by providing a brief, high-level financial summary of all of the planned transit investments.

Current Revenue Scenario Financial Summary

Table ~~6-7~~6-8 is a financial summary of the Current Revenue Scenario for both the bus and support system and transitway system investments.

Table ~~6-7~~6-8: Current Revenue Scenario Summary of Funded Investments (Year or Expenditure Dollars)

	2015-2024 (10 years)	2025-2034 (10 years)	2035-2040 (6 years)	Total 2015-2040 (26 years)
Revenues	**$ 11,009 M**	**$ 11,548 M**	**$ 8,675 M**	**$ 31,232 M**
Bus and Support System Investments				

	2015-2024 (10 years)	2025-2034 (10 years)	2035-2040 (6 years)	Total 2015-2040 (26 years)
Existing				
Operating	$ 4,729 M	$ 6,261 M	$ 4,710 M	**$ 15,700 M**
Capital	$ 964 M	$ 1,107 M	$ 769 M	**$ 2,840 M**
Modernization	$ 103 M	$ 117 M	$ 81 M	**$ 301 M**
Expansion				
Operating	-	-	-	-
Capital[1]	$ 103 M	$ 117 M	$ 81 M	**$ 301 M**
Total Bus and Support System	**$ 5,899 M**	**$ 7,602 M**	**$ 5,641 M**	**$19,142 M**
Transitway System Investments				
Existing				
Operating	$ 982 M	$ 1,257 M	$ 917 M	**$ 3,156 M**
Capital	$ 107 M	$ 195 M	$ 136 M	**$ 438 M**
Expansion				
Operating	$ 398 M	$ 1,085 M	$ 792 M	**$ 2,275 M**
Capital Improvements	$ 144 M	-	-	**$ 144 M**
~~Transitway Projects:~~ ~~- CCLRT Debt and FTA Cash Flow~~Debt ~~- METRO Red Line Stage 2~~ ~~- METRO Orange Line~~ ~~- METRO Green Line Extension~~Ext. ~~- METRO Blue Line Extension~~Ext. ~~- METRO Gold Line~~ ~~- Snelling Ave. ABRT~~ ~~- Penn Ave ABRT~~ ~~- Chicago-Fremont ABRT~~	~~$ 192 M~~ ~~$ 74 M~~ ~~$ 150 M~~ ~~$ 1,559 M~~ ~~$ 999 M~~ ~~$ 469 M~~ ~~$ 16 M~~ ~~$ 36 M~~ ~~$ 77 M~~	~~$ 50 M~~ ~~-~~ ~~-~~ ~~-~~ ~~-~~ ~~-~~ ~~-~~ ~~-~~ ~~-~~	~~-~~ ~~-~~ ~~-~~ ~~-~~ ~~-~~ ~~-~~ ~~-~~ ~~-~~ ~~-~~	
Transitway System Expansion – Undesignated[2]	($ 92 M)[3]	$ 1,360 M	$ 1,188 M	**$ 2,456 M**
Total Transitway System	**$ 5,111 M**	**$ 3,947 M**	**$ 3,033 M**	**$ 12,091 M**
Total Investments – All Categories	**$ 11,009 M**	**$ 11,548 M**	**$ 8,675 M**	**$ 31,232 M**

	2015-2024 (10 years)	2025-2034 (10 years)	2035-2040 (6 years)	Total 2015-2040 (26 years)
[1] May include operating funding for initial start up of new services, typically up to three years. [2] Undesignated revenue primarily includes sales tax administered by CTIB and CMAQ and state bond funds. CTIB funds are expected to be committed to Phase I Program of Projects priorities that do not yet have an LPA. CMAQ and state bond funds are expected to fund future arterial BRT projects. [3] Will be addressed through financing mechanisms in coordination with CTIB.				

The following are the major financial conclusions of the Current Revenue Scenario.

- The region is able to operate and maintain the existing bus and support system.
- No expansion of bus service is available beyond the rapidly growing demand for Metro Mobility.
- There is limited capital expansion and modernization of the bus and support system facilities through preservation efforts and through competitive federal funds.
- The region is able to operate, maintain, and improve the existing transitways that include METRO Blue Line, METRO Green Line, METRO Red Line, and Northstar.
- In the first 10 years of the plan, funded transitway expansion will include building and operating four additional METRO lines, including the region's first dedicated BRT, and building three arterial BRT lines.
- The region expects to invest at least an additional $2.4 billion in building and operating additional transitway expansion for CTIB Phase I Program of Projects and other acceleration opportunities. This is primarily funded with sales tax revenues and assumptions for future arterial BRT projects but may include additional matching funds as project plans are finalized.

Increased Revenue Scenario Financial Summary

The Increased Revenue Scenario is based on both analyzing the need to build out and expand the bus and support system and transitway system, and considering what might be an attainable level of new revenue for transit in the region. In 2012, the Governor's Transportation Finance Advisory Committee (TFAC) looked at this issue in detail and concluded that building a competitive regional economy would require approximately $5 billion to $5.8 billion in new metropolitan area transit revenue.

The Increased Revenue Scenario in this plan uses the TFAC level of financial need as a starting point, but also includes consideration of inflation (the TFAC recommendation was in constant 2015 dollars) and extending the time period to 2040 (TFAC was a 20-year analysis to 2032). As Table F-8 indicates, the total estimated new revenue need for expanding the transit system is approximately $7 – 9 billion over the 26-year period of the plan. The $7 – 9 billion funding level could be attainable based on a half-cent metropolitan area sales tax increase that was explored through TFAC. But this funding level would not allow for changing funding shares of other

transit partners (in other words, lowering the state or federal shares of a project or existing transit system operating costs).

Under the Increased Revenue Scenario, the funding need is estimated to be approximately 25% for bus and support system expansion and 75% for transitway system expansion. This is an average funding level over the 26-year period of the plan with the expectation that spending in any given year will be dependent on the identified expansion needs and costs of proposed projects.

As indicated earlier, expansion of the bus system is only able to occur under the Increased Revenue Scenario – only very limited bus capital expansion is funded in the Current Revenue Scenario. Table 6-8 shows that under a reasonable expansion of the bus and support system approximately $2 – 3 billion in additional revenue would be required between 2015 and 2040. This estimated level of funding need represents about an average of 1% increase per year in bus service (in this case, measured in net operating dollars or subsidy). This likely represents a conservative estimate of the needs and funding requests for an Increased Revenue Scenario will be updated as bus service needs are updated through the Regional Service Improvement Plan. The capital costs associated with bus service expansion are also included. This level of funding would also provide for opportunities to modernize the existing bus system and provide for an improved overall customer experience.

The $5 – 6 billion estimate for transitway system expansion would likely allow the list of corridors in the transitway Increased Revenue Scenario to be fully implemented based on rough project estimates as they are known today. There is a level of uncertainty in the funding estimate because many transitway projects are still in planning, and because the need for operating revenue for transitways depends on the timing and type of projects that are implemented.

Table 6-~~8988~~: Increased Revenue Scenario Summary of Potential Revenues and Investments (Year of Expenditure Dollars)

	2015-2040 (26 years)
Revenues	**$ 7.0 – 9.0 billion**
Bus and Support System	**$ 2.0 – 3.0 billion**
Transitways	**$ 5.0 – 6.0 billion**