

# "A" MINOR ARTERIAL System Evaluation Study

## Study Overview

The purpose of the "A" Minor Arterial System Evaluation Study was to evaluate if the Twin Cities Metropolitan Area's "A" Minor Arterial system has and continues to successfully supplement the Principal Arterial system. The study considered if the original purpose of the "A" Minor Arterial system aligns with regional policy in 2012; examined the system's funding – federal, state, and local – to identify the role of federal funding; and sought to identify the changes needed to make the "A" Minor Arterial system, its purpose, and regional policies more consistent.

The "A" Minor Arterial system has successfully supplemented the Principal Arterial system. The system's original purpose continues to align with current regional policy and federal funding, including monies awarded through the Regional Solicitation, and plays a small but important part in developing and enhancing the system. The study's conclusions and recommendations identify the changes needed to allow the "A" Minor Arterial system to continue to fulfill this important regional role.

Conclusions and recommendations are presented in three categories:

- "A" Minor Arterial System and Policy
- "A" Minor Arterial Regional Solicitation
- Other

## "A" Minor Arterial System and Policy Conclusions and Recommendations

**1 Conclusion:** The "A" Minor Arterial system has and continues to successfully supplement the Principal Arterial system.

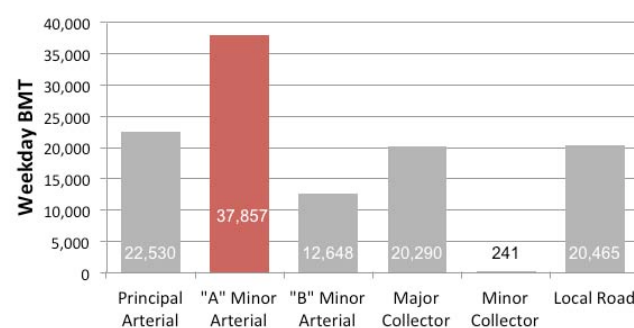
**Recommendation:** The Metropolitan Council and TAB should continue to recognize the importance of the "A" Minor Arterial system and its strong connection to regional goals and policy and clarify its purpose in policy.

**Findings:** 1) The Regional Highway System (Principal and "A" Minor Arterials) make up less than 25 percent of the region's lane-miles, but carried nearly 75 percent of the vehicle-miles traveled (VMT) in 2010. 2) The Regional Highway System (Principal and "A" Minor Arterials) carry 53 percent of the region's bus-miles travelled (BMT). 3) The "A" Minor Arterial system aligns with regional goals and policies. 4) *Thrive MSP 2040* should define the Regional Highway System. 5) Future updates of the *Transportation Policy Plan* should more fully explain the purpose of the "A" Minor Arterial system and more clearly articulate the difference between "A" and "B" Minor Arterials.

### Share of System Lane-Miles and VMT

Functional Classification	% of 2011 Lane-Miles	% of 2010 Daily VMT
Principal Arterial	9	48
"A" Minor Arterial	13	26
"B" Minor Arterial	3	5
Major Collector	8	10
Minor Collector	2	1
Local Road	65	10
TOTAL	100	100

### Average Weekday BMT by Functional Classification (2010)

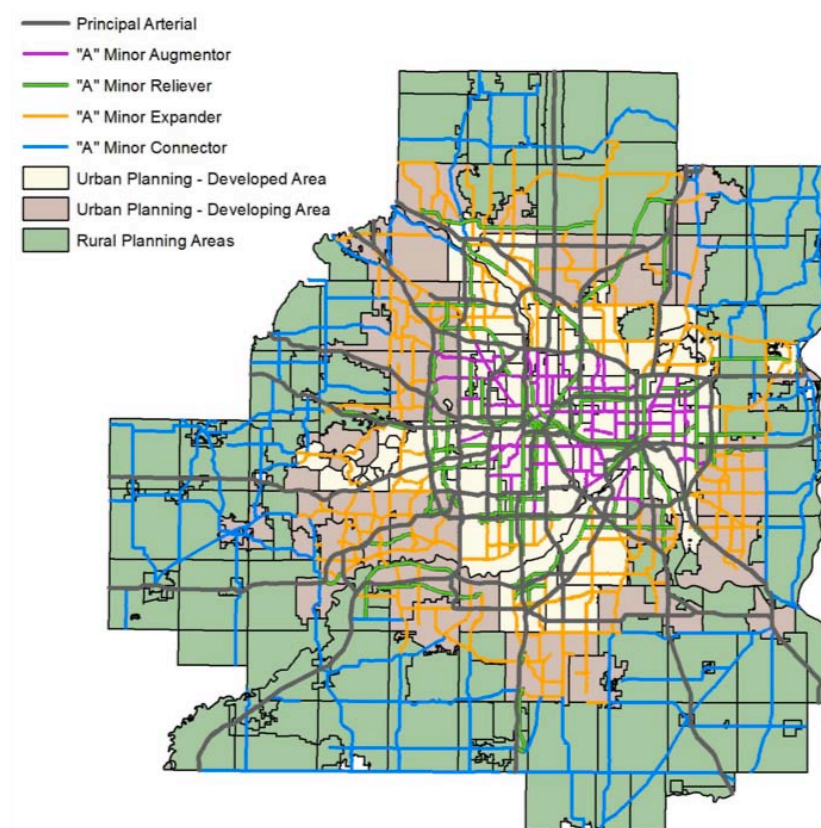


**2 Conclusion:** The four types of "A" Minor Arterials have allowed the region to build the system sensitive to established policy and physical context.

**Recommendation:** The Metropolitan Council and TAB should maintain four types of "A" Minor Arterials and update their definitions in policy.

**Findings:** 1) Each type of "A" Minor Arterial is generally aligned with its physical context and intended regional development planning area. 2) The network is well distributed throughout the seven-county Twin Cities Metropolitan Area. 3) The four types of "A" Minor Arterials are well understood by regional partners. 4) Augmenter and Expander definitions should be reviewed to consider development changes since the types were defined in the early 1990s.

### Regional Development Planning Areas

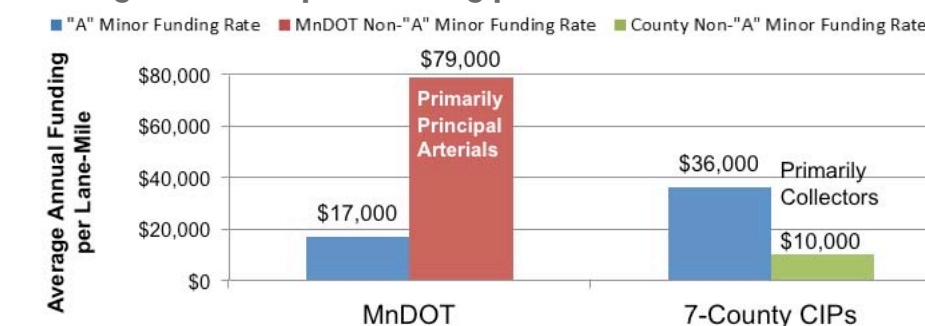


**3 Conclusion:** Consistent with federal policy, regional policy, and agency priority, Principal Arterials are MnDOT's investment priority and as a result it is investing significantly less in "A" Minor Arterials when compared to the seven counties. At the same time, the *Transportation Policy Plan* directs several "A" Minor implementation strategies toward MnDOT only.

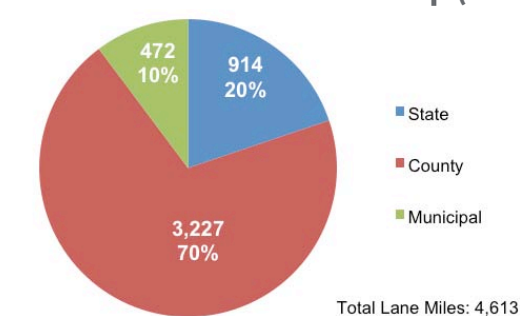
**Recommendation:** The Metropolitan Council and TAB should complete further analysis of this investment imbalance and develop as part of the next update of the *Transportation Policy Plan* policies and strategies for building, managing, and improving all of the Regional Highway System as appropriate within the context of all transportation system needs.

**Findings:** 1) Counties spend twice as much as MnDOT on "A" Minor Arterials per lane-mile. 2) MnDOT and the counties are investing capital resources consistent with regional policy and agency priorities. 3) MnDOT owns 20 percent of the region's "A" Minor Arterials. 4) Related work includes MAP-21 interpretation, the Minnesota Jurisdictional Realignment Project, and the Regional Solicitation Evaluation.

### Average Annual Capital Funding per Lane-Mile



### "A" Minor Arterial Ownership (Lane-Miles)



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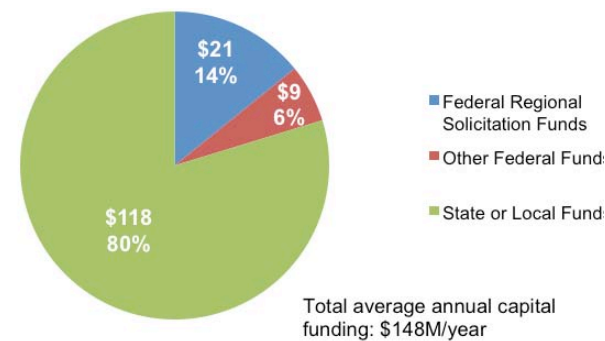
## "A" Minor Arterial Regional Solicitation Conclusions and Recommendations

**4 Conclusion:** Federal funds are a small but important part of the capital funding used to improve the "A" Minor Arterial system.

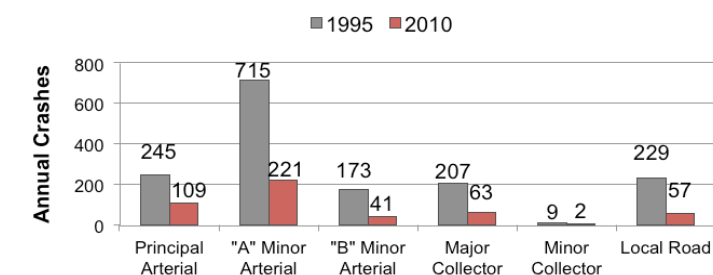
**Recommendation:** The Metropolitan Council and TAB should continue directing federal funds through the Regional Solicitation process to the "A" Minor Arterial system.

**Findings:** 1) Approximately 14 percent of "A" Minor Arterial capital funding comes from the Regional Solicitation Process. 2) Another six percent comes from other federal sources. 3) Regional solicitation funding is important and competition for it is aggressive. 4) 80 percent of "A" Minor Arterial capital funds come from state and local sources. 5) In addition to capital investments, state and local agencies also make considerable investments in engineering and planning activities. 6) Travel on the "A" Minor Arterial system increased 11.8 million vehicle miles per day from 1999-2010. 7) The "A" Minor Arterial system saw a 69 percent reduction in the number of crashes from 1995-2010. 8) Based on a national peer review, the study found using functional classification to target investments is innovative and important to delivering key improvements.

### 2000-2010 Average Annual "A" Minor Arterial Capital Funding (millions)

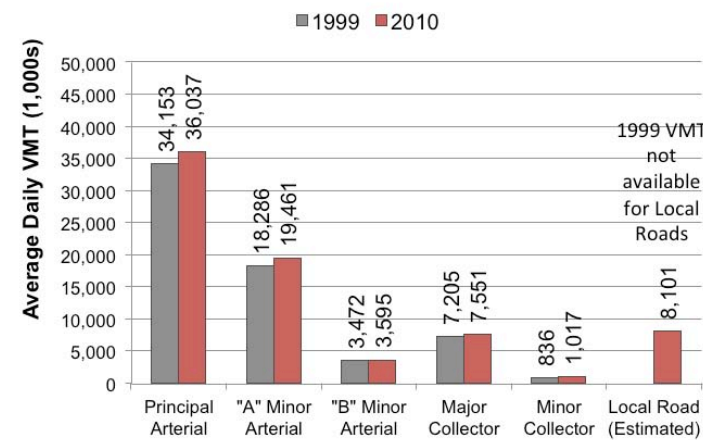


### Annual Fatal or Serious Injury Crashes



Source: MnDOT crash records for 1995 and 2010

### Average Daily VMT by Functional Classification



**5 Conclusion:** The Regional Solicitation's use of the four types of "A" Minor Arterials has done a good job of allocating federal funding in proportion to use.

**Recommendation:** The TAB should continue to use the four types of "A" Minor Arterials to help target federal funding to different parts of the Regional Highway System.

**Findings:** 1) Federal funding has been allocated to elements of the "A" Minor Arterial system in proportion to their use in 2010.

### "A" Minor Arterial Comparison by Type

"A" Minor Arterials	Centerline Miles %	Lane-Miles %	VMT % (2010)	Regional Solicitation Funding %	Regional Solicitation Funding (\$millions)
Augmentor	9	13	16	16	\$59
Reliever	22	26	27	24	\$89
Expander	34	36	40	42	\$156
Connector	35	25	17	18	\$65
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>\$369</b>

**6 Conclusion:** MAP-21, regional policy emphasizing lower cost/high benefit projects, rising construction costs, fewer staff resources, changing technology, and other factors contribute to a need to review the Regional Solicitation.

**Recommendation:** As part of the upcoming Regional Solicitation Evaluation, the TAB and TAC should:

- Continue to evaluate MAP-21 to identify the implications of the legislation on federal funding for the "A" Minor Arterial system and on the Regional Solicitation Process.
- Examine the effect of increasing the number of points awarded to projects for cost effectiveness.
- Balance the desire to increase the maximum grant amount with the desire to award funding to a large number of different projects.
- Seek ways to limit the level of effort required to prepare Regional Solicitation applications.
- Provide for the online submittal of Regional Solicitation applications, continue building the database of Regional Solicitation applications started by this study, and consider, as part of the Regional Solicitation Evaluation, implementing technology that would automatically populate the database when applicants submit future applications online.

**Findings:** 1) Cost-effectiveness and putting dollars toward performance issues are underlying themes in the *Transportation Policy Plan* and MAP-21. 2) Some regional partners reported the maximum grant amount has prevented them from addressing more complex problems. 3) Regional partners reported they felt the Regional Solicitation Process is fair and balanced, but shared concerns about the level of effort needed to prepare quality applications. 4) This study created a database that includes all of the "A" Minor Arterial projects selected for funding through the Regional Solicitation Process from 1993 to 2009.

**7 Conclusion:** While a study survey of completed "A" Minor Arterial projects showed a high level of consistency between proposals partially funded by the Regional Solicitation and in-place construction, the survey also identified a small number of projects with significant project elements that did not match their Regional Solicitation application and did not appear to go through the TAB's formal scope change process. The study survey also revealed compelling reasons for the changes and confusion about roles and responsibilities for identifying and initiating scope changes.

**Recommendation:** The TAB and TAC should:

- Work closely with MnDOT Metro State Aid and local Federal Highway Administration (FHWA) staff to define "scope changes" and communicate the need for them to project sponsors.
- Review current procedures, roles, and responsibilities for monitoring the project development process with respect to scope changes and develop policy recommendations.
- Include the scope change definition, formal scope change process, and contact information for the TAB Coordinator and MnDOT Metro State Aid Office in the Regional Solicitation materials and communicate them to project sponsors, including sponsors of MnDOT projects on the state system which do not go through the MnDOT Metro State Aid review process.

**Findings:** 1) A visual inventory was completed as part of this study for 20 "A" Minor Arterial projects partially funded through the Regional Solicitation. 2) Recognize and balance the desire to have a fair and equitable Regional Solicitation process with the constraints put on agencies by federal rules.

**8 Conclusion:** The survey of completed "A" Minor Arterial projects showed the Regional Solicitation is targeting federal funding toward quality improvements to the Regional Highway system.

**Recommendation:** The TAB should consider hosting a showcase of completed projects partially funded through the Regional Solicitation.

**Findings:** The showcase should create opportunities to share project benefits and implementation challenges with elected and appointed officials.



# "A" MINOR ARTERIAL System Evaluation Study



## Other Conclusions and Recommendations

**9 Conclusion:** MAP-21, *Thrive MSP 2040*, the 2040 *Transportation Policy Plan* and other state and regional studies may significantly affect the "A" Minor Arterial system.

**Recommendation:** The Metropolitan Council and TAB should forward information from this study to agencies that are or will be completing studies that affect the "A" Minor Arterial system and should monitor the studies to respond to potential effects.

### Findings:

1) Consider the implications of MAP-21 on the "A" Minor Arterial system and its funding. 2) Examine the feasibility of pooling federal dollars to increase efficiencies on projects. 3) Use the information developed as part of this study and acknowledge the importance of the "A" Minor system to the region. 4) Develop a more defined regional process for identifying future Principal Arterials. 5) There is a small percentage of roadways on the Minor Arterial system that may present opportunities for realignment either by jurisdictional transfer or eligibility for state aid funding.

### Composition of the "A" and "B" Minor Arterial System (Lane-Miles)



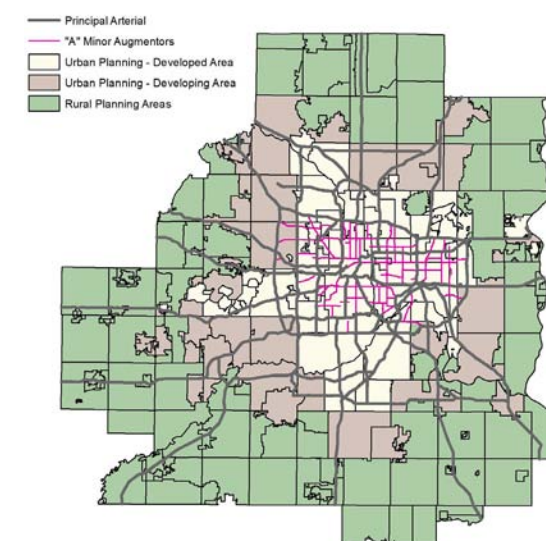
**10 Conclusions:** The "A" Minor Arterial system actively supports economic activity and the transit, freight, bicycle, and pedestrian systems consistent with regional and local policies. Data is not readily available to demonstrate all of these relationships.

**Recommendation:** The Metropolitan Council and TAB should assemble needed data on "A" Minor Arterial freight, bicycle, and pedestrian use and investments. Data should also be assembled for how "A" Minor Arterials support the local and regional economy. The Metropolitan Council and TAB should consider the data and clarify multi-modal policy for the Regional Highway System, if necessary.

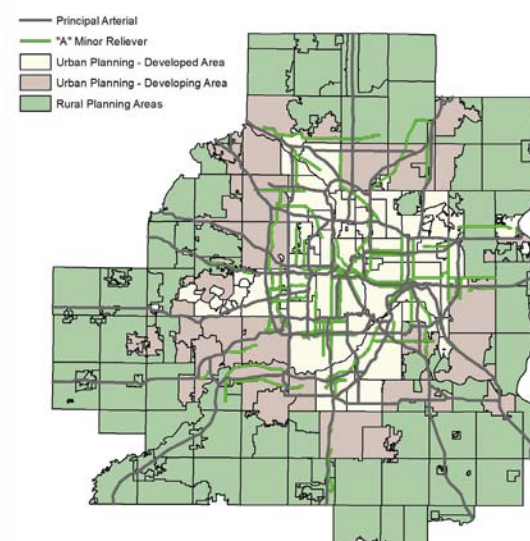
### Findings:

1) Data is not available to help the region understand the role of the "A" Minor Arterials in supporting economic activity and the freight, bicycle, and pedestrian systems. 2) Intuitively the region knows "A" Minor Arterials are important in these areas.

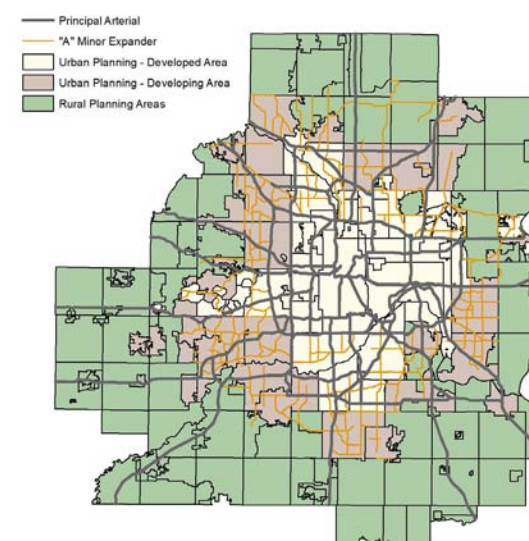
### Regional Development Planning Areas Augmentors



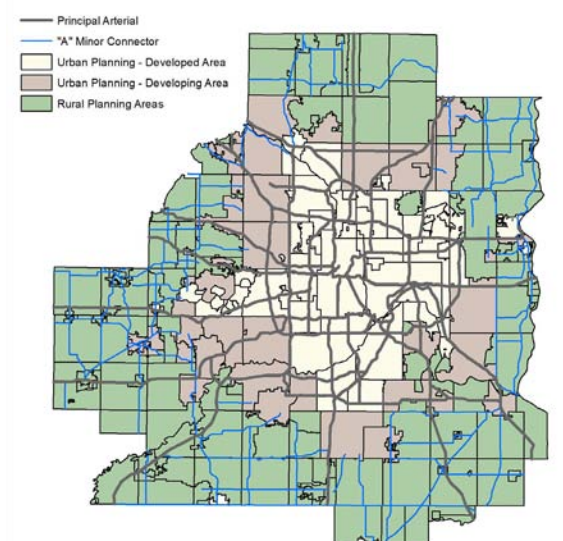
### Relievers



### Expanders



### Connectors



**11 Conclusions:** The analysis performed for this study was possible because the study created a new database combining MnDOT and Metropolitan Council highway information.

**Recommendation:** MnDOT and the Metropolitan Council should make the database available to all agencies and work together and decide how to best maintain the GIS database of highway and administrative and functional classification information developed as part of this study.

**Findings:** For the first time in the region, the study was able to merge and analyze Metropolitan Council data with MnDOT TIS data.

**12 Conclusions:** Considerable effort was required to collect and summarize "A" Minor Arterial funding information at the regional level.

**Recommendation:** The Metropolitan Council and TAB should evaluate if funding data by functional classification, like that provided by this study, are valuable and if they are, should work with agencies to develop and implement a system of collecting and summarizing the information to make it more readily available and consistent for analysis.

**Findings:** This study collected and summarized comprehensive funding data for the "A" Minor Arterial for the first time.

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