



# ***Principal Arterial Study***

Dakota County Planning Commission

April 26, 2018

*Brian Sorenson, Assistant County Engineer*

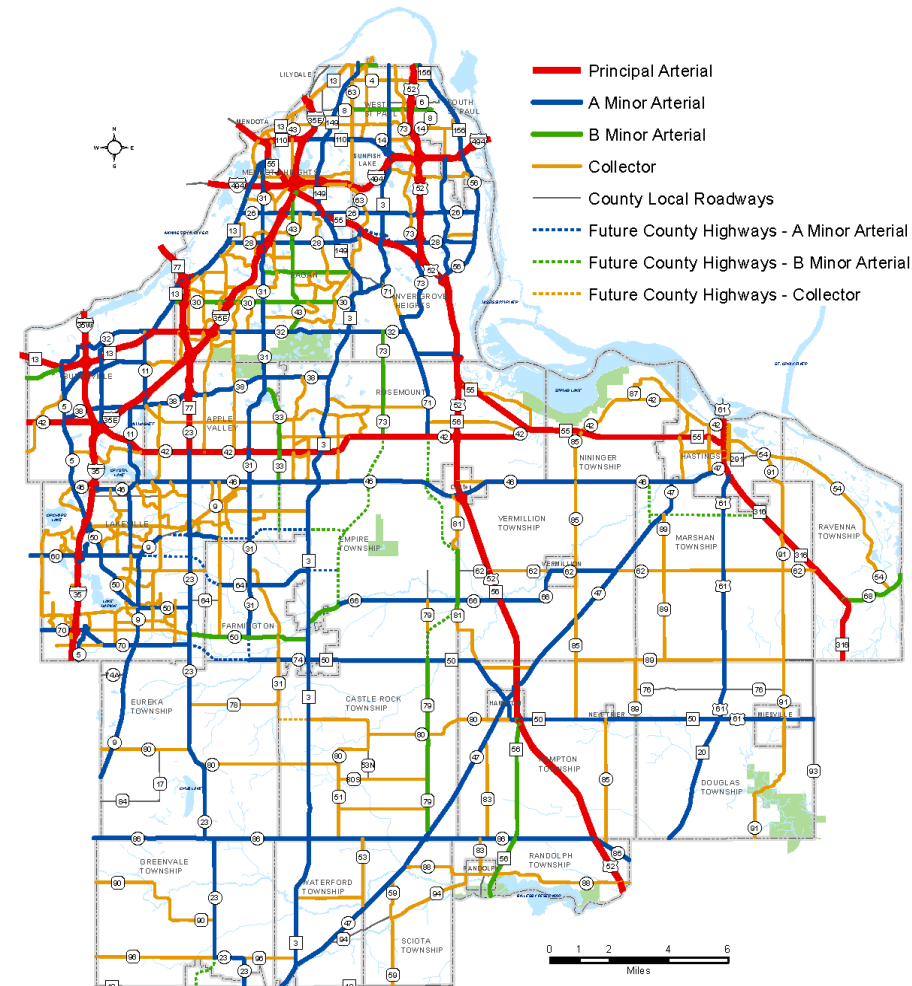
# Principal Arterial Study

- A principal arterial (PA):
  - *Connects the region with the other areas in the state or connects metro centers to regional business concentrations. The emphasis is on mobility as opposed to land access. (Dakota County, 2012; 2030 Transportation Plan).*
  - *Carries the major portion of trips entering and leaving an activity center, as well as the majority of through movements. (FHWA, 2013; Functional Class Concepts, Criteria and Procedures).*
- Dakota County: 18 miles of principal arterial highways (4 percent of County system). PAs carry a large share of VMT (~50% regionally)

# Purpose/Need

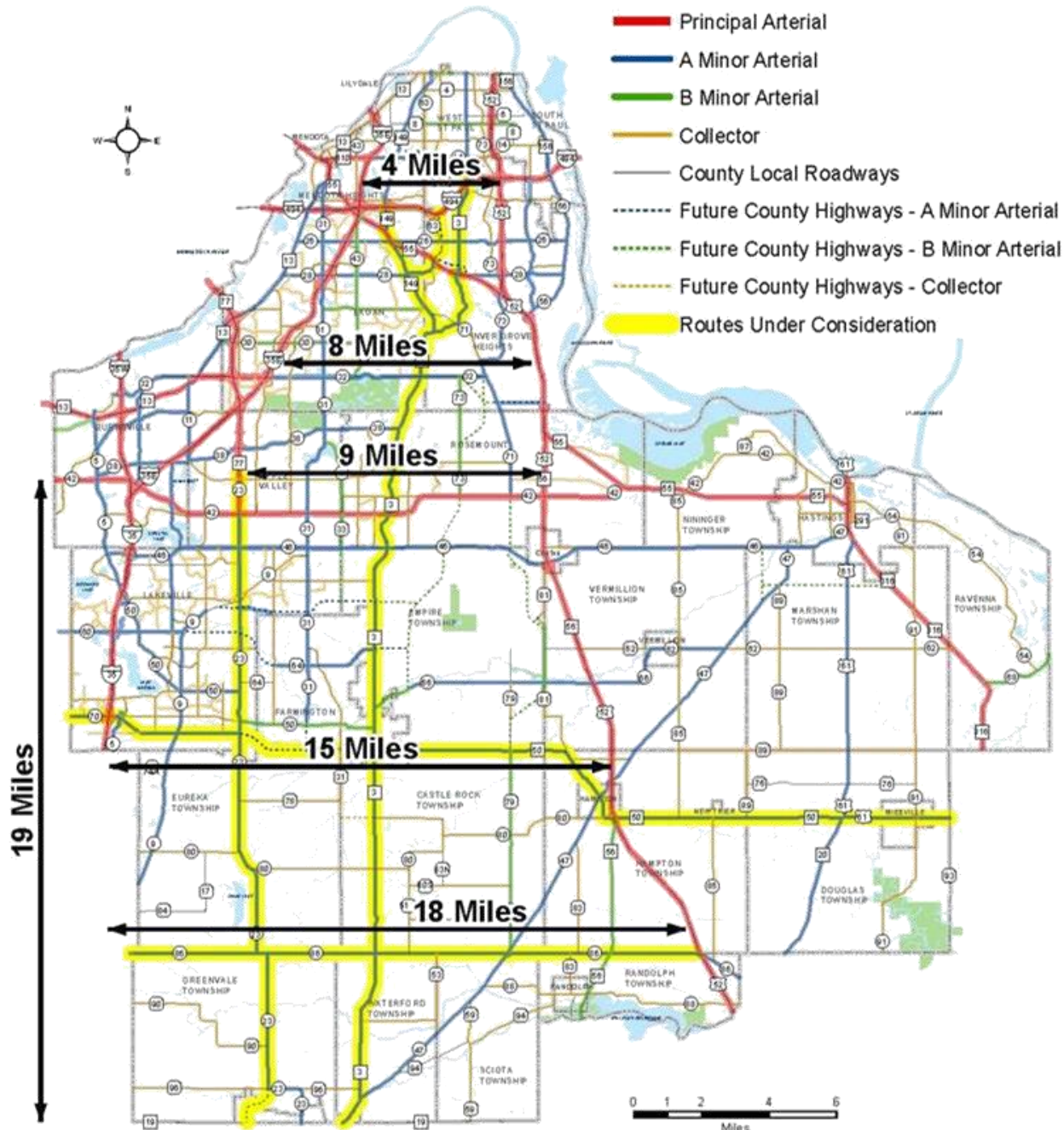
- Dakota County PAs:
  - Well established to the north
  - Not well established in growth areas south of CH 42 & east of I-35
- Met Council guidance on network spacing of PAs:
  - 2-6 miles in developing suburban areas
  - 6-12 miles in rural areas

Functional Classification



Prepared by:  
Dakota County Office of GIS, 1/2012.

# Principal Arterial Gap Map



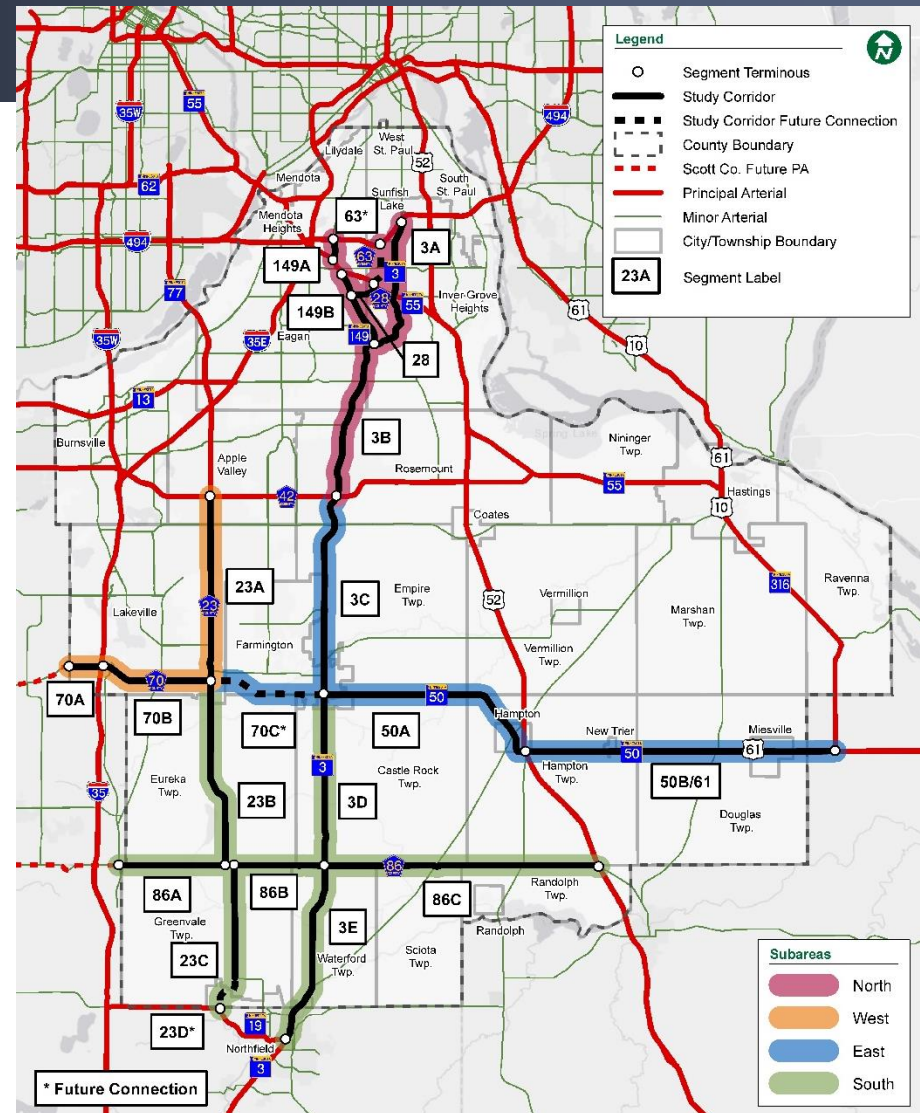
# Purpose/Need

## What if we don't consider new PA segments in Dakota County?

- Incomplete highway system; unplanned network
- Increasing traffic on highways not planned or designed for needs (volumes & speeds)
- Poor mobility; inefficient transportation
- Likely increase in safety problems
- Implications for County/City cost shares

# Approach

- Study Management Team
  - Dakota County, Scott County, MnDOT, Met Council, Townships, Lakeville, Apple Valley, Farmington, Rosemount, Eagan, Inver Grove Heights
- Stakeholder Meetings
- Study outcomes
  - Identify Future PA's, and of those, which may be ready for immediate PA designation
  - Action plans and local guidance



# Evaluation

## Identify the Major Highways to be Studied

(existing state and county highways with good continuity, serving key destinations)

Evaluate segments based on principal arterial (PA) characteristics



### Decision Characteristics

*Should the highway be a PA?*

- **System spacing** – highway location in relation to existing PAs
- **What is the traffic volume?**
- **System Connections and Capacity Role** – connected to existing PAs; serves more traffic than parallel highways
- **Freight Connections** – Is the highway a “truck route”?

### Timing Characteristics

*Is the highway ready to be a PA?*

- **Access spacing** – intersections at least ½ mile apart
- **Posted Speed** – posted for 40 mph or faster
- **Major Intersections** – connects to high-capacity intersections or interchanges
- **Transit** – serves scheduled transit service (urbanized areas only)
- **Right-of-Way** – space to accommodate possible long-term highway improvements
- **Parking** – Is there parking? (Parking discouraged on PAs.)

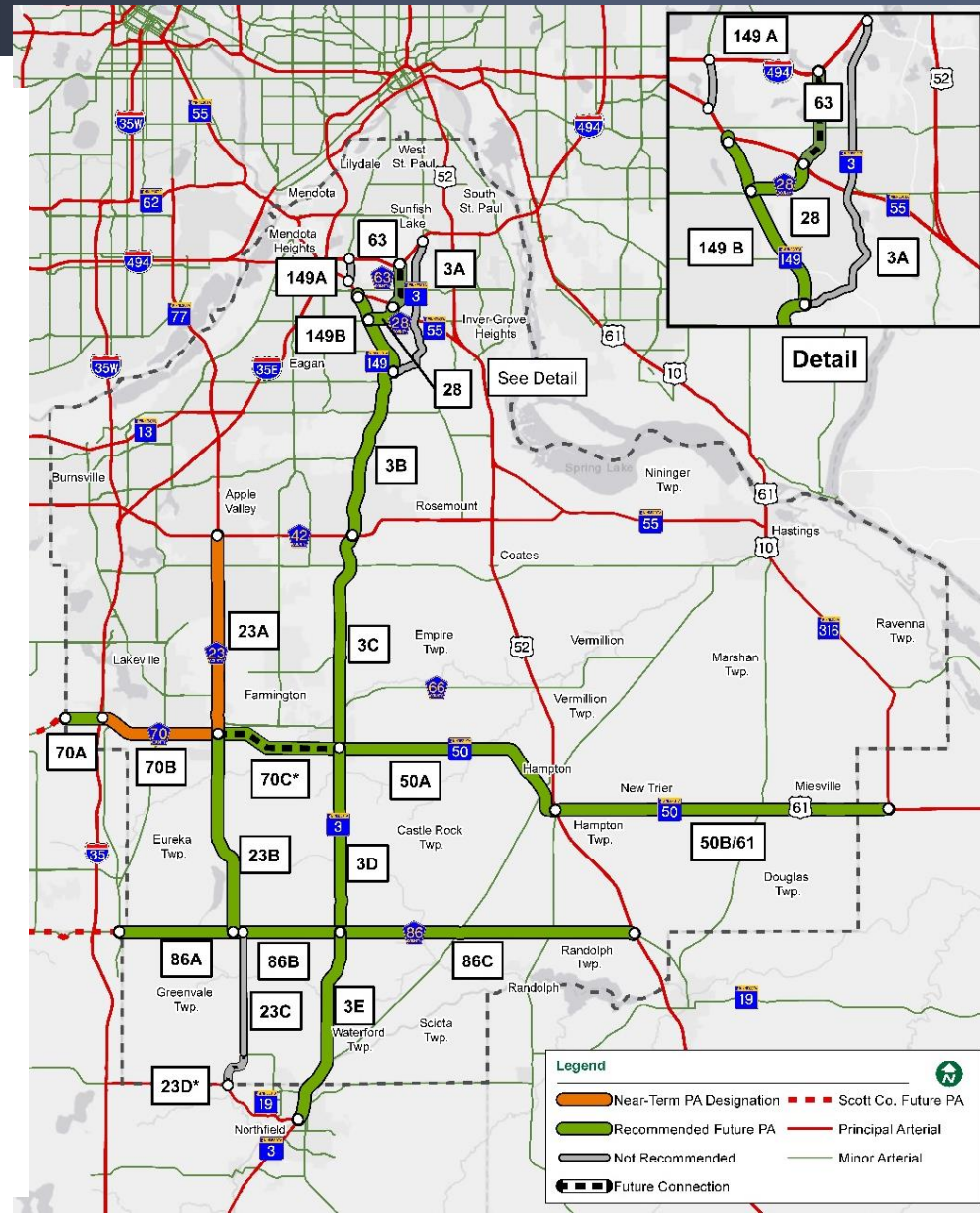
# Evaluation

(See handout)

Subarea	Segment	Setting	Decision Characteristics (Should it be a Future PA?)					Decision Total	Timing Characteristics (Is it ready to be PA?)						Timing Total
			1. System Spacing	2. Typical Volume (2030) <sup>A</sup>	3. System Connections	4. System Capacity Role <sup>B</sup>	5. Freight Connections		6. Access Spacing	7. Posted Speed	8. Intersections	9. Transit	10. Right-of-Way	11. No Observed Parking +Posted	
North	3A	Urban		✓ 23,000	✓	CH 63 (Future)		2/5	✓	✓	✓	✓	✓✓	✓	6/6
	3B		✓	✓ 31,000	✓	TH 77	✓	4/5	✓			✓	Dtown Rosemount	✓✓	3/6
	63 <sup>C</sup>		✓	✓ 41,000	✓	✓	(Planned) <sup>E</sup>	5/5	✓	✓	✓	(Planned) <sup>E</sup>	✓✓	✓	6/6
	28 <sup>C</sup>		✓	✓ 23,000	✓	(Connector)	✓	4/5	✓	✓	✓		✓✓	✓	5/6
	149A			✓ 27,000	✓	CH 63 (Future)		2/5		✓	✓	✓	✓✓	✓	5/6
	149B		✓	✓ 30,000	✓	✓	✓	5/5	✓	✓		✓	✓✓	✓	5/6
West	23A	Urban	✓	✓ 50,000	✓	✓	✓	5/5	✓	✓	✓	✓	✓✓	✓✓	6/6
	70A		✓	✓ 19,000	✓	CH 60		3/5	✓	✓	✓		✓	✓	5/6
	70B		✓	✓ 20,000	✓	CH 60, CH 50	✓	4/5	✓	✓	✓		✓	✓	5/6
East	70C <sup>D</sup>	Urban	✓	✓ 7,700		(Future Connection, Yes) <sup>F</sup>		4/5	✓		(Future Connection, Timing Uncertain) <sup>F</sup>				1/6
	3C		✓	✓ 26,100	✓	CH 31	✓	4/5	✓	✓	✓		✓	✓	5/6
	50A	Rural	✓	✓ 10,200	✓	✓	✓	5/5	✓		✓	na <sup>G</sup>	Hampton	✓✓	3/5
	50B/61		✓	✓ 6,400	✓	✓	✓	5/5		✓	✓	na <sup>G</sup>	New Trier, Miesville	✓✓	3/5
South	3D	Rural	✓	✓ 7,300		✓	✓	4/5	✓	✓		na <sup>G</sup>	✓✓	✓	4/5
	3E		✓	✓ 7,460	✓	✓	✓	5/5	✓	✓		na <sup>G</sup>	✓✓	✓	4/5
	23B		✓	✓ 12,000	✓	✓	✓	5/5		✓		na <sup>G</sup>	✓✓	✓	3/5
	23C		✓	✓ 5,400		✓		3/5		✓		na <sup>G</sup>	✓	✓	3/5
	23D <sup>D</sup>		✓	✓ 9,900	✓	(Future Connection, No) <sup>F</sup>		3/5	✓		(Future Connection, Timing Uncertain) <sup>F</sup>				1/5
	86A		✓	✓ 5,300		✓	✓	4/5		✓		na <sup>G</sup>	✓	✓	3/5
	86B		✓	✓ 11,000		✓	✓	4/5				na <sup>G</sup>	Castle Rock	✓	1/5
	86C		✓	✓ 4,800	✓	✓	✓	5/5		✓	✓	na <sup>G</sup>	✓✓	✓	4/5

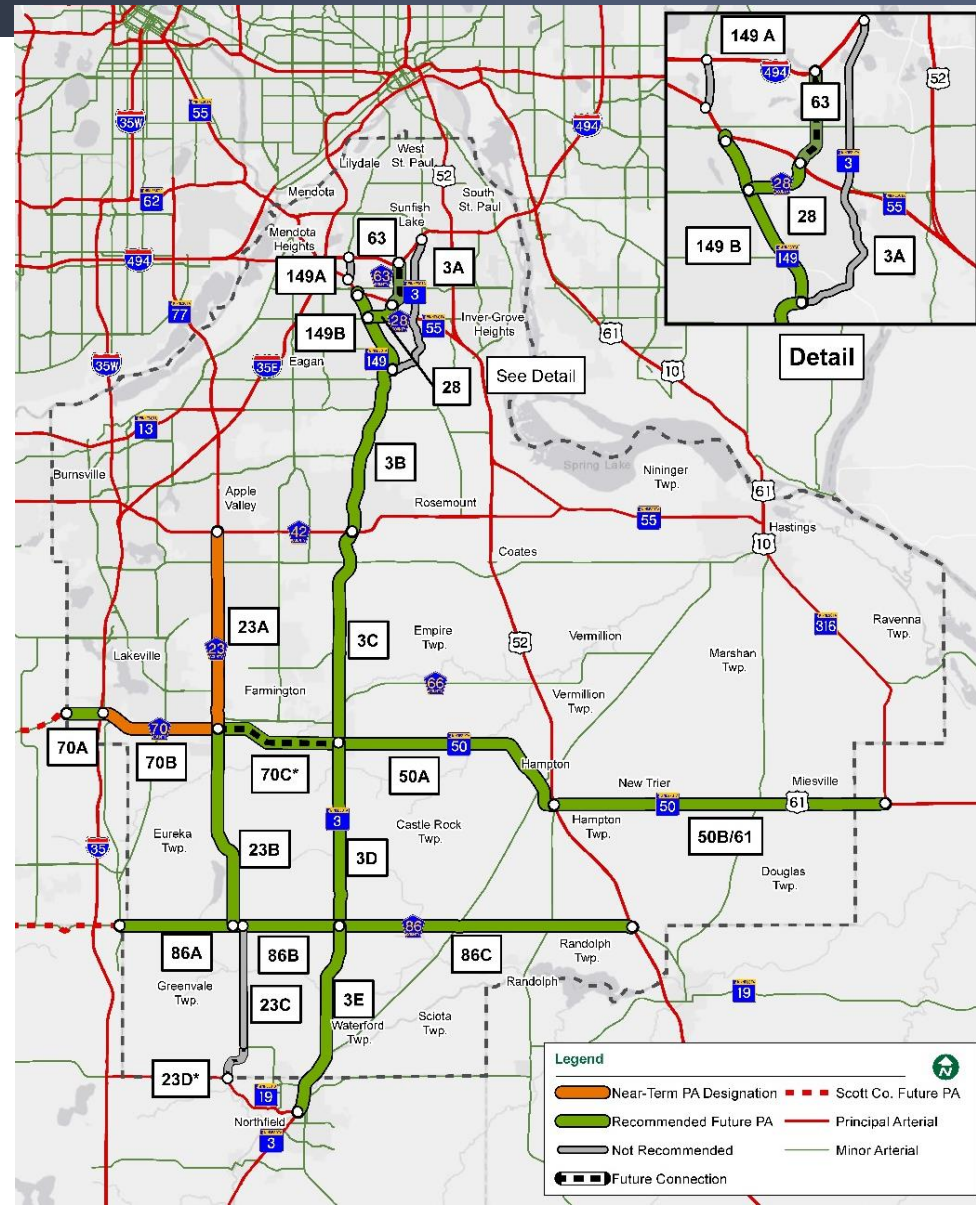
# Findings and Recommendations

- Future PA Designations (Green) Based On Analysis
- Recommended Near-Term PA Designations (Orange)
  - CH 70 from I-35 to CH 23 (Cedar Ave.)
  - CH 23 from CH 42 to CH 70
- Not Recommended
  - TH 149 from I-494 to TH 55
  - TH 3 from TH 149 to I-494
  - CH 23 from CH 86 to Northfield (TH 19)



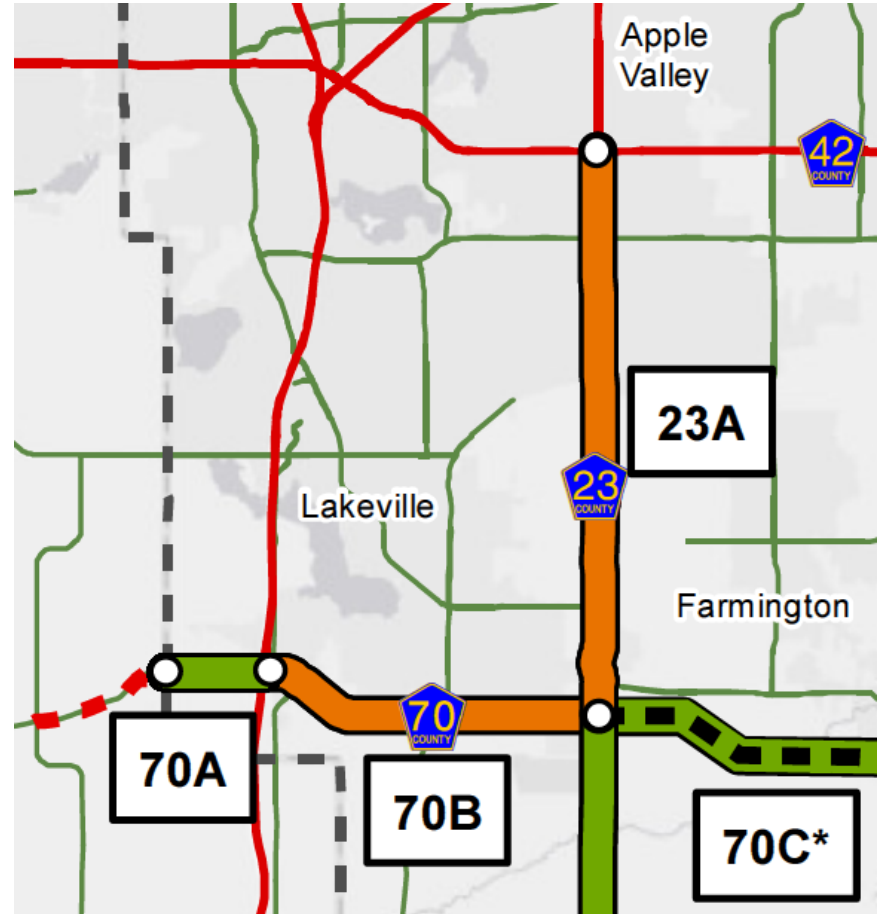
# Implementation

- Future PA's will be managed for access consistent with current PA's
  - More work will need to be done in isolated urban areas such as Rosemount, Farmington, and Miesville
- Future PA's will have the same PA caps in the County cost participation policy
- County will request inclusion in City Transportation Plans (setback implications)



# Implementation

- Dakota County (with support of Apple Valley and Lakeville) will request Principal Arterial designation for CH 23 and CH 70 through the Met Council's Functional Classification change process



# Discussion



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