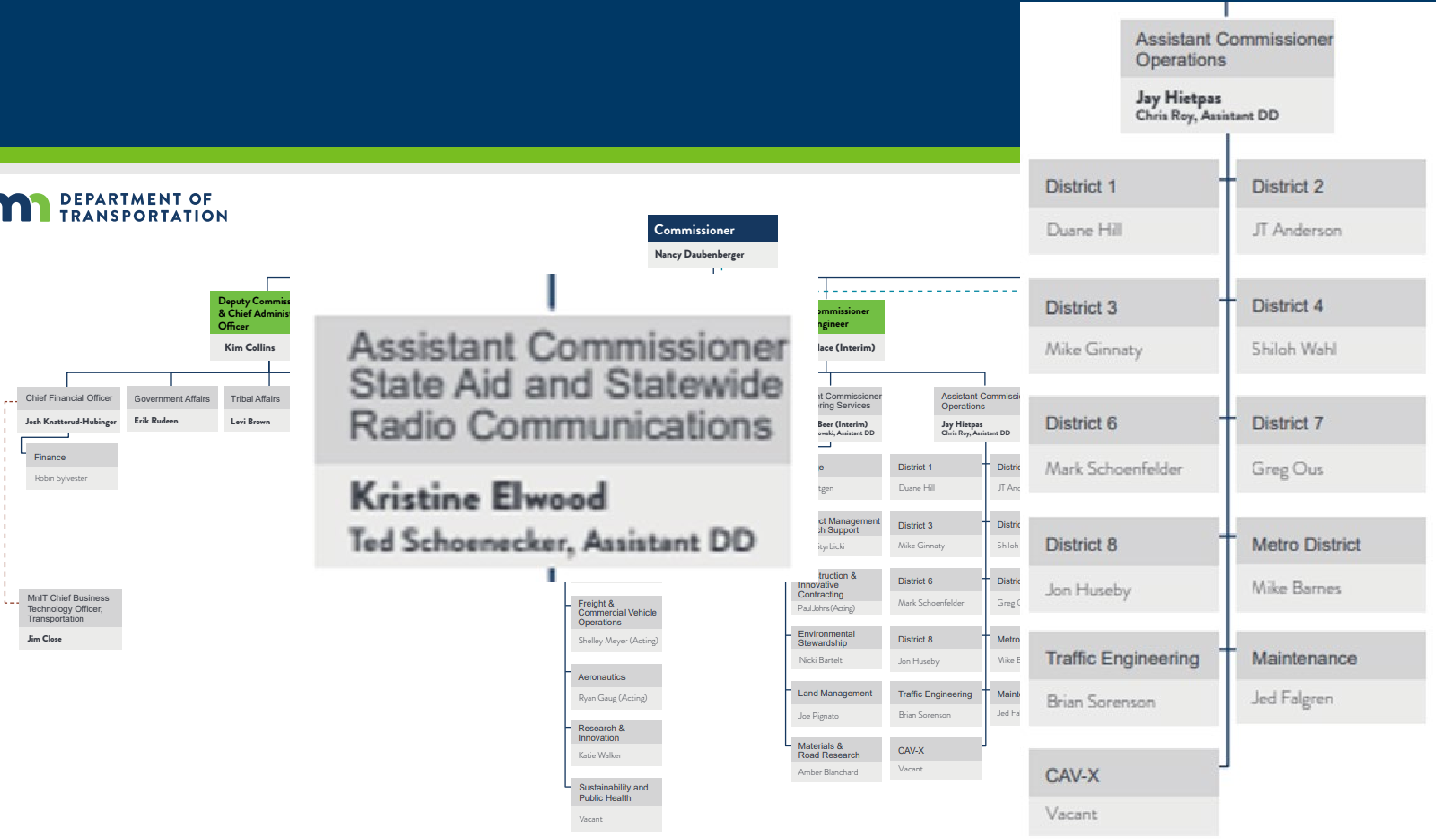
MnDOT, State Aid and the Rules

DEPARTMENT OF TRANSPORTATION



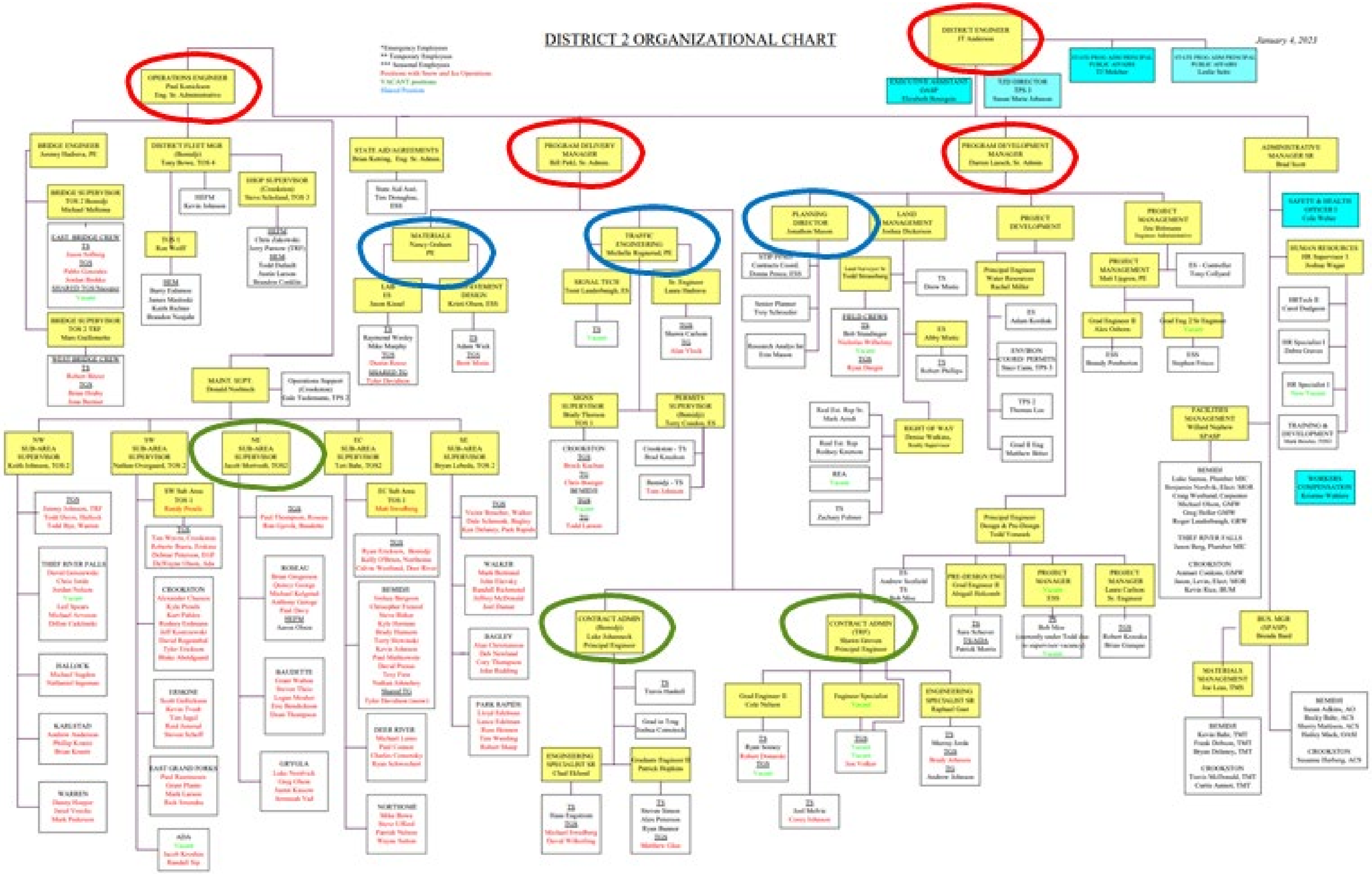
Navigating MnDOT

- History / Background
  - How State Aid fits in
  - District State Aid Engineers Role
  - State Aid Staff
  - Possible interactions
    - Maintenance
    - Area Projects
    - Partnership Projects
    - Permits

Navigating MnDOT

- Approaching MNDOT
  - Pealing back the onion!
  - MnDOT's Org Charts
  - Find the right personality of 5000
    - Choose the right department
      - i.e., Sub- Area Supervisor for Maintenance issues
      - i.e., Traffic
  - Make a connection with your DE (District Engineer)
  - Use State Aid Engineer and Staff to help connect
  - **RELATIONSHIPS**

Navigating MnDOT



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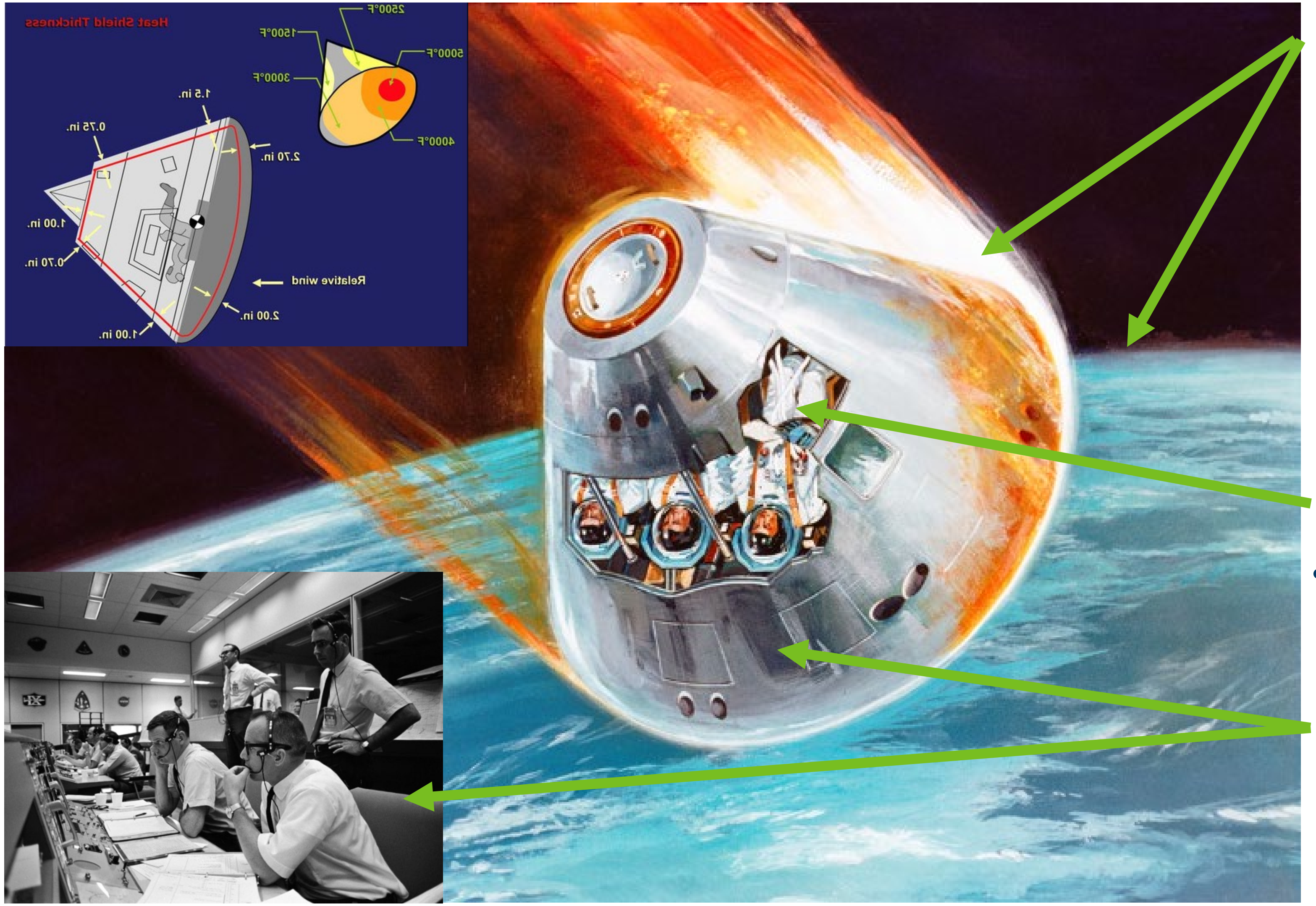
State Aid's Role



State agencies and federal agencies:

- MnDOT
- PCA
- DNR
- FHWA
- FTA
- Army Corp of Engs

Local agencies

- Counties
- Cities
- Townships

State Aid

State Aid's Organization

STATE AID Central Office

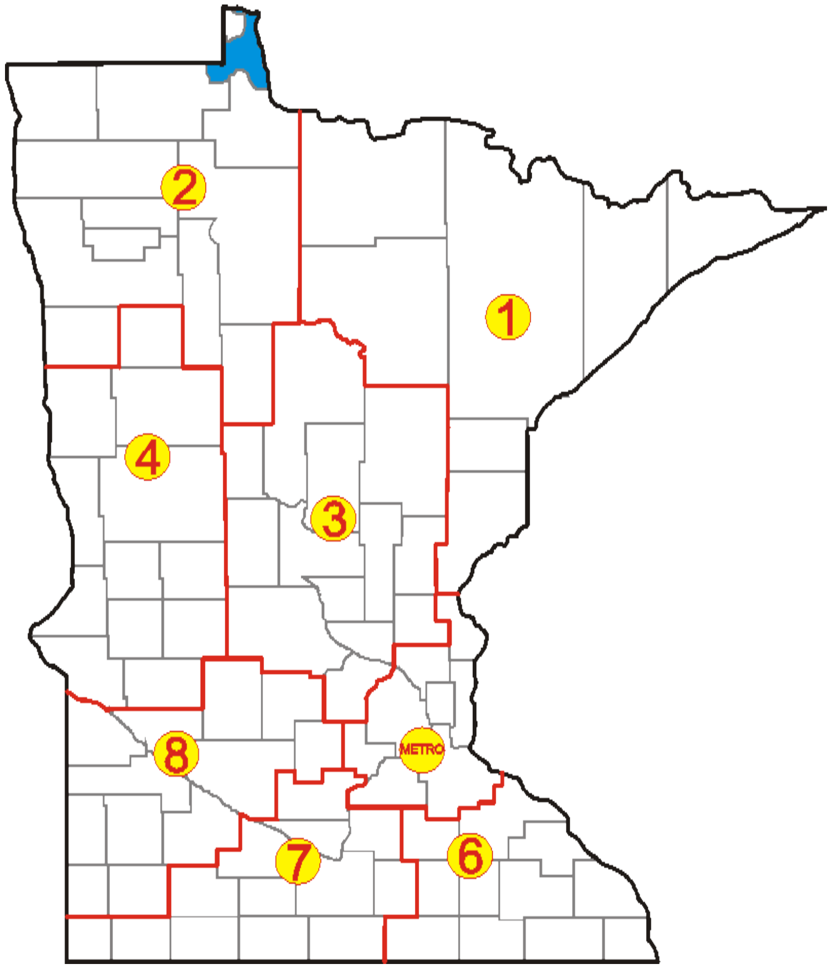
- Administration
- Project Delivery: Federal, State Aid, State Aid Programs, Emergency Relief, Safe Routes to School, and Traffic Safety
- County Needs
- Municipal Needs
- Information Resources

STATE AID Districts

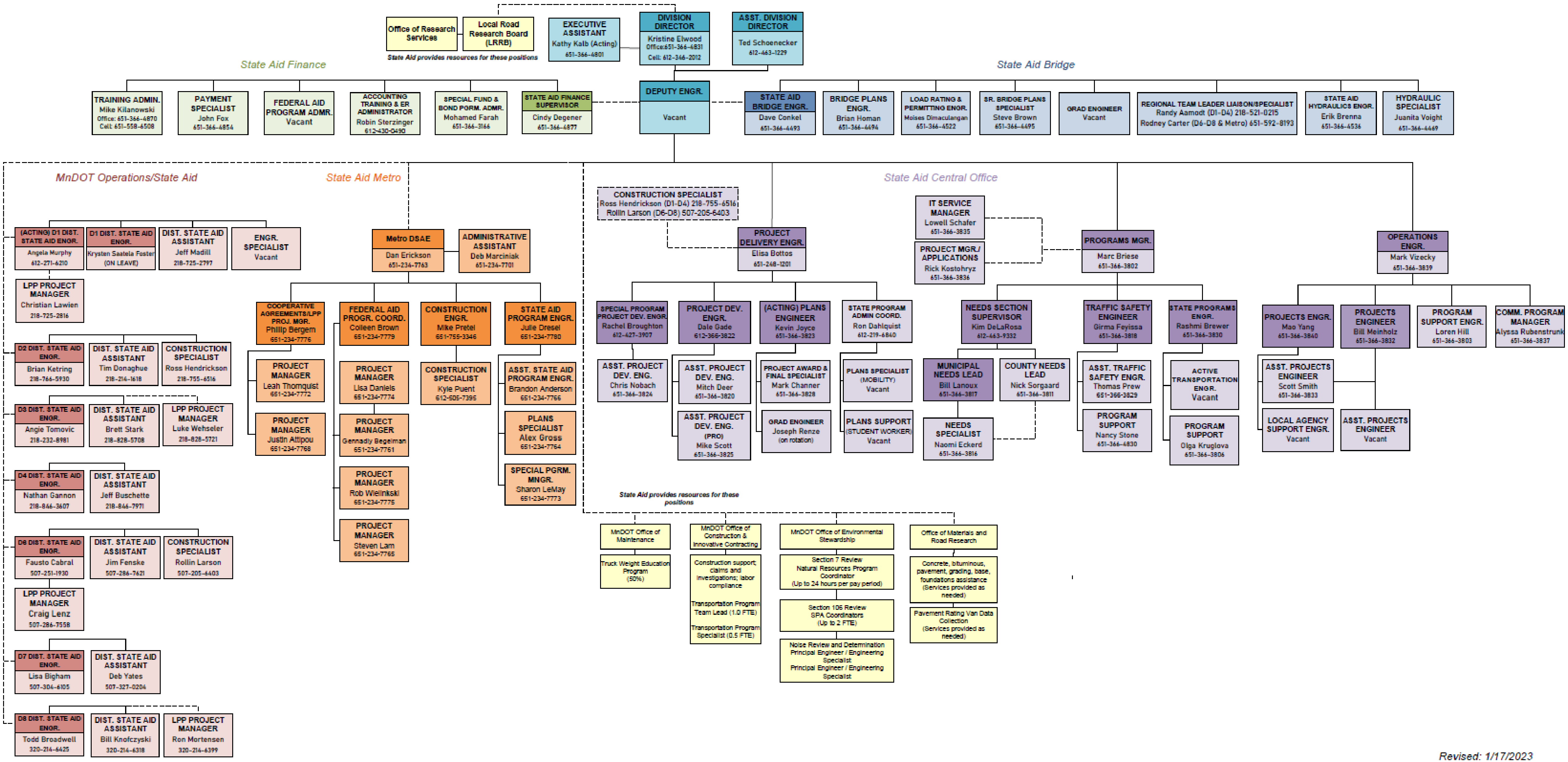
- District State Aid Engineers (DSAE) and District State Aid Assistant (DSAA)

STATE AID Partners

- State Aid Bridge
- State Aid Finance



State Aid Organizational Chart



Revised: 1/17/2023

State Aid Bridge

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Vacant

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Steven Lam
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Revised: 1/17/2023

Funding

- 95% of highway user funds are distributed as follows:
  - 62% to the trunk highway fund
  - 29% to county state aid highway fund
  - 9% to the municipal state aid fund
- The remaining 5% is set aside for these three funds:
  - Town Road Account
  - Town Bridge Account
  - Flexible Highway Account
- For the most up-to-date funding, see our yearly HUTDF pamphlet.

What’s included in the state aid system?

- County State Aid Highway (CSAH)
  - 87 counties
    - 8 metro counties and 79 counties in greater Minnesota
- Municipal State Aid Street (MSAS)
  - 148 cities of population greater than 5,000
    - 84 metro cities and 64 cities in greater Minnesota
- Town road and bridge
- Jurisdictional Transfers (Turnbacks)

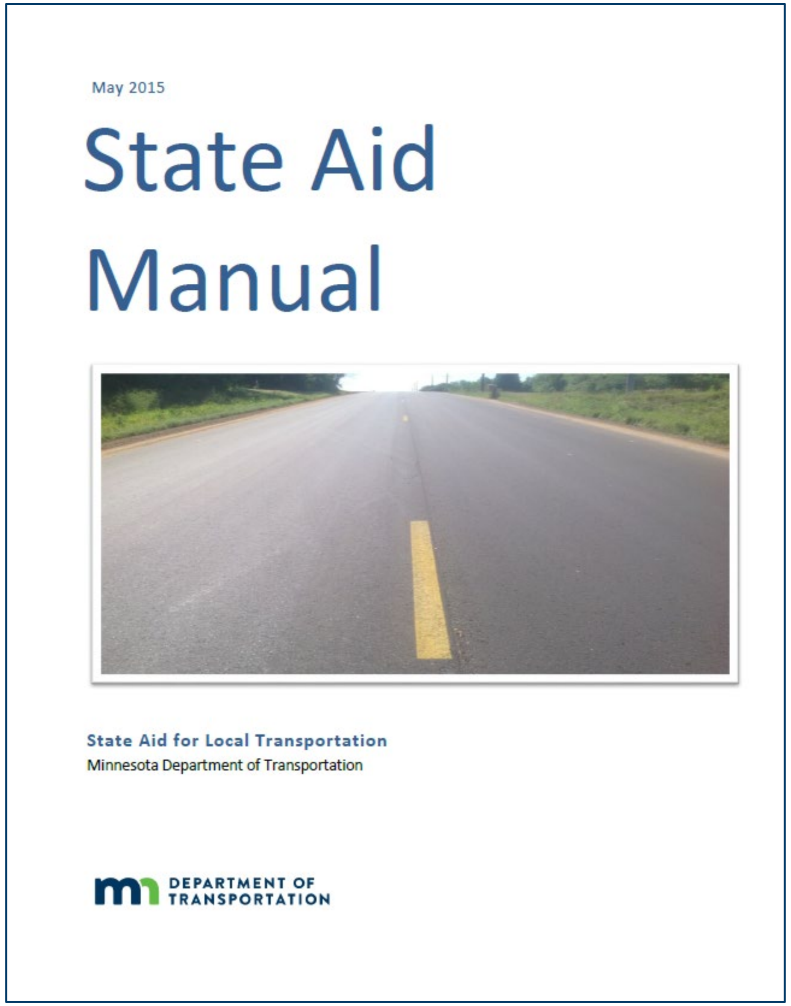
Project involvement

State Aid should be involved in the following projects:

- Projects on the state aid system
- Locally proposed projects with federal funding
- Municipal agreement projects involving the State Aid system
- Trunk Highway projects with state aid system involvement
- Locally initiated cooperative agreement projects on state highways

State Aid Manual

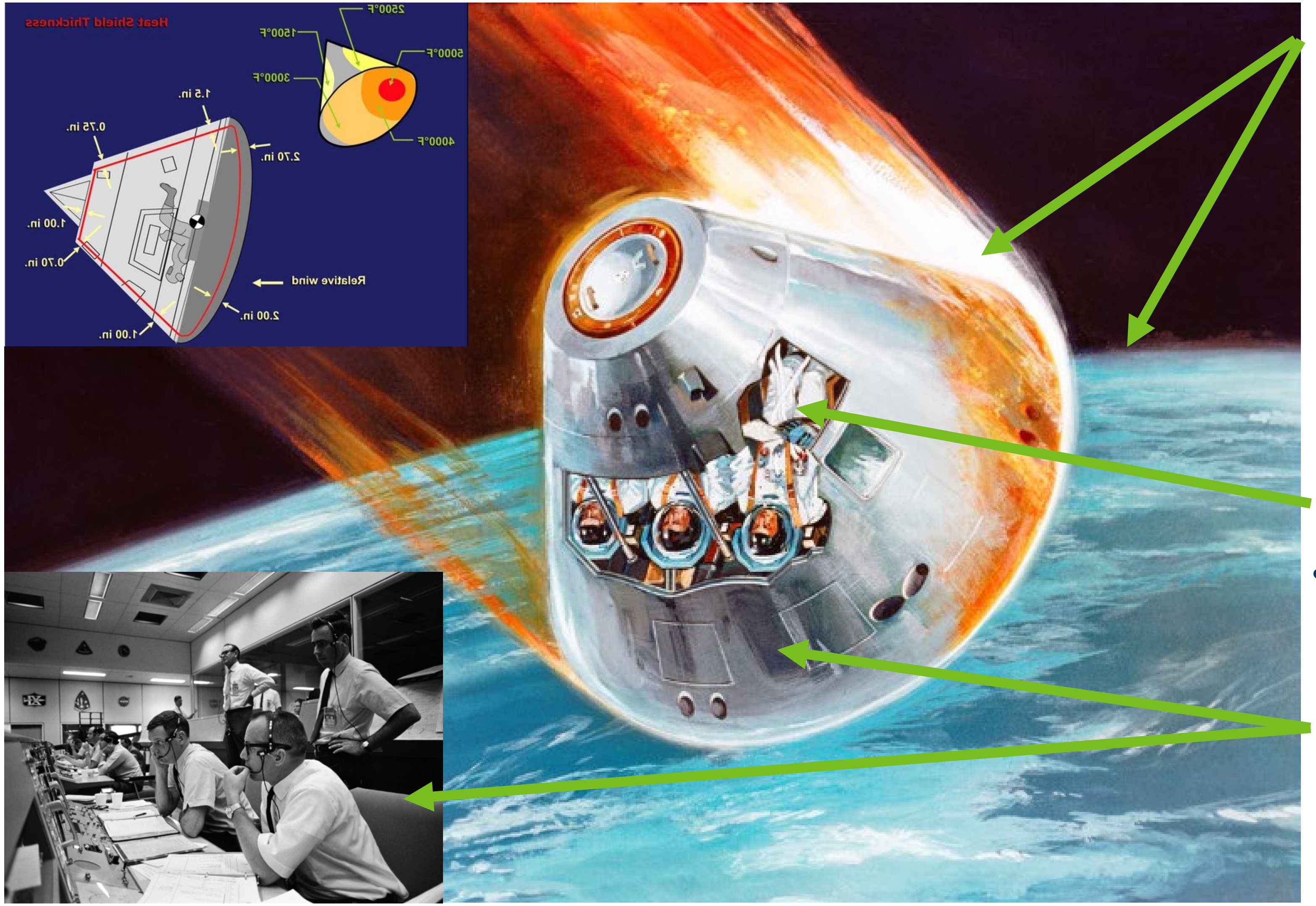
- **The State Aid Manual is your go to document for answers. It should be your first point of reference if you have any questions.**
  - It provides instructions for state aid and federal aid projects
  - Gives links to forms and websites related to specific category areas
  - Manual is up-to-date and is updated as changes occur or updates are necessary



How is State Aid governed?

- State Aid is governed by two entities:
  - Screening Boards
  - Rules Committee
- In addition, the Local Road Research Board (LRRB) governs research conducted with state aid funds.

State Aid’s Role



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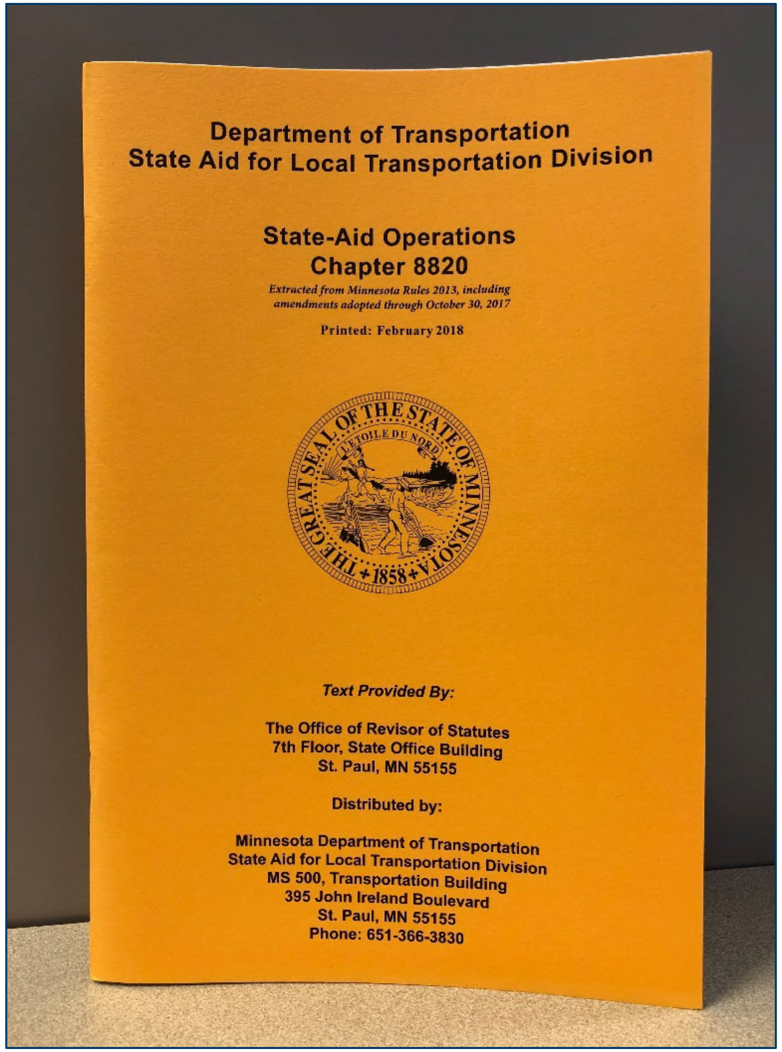
State Aid

State Aid Operations

- MN Constitution (Article X)
- MN Statutes (Chapter 162)
- MN Rules (Chapter 8820)
- State Aid Manual (SAM)
- FHWA Stewardship Plan

Minnesota Rule Chapter 8820 (State Aid Design Standards)

- Chapter 8820 was established 1957
- Carry the force of law
- It's more than just design standards
- It's maintained by the system it governs



Page number

Chapter . Section

Subp. 3. **ADT.** "ADT" means average daily traffic, which is computed by dividing the total number of vehicles traveling over a segment of roadway in one year by 365.

Subp. 4. **Advance.** "Advance" means the authorized expenditure of future funds from any funds available for use on an approved state-aid project. Advanced funds will be repaid to the appropriate account from subsequent apportionments.

Subp. 5. **Agency agreement.** "Agency agreement" means an agreement between a city, county, or other governmental unit and the commissioner by which the city, county, or other governmental unit may appoint the commissioner as the agent, with respect to federally funded projects, to accept and receive federal funds made available for projects and to let contracts or provide oversight to city, county, or other governmental unit contracts, in accordance with law for the construction or improvement of local streets or roads or other construction projects.

Subp. 6. **Bicycle lane.** "Bicycle lane" has the meaning given it in Minnesota Statutes, section 169.011, subdivision 5.

Subp. 7. **Bridge.** "Bridge" has the meaning given it in part 8810.8000, subpart 2.

Subp. 8. **Bridge rehabilitation.** "Bridge rehabilitation" means (1) the partial reconstruction of an existing bridge to meet current design criteria and construction standards or (2) a project that fixes the deterioration in the structure or improves the geometrics or load-carrying capacity, but may not necessarily provide improvement to meet new design standards.

Subpart

Subp. 9. **City.** "City" means a statutory or home rule charter city.

Subp. 10. **City engineer.** "City engineer" means a licensed professional engineer employed as the city engineer or the director of public works, city engineer of each urban municipality.

Subp. 11. **City of the first class.** "City of the first class" has the meaning given it in Minnesota Statutes, section 410.01.

Subp. 12. **City streets.** "City streets" are those streets under the jurisdiction of an urban municipality, and do not include county highways or trunk highways within the urban municipality.

Subp. 13. **Clear zone.** "Clear zone" is the distance measured from the edge of the outside through-traffic lane, which must be free of fixed objects and meet or exceed the minimum in-slope dimensions indicated in the design charts of this chapter.

Subp. 14. **Commissioner.** "Commissioner" means the commissioner of the Minnesota Department of Transportation, or a designated representative.

Subp. 15. **County highway engineer.** "County highway engineer" means a licensed professional engineer employed as the county highway engineer, county engineer, or the director of public works, county engineer of each county.

Subp. 16. **County-municipal account.** "County-municipal account" means a separate record of that portion of the county state-aid highway funds allocated for expenditure on county state-aid highways within cities having less than 5,000 population.

Definitions, pgs 5 and 6

Subp. 31a. **Rural.** "Rural" means a roadway that includes ditches and is located in an area that is not presently, nor will it be in the foreseeable future, sufficiently developed to warrant use of an urban design.

Subp. 37. **Suburban.** "Suburban" means an area both in a subdivided area or an area in a detailed development process, and where physical restraints are present that prevent reasonable application of the rural design standards.

Subp. 43a. **Urban.** "Urban" means a roadway that includes a curb and gutter and is, or will be in the foreseeable future, located in an area that is sufficiently developed to warrant an urban design.

Goal => Design Tables

Goal => Design Tables

8820.9920 MINIMUM DESIGN STANDARDS; RURAL AND SUBURBAN UNDIVIDED; NEW OR RECONSTRUCTION PROJECTS.

8820.9926 MINIMUM DESIGN STANDARDS: RURAL AND SUBURBAN UNDIVIDED; RECONDITIONING PROJECTS.

8820.9936 MINIMUM DESIGN STANDARDS, URBAN; NEW OR RECONSTRUCTION PROJECTS.

8820.1400 Maintenance, Construction…pg 10

Subp. 3. **Urban maintenance apportionment account.** Twenty-five percent of the total allocation, if requested by the urban municipality before December 16 preceding the annual allocation, or $1,500 per mile of improved municipal state-aid streets, is the minimum allotment for the general maintenance of the approved state-aid system. The commissioner may modify any allotments to the urban maintenance account to finance the amount needed to pay the interest due on municipal state-aid bonds and to accommodate the screening board resolutions pertaining to trunk highway turnback maintenance allowances.

Those municipalities desiring to receive an amount greater than the established minimum, not to exceed 35 percent of the total allocation, shall file a request with the commissioner before December 16 preceding the annual allocation and shall agree to file a detailed annual maintenance expenditure report at the end of the year.

8820.1500, Sub 6. Construction Funds…pg 12

Subp. 6. **Engineering costs.** Requests for reimbursement of project development costs may be submitted at any time after the costs have been incurred. The commissioner, upon receipt of this request supplemented by documentation as may be requested, shall authorize the reimbursement for actual documented project development costs. Requests for reimbursement must be processed at least semiannually, except that payments requested with the report of state-aid contract, report of final estimate, force account partial payments, or force account final payments must be made at the time the reports are processed.

Requests for payment of actual construction engineering costs must be documented and submitted along with the final estimate report. The commissioner, upon receipt of this request, shall authorize a construction engineering payment.

The sum of the project development and construction engineering charges must be limited to 25 percent of the eligible construction costs. Limitations for project development costs paid before a contract is awarded must be based upon the engineer's estimate of the eligible construction costs.

8820.1500, Sub 12. Construction Funds…pg 14

Subp. 12. **Municipal state-aid funds; county or trunk highway projects.** The governing body of an urban municipality desiring to use a portion of its state-aid funds for improvements within its boundaries on a state trunk highway or county state-aid highway, must have the plans approved by the state-aid engineer before bids are opened for these purposes. The extent of state-aid participation must be determined on the same basis as a regular municipal state-aid highway project, including engineering and right-of-way costs.

8820.2800, Sub 2a. Construction Funds…pg 19

Subp. 2. **Eligibility for funding.** A project is eligible for funding under the following conditions, as applicable:

A. Plans and estimates for each state-aid construction project must be submitted for review. Each plan must show the subsequent stages required for the completion of the improvement, portions of which may be covered by later contracts or agreements. Only those projects for which final plans are approved by the state-aid engineer before opening bids are eligible for state-aid construction funds, except as provided in subpart 8.

8820.3100 Subp. 10, General State Aid Limits…pg 22

Subp. 10. **Landscaping.** The extent of state-aid participation in landscaping is limited to five percent of the total construction allocation in any year. Landscaping includes, but is not limited to:

A. items such as trees when exceeding two-to-one replacement, shrubs, ground covers, and mulch; and

B. retaining walls, fences, and other landscaping appurtenances when only decorative in function.

The extent of participation also includes excess costs for functional but ornamental features such as, but not limited to, ornamental fences and railings, brick pavers, and aesthetic surface treatments. Excess cost is the cost in excess of a functional, standard item. Seeding, with mulch and fertilizer, and sodding are considered normal grading items.

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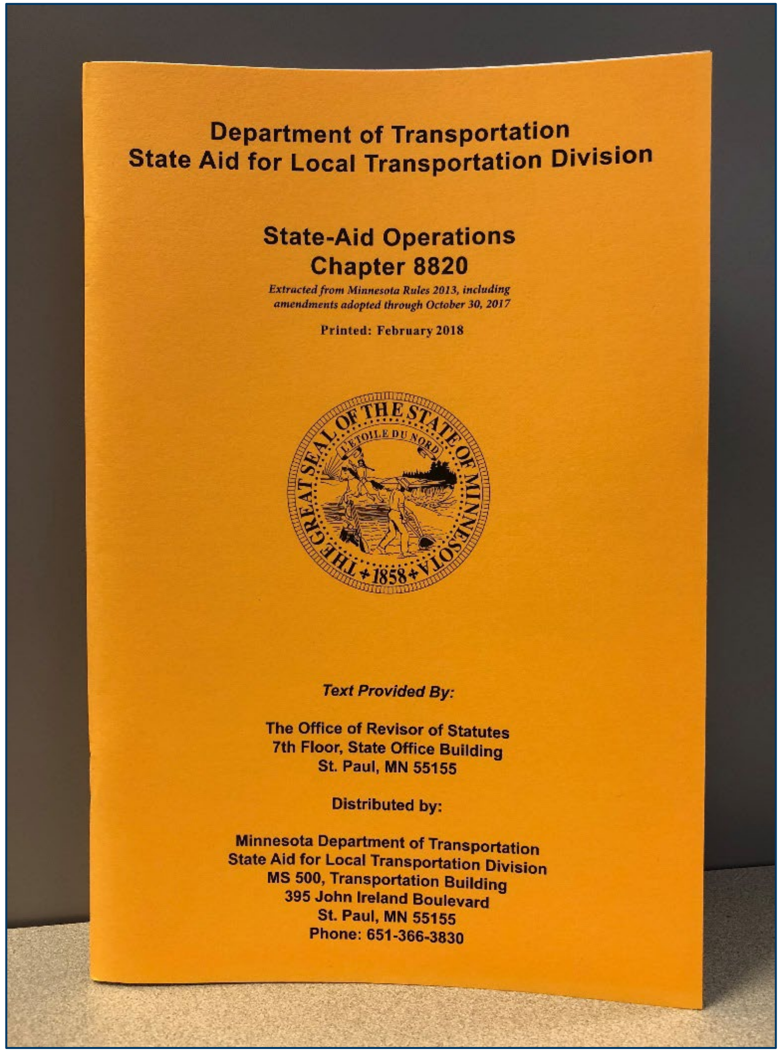

State Aid Rules Background

Why is change needed?

- External Influence (Political/Legislative)
- SA Operations
- Changing Standards (or push to change)
- Appropriate Application
- Less value/importance of professional engineers
- Maintain a “safe” system
- Unknowns – what if there are no Rules/Standards?

Potential changes?

- Way State Aid Rules/Standards are presented
- Process for updating Rules/Standards
- Education/Outreach for all audiences
- Engineer Training

Approaches to potential changes?

- Two-Day Training for engineers
- Repackage the Rules/Standards
- Review/Update Stakeholder Input Process

Committee Formation

- As a result of the recent update, the State Aid Design Advisory Committee was established
  - To continue to support design flexibility.
  - To maintain the engineering standards.
  - Guide change through research. Not to directly make changes to rules.

Committee Role

Why is change needed?

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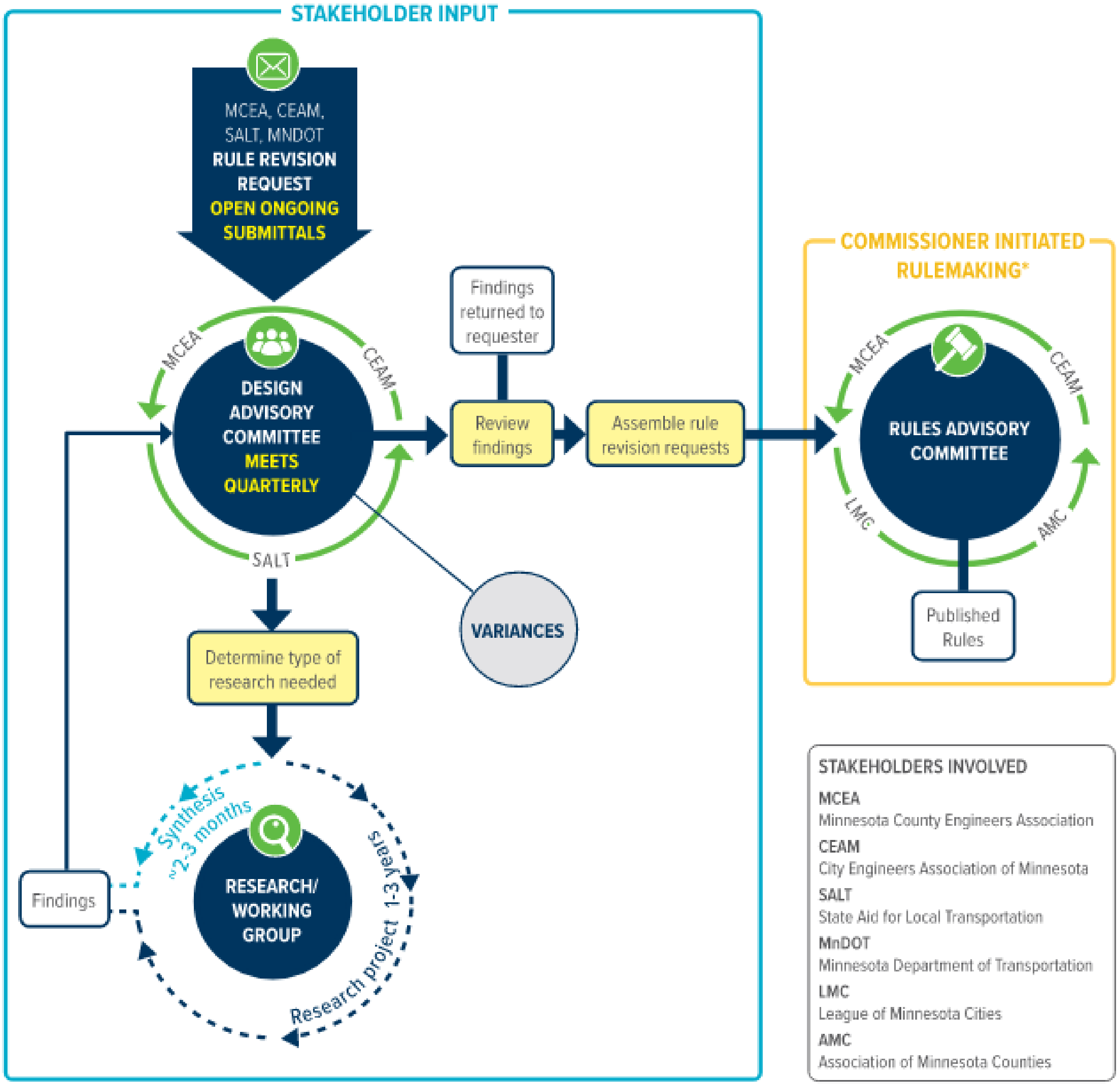
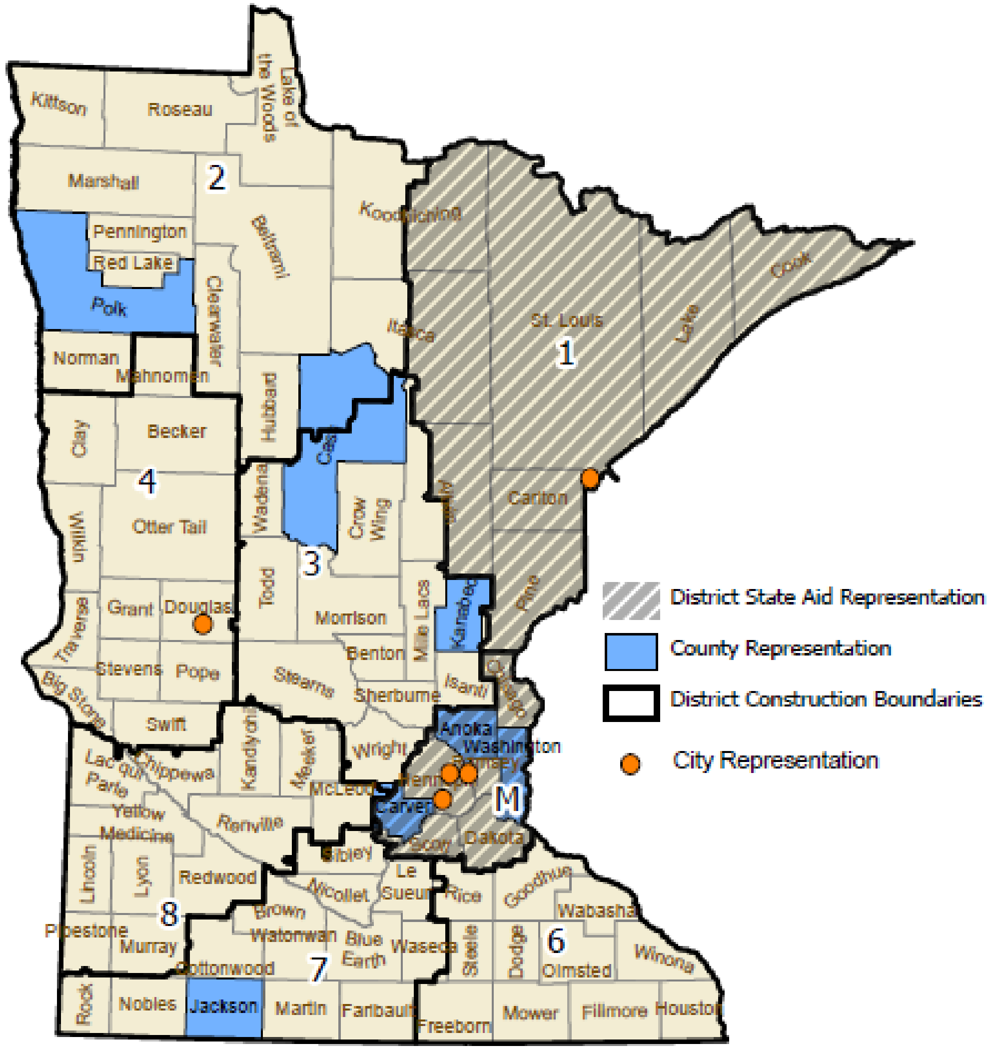

STAKEHOLDER INPUT
MCEA, CEAM, SALT, MNDOT
RULE REVISION REQUEST
OPEN ONGOING SUBMITTALS
MCEA
CEAM
SALT
DESIGN ADVISORY COMMITTEE
MEETS QUARTERLY
Findings returned to requester
Review findings
Assemble rule revision requests
VARIANCES
Determine type of research needed
Synthesis ~2-3 months
Research project 1-3 years
RESEARCH/ WORKING GROUP
Findings
COMMISSIONER INITIATED RULEMAKING*
MCEA
CEAM
LMC
AMC
RULES ADVISORY COMMITTEE
Published Rules
STAKEHOLDERS INVOLVED
MCEA
Minnesota County Engineers Association
CEAM
City Engineers Association of Minnesota
SALT
State Aid for Local Transportation
MnDOT
Minnesota Department of Transportation
LMC
League of Minnesota Cities
AMC
Association of Minnesota Counties

Committee Representation

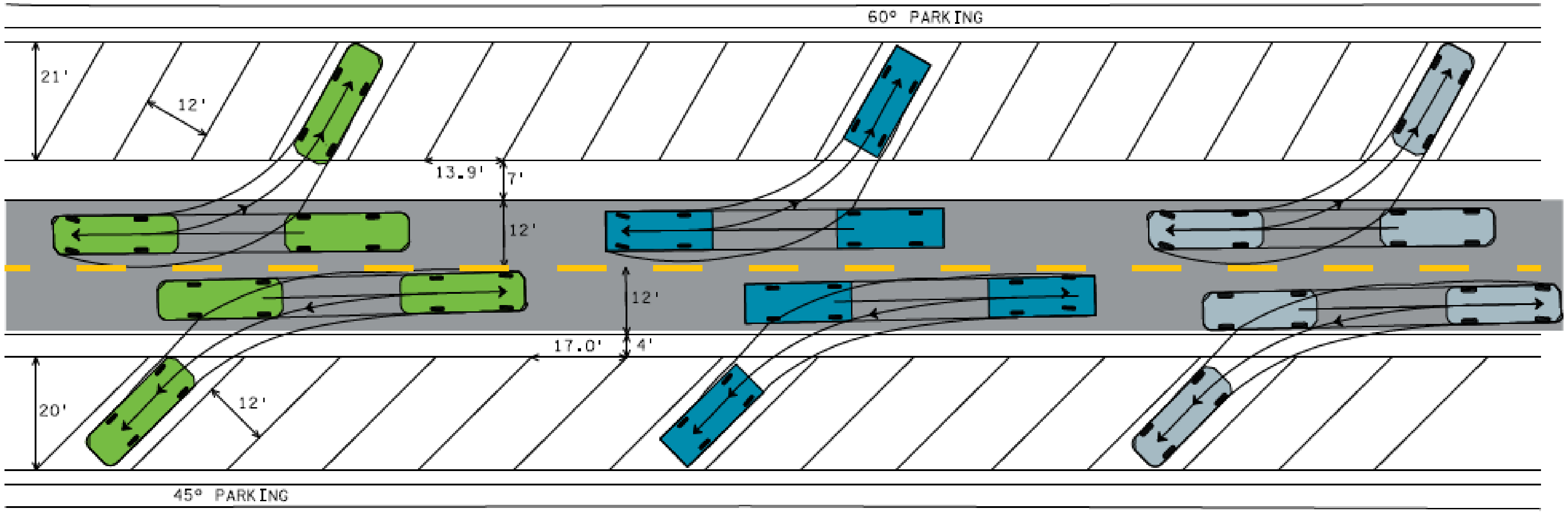
- Led by SALT and supported by a consulting team
- Volunteers
  - 19 total members
  - 8 County, 5 City (1 City of the First Class), 5 State Aid, 1 Consultant
    - 9 rural and 4 urban members



Back-in Angle Parking – Technical Information

Technical /Design - Turning Template

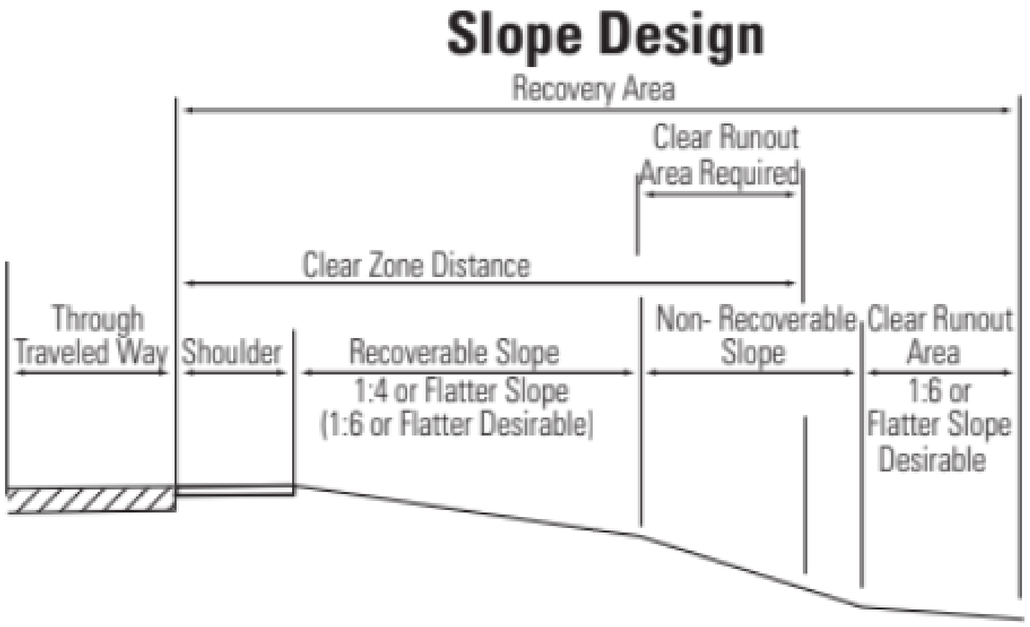
Turning radius templates were used to determine the minimum turning radius needed for back-in angle parking. Three different vehicle types were tested for 45 and 60-Degree angle parking, with 12 foot wide parking stalls. **The distance from the centerline of the roadway to the edge of the parking stalls is the critical minimum distance needed to avoid vehicles encroaching into opposing traffic.** If a bike lane is needed, reference the MnDOT Bicycle Facility Design Manual.



Vehicle Type	Height	Length	Width	Radius
Ford Transit 256 (2019)	9.12′	22.17′	6.98′	25.3′
Passenger Car (AASHTO)	4.30′	19.00′	7.00′	23.8′
Ford F-150 Crew Cab (2015)	6.44′	20.31′	6.66′	26.5′

Rural and Suburban Roadway Approaches Further Look on 1V:4H vs. 1V:6H

Considerations



- The cost to implement 1V:4H is less than 1V:6H.
- 1V:6H requires a safety apron; 1V:4H can use a standard apron.
- 1V:6H slopes can be more cost-effective than 1V:4H slopes at traffic volumes between 2,000 and 4,000 vehicles per day (vpd).[4]
- Local highways (all roads not considered to be freeways, arterials or collector highways), demonstrated the greatest benefit in slope flattening. The findings indicate a high reduction in accident costs when flattening the baseline slope. That said, the study also found that the accident cost for the 1V:4H slope was 2X the 1V:6H slope. The results state this was due to a calibration methodology used in updating the Safety Index (SI). Nevertheless, the study still recommends the slope should be made as flat as possible.[5]
- Slope Types (FHWA)[6]
- Recoverable Slopes: 1V:4H or flatter
- Traversable, but non-recoverable: between 1V:3H and 1V:4H
- Non-recoverable: Steeper than 1V:3H

State Aid Operations Chapter 8820 **Visualization Tool**

CLICK HERE TO BEGIN

i

State Aid Operations – Chapter 8820

Prepared by the State Aid Design Advisory Committee

The Committee is led by the Minnesota Department of Transportation (MnDOT) Division of State Aid for Local Transportation (SALT) and supported by a consulting team.

Anoka County, County Engineer
Carver County, County Engineer
Cass County, County Engineer
Jackson County, County Engineer
Kanabec County, Public Works Director
Polk County, County Engineer
Washington County, Traffic Engineer
City of Alexandria, Consultant Engineer
City of Coon Rapids, City Engineer
City of Duluth, City Engineer
City of St. Louis Park, Engineering Director
City of Roseville, City Engineer
MnDOT District 1, District State Aid Engineer
MnDOT Metro, District State Aid Engineer
MnDOT Metro, District State Aid Assistant
SALT, Pre-Construction Coordinator
WSB, Consultant City Engineer

Produced by SRF Consulting

SRF

August 2021

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St. Paul, MN 55155

DEPARTMENT OF TRANSPORTATION

Variance

- Sometimes the design does not meet State Aid Rules. If so, there is a Variance process.
- If you need to seek a Variance
  - Variances are addressed in 8820.330.
  - Variances are also addressed on the State Aid Variance webpage and State Aid Manual.
  - Check in with your DSAE early. There may be alternative solutions other than a Variance.
  - The Variance Committee meets quarterly. Review your need for a Variance early in your project.

Questions?

Contact your DSAE.