



**Civil Engineering
Highway Transportation Prospective**



Anoka County
MINNESOTA

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What is Civil Engineering?



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60'



rip-rap prevents erosion
sidewalk with culvert
infiltration into soil

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Civil Engineering

Who Benefits from Civil Engineering?





Education & Experience

Jerry Auge, PE

- U of M Bachelor of Science – Civil Engineering 1995
- U of M Master of Science – Infrastructure Systems Eng. 2001
- Consultant Engineer
- Assistant City Engineer
- Utility/Site Development Engineer
- Design/Construction Engineer
- Maintenance Engineer
- Assistant County Engineer



Civil Engineer

- 4-yr College Degree – Accredited College
- Fundamentals of Engineering (FE) Exam – EIT
- Professional Engineer – 4 years Experience & Pass Exam

Civil Engineering Technician

- 2-yr Degree – Technical School/Community College



Land Surveyor

- 4-yr College Degree – Accredited College
- Fundamentals of Surveying (FE) Exam – LSIT
- Licensed Land Surveyor – 4 years Experience & Pass Exam

Land Survey Technician

- 2-yr Degree – Technical School/Community College





Engineering Code of Ethics

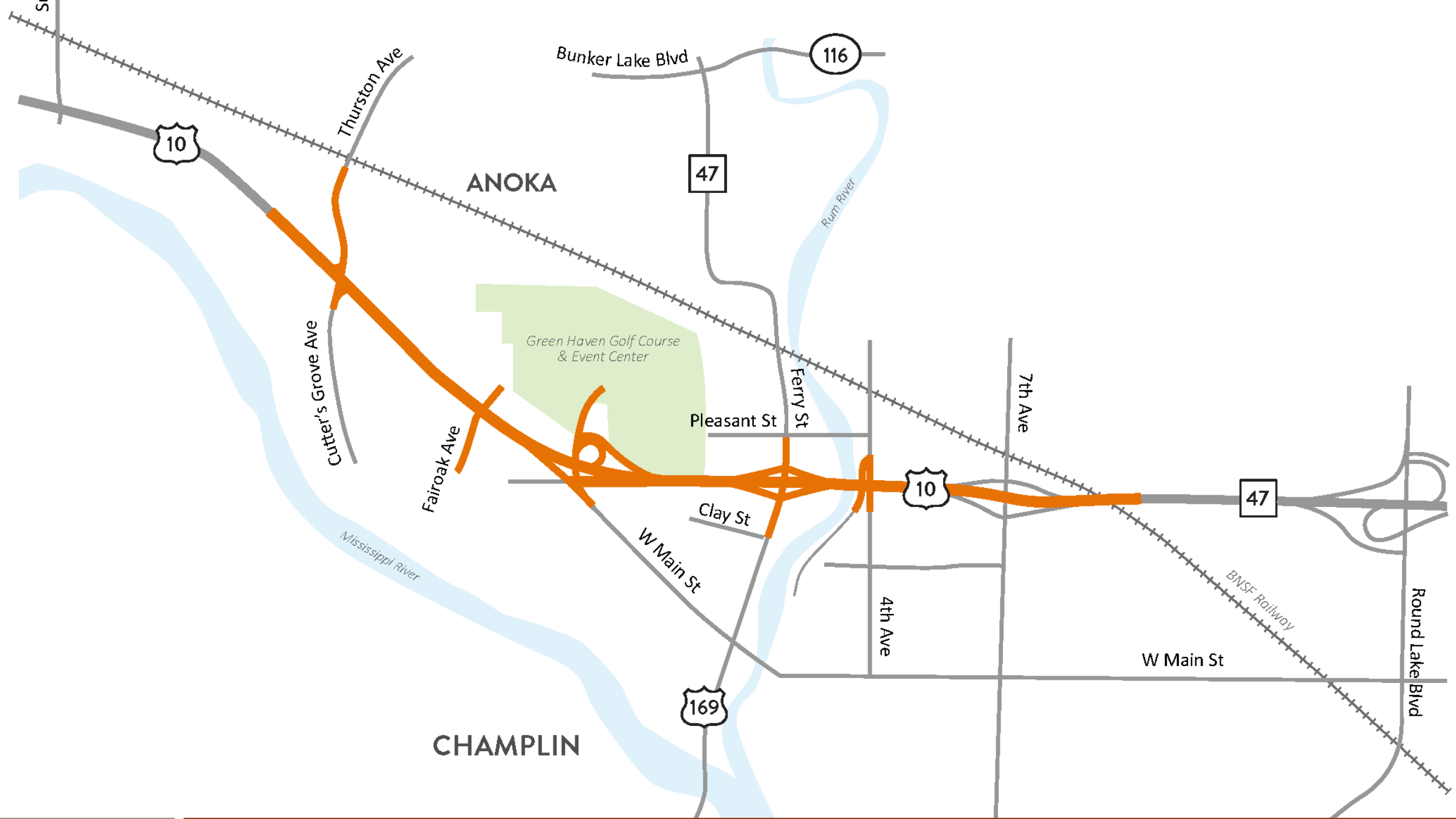
- **Hold Paramount the Safety, Health and Welfare of the public**
- **Perform Engineering Services in areas of Competency**
- **Provide Public Statements in an Objective and Truthful Manner**
- **Act for each Employer or Client as Faithful Agents or Trustees**
- **Avoid Deceptive Acts**
- **Conduct Themselves Honorably, Responsibly, Ethically, and Lawfully so as to Enhance the Honor, Reputation, and Usefulness of the Engineering Profession.**



Transportation

- **Engineering**
 - **Planning/Drafting/Design/Const.**
- **Traffic Engineering**
 - **Signing/Striping/Modeling/Signal Systems/Roundabouts**
- **Fleet Management**
 - **Vehicles/Equipment/Specialized Equipment**
- **Highway Maintenance Operations**
- **Land Surveying/GIS**
- **Transit**





ANOKA

CHAMPLIN

Green Haven Golf Course & Event Center

10

116

47

10

47

169

Bunker Lake Blvd

Thurston Ave

Cnutter's Grove Ave

Fairoak Ave

Pleasant St

Clay St

W Main St

4th Ave

7th Ave

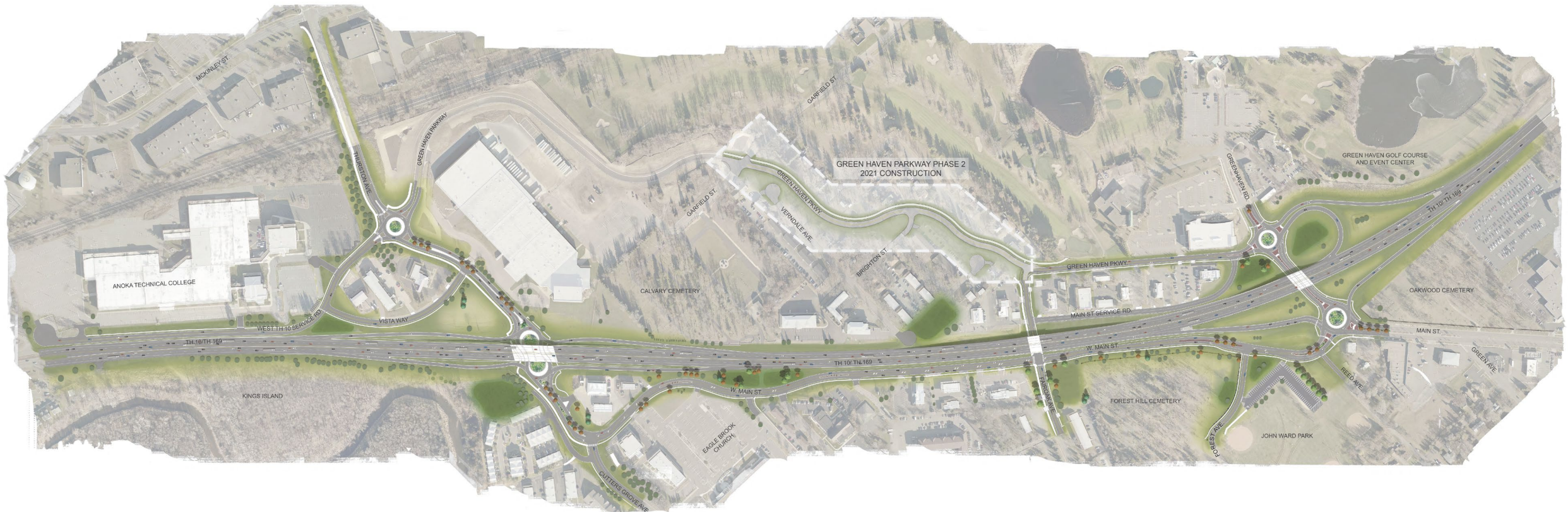
W Main St

Round Lake Blvd

Rum River

Mississippi River

BNSF Railway



Anoka Solution



Transportation





Ramsey Gateway



Hwy 10/169 @ Ramsey Blvd



Hwy 10/169 @ Ramsey Blvd



Hwy 10/169 @ Ramsey Blvd



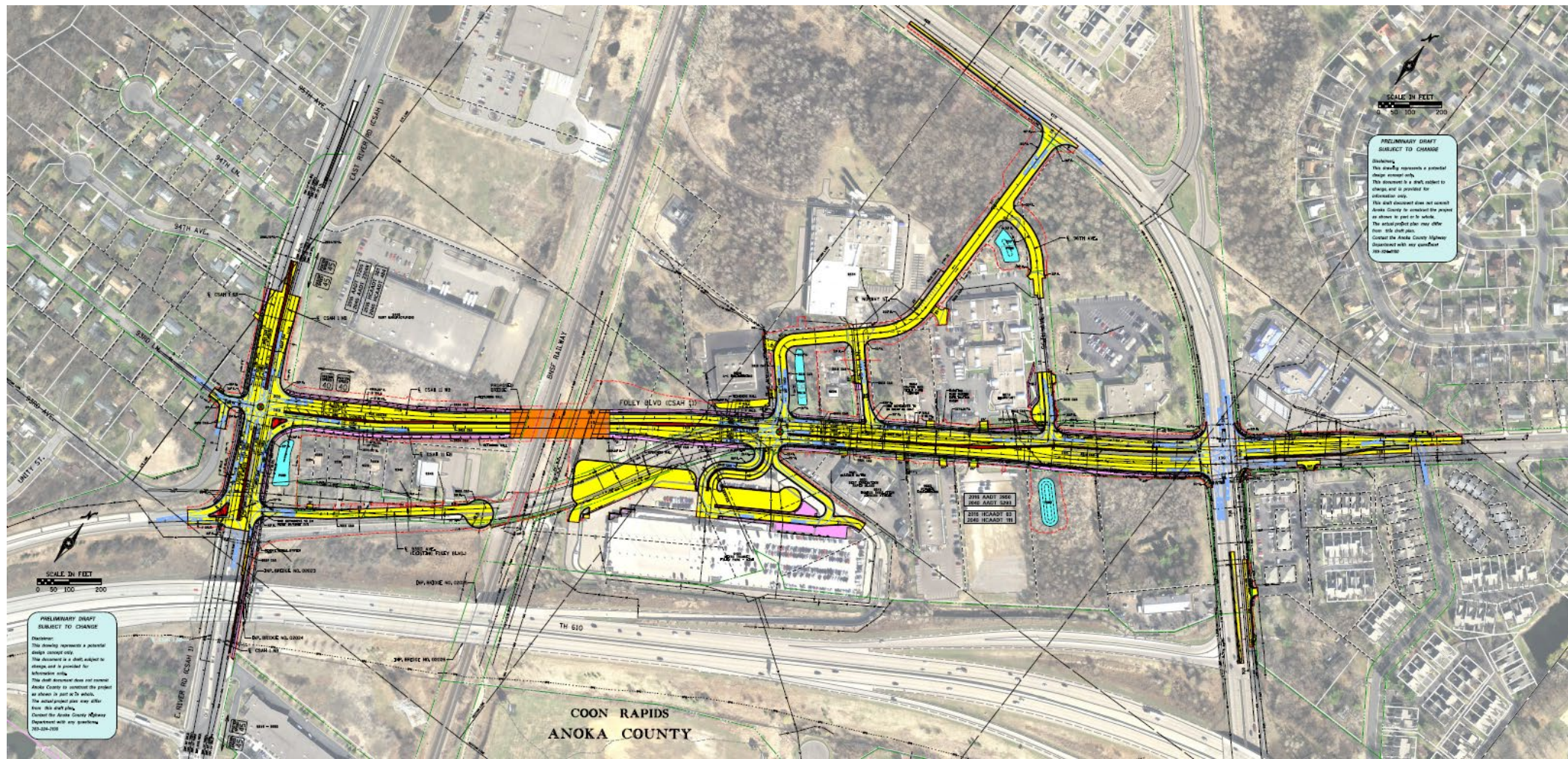
Hwy 10/169 @ Sunfish Lake Blvd



Hwy 10/169 @ Sunfish Lake Blvd



Hwy 10/169 @ Sunfish Lake Blvd



Foley Boulevard Re-Alignment Project



Foley Boulevard Re-Alignment Project



Civil Engineering - Salary

- Provide Safe Highways for Motorists





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Civil Engineering - Municipal

Design Sanitary Sewer Systems & Drinking Water Systems



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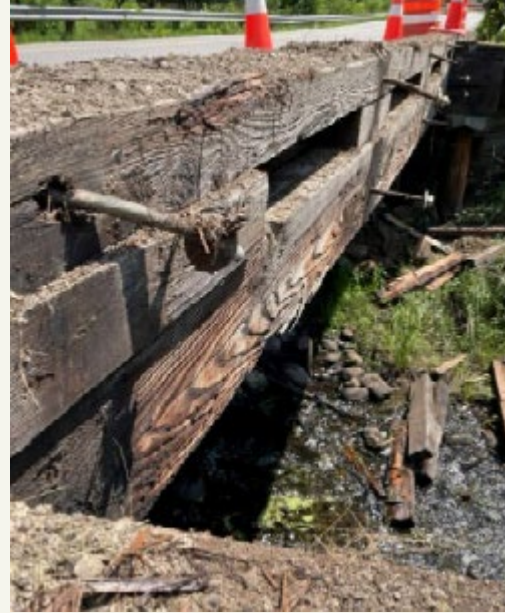


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Civil Engineering

Woodbridges





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Maintenance Operations

- Snow and Ice**
- Clearing of Trees**
- Mowing of Boulevards**
- Paving & Shouldering**
- Culverts**
- Roadway Striping**
- Signing**
- Guardrail**
- Noisewalls**
- Pothole repair**
- Cleaning up ROW (Animals/Debris)**





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Maintenance Operations





Infrastructure Investment and Jobs Act

Infrastructure funding \$7.3 Billion for 5 years In MN

\$4.5 Billion Improve and Develop Highways

\$302 Million for Bridge Replacement/Repairs

\$818 Million for Public Transportation

\$608 Million Water Infrastructure

\$297 Million for Airport Infrastructure

\$100 Million in Internet Services

\$68 Million in EV Charging Network





Civil Engineering - Salaries

Civil Engineer

- Summer Interns - \$17-\$21/hr
- College Grad - \$25-\$35/hr
- 10 years Experience - \$45-\$55/hr
- 20+ years Experience - \$65-\$85/hr

Civil Engineering Technician

- Summer Interns - \$17-\$21/hr
- College/Tech School Grad - \$23-\$29/hr
- 10 years Experience - \$35-\$45/hr
- 20+ years Experience - \$50-\$60/hr





Interested in Engineering? What you Can Do!

- **Math/Science/English**
- **Be Active in Science Clubs/National Honor Society/Volunteer Program/Community Involvement**
- **Summer Jobs - Engineering/Construction/Landscaping**
- **Meet with Professionals in the Industry/School**
- **College Clubs, Groups, American Society of Civil Eng.**



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Questions?

Jerry Auge, PE

