





### Project Purpose

To evaluate the future design of McAndrews Road between 140th Street and Galaxie Avenue in Apple Valley, including trail infrastructure, retaining walls, and roadway configuration.

### REASON FOR EVALUATION

**SCOPE OF PROJECT** 



TRAIL INFRASTRUCTURE

Dakota County's 2040 Transportation Plan identifies the need for a multimodal trail along the south side of McAndrews Road (between Garden View Drive and Galaxie Avenue). Having trails on both sides of County Highways allows for easy pedestrian and bicycle access and reduces need to cross these high speed roadways.

This project will evaluate the feasibility of adding a multimodal trail on the south side of McAndrews Road between 140th Street and Galaxie Avenue.



**RETAINING WALLS** 

The existing retaining walls along this segment of McAndrews Road are deteriorating and/or damaged. The County has programmed these walls for repair or replacement within the next 5 years.

This project will identify a cost-effective rehabilitation or replacement plan for the existing retaining walls along McAndrews Road.



**ROADWAY CONFIGURATION** 

Dakota County's 2040 Transportation Plan identifies this stretch of McAndrews Road for evaluation of a through-lane reduction. A through-lane reduction would provide motor safety, operations benefits, and allow space for a potential multi-use trail.

The project will evaluate a through-lane reduction along McAndrews Road between 140th Street and the Highway 77 Interchange.





### Existing Conditions and Traffic Considerations

- None of the intersections in the study area have a crash rate above the critical crash rate over the last five years.
- The most common crash in the study area can be attributed to vehicles turning at intersections.
- Typically, 2-lane roadways with turn lanes are appropriate for roads with an ADT (Average Daily Traffic) between 10,000 and 18,000. 4-lane roadways are more appropriate for roadways with an ADT between 18,000 and 35,000.
- Properly sizing a roadway can produce safety benefits by minimizing weaving and lane changes, reducing conflict points between vehicle paths, and shortening pedestrian and bicycle crossing widths.

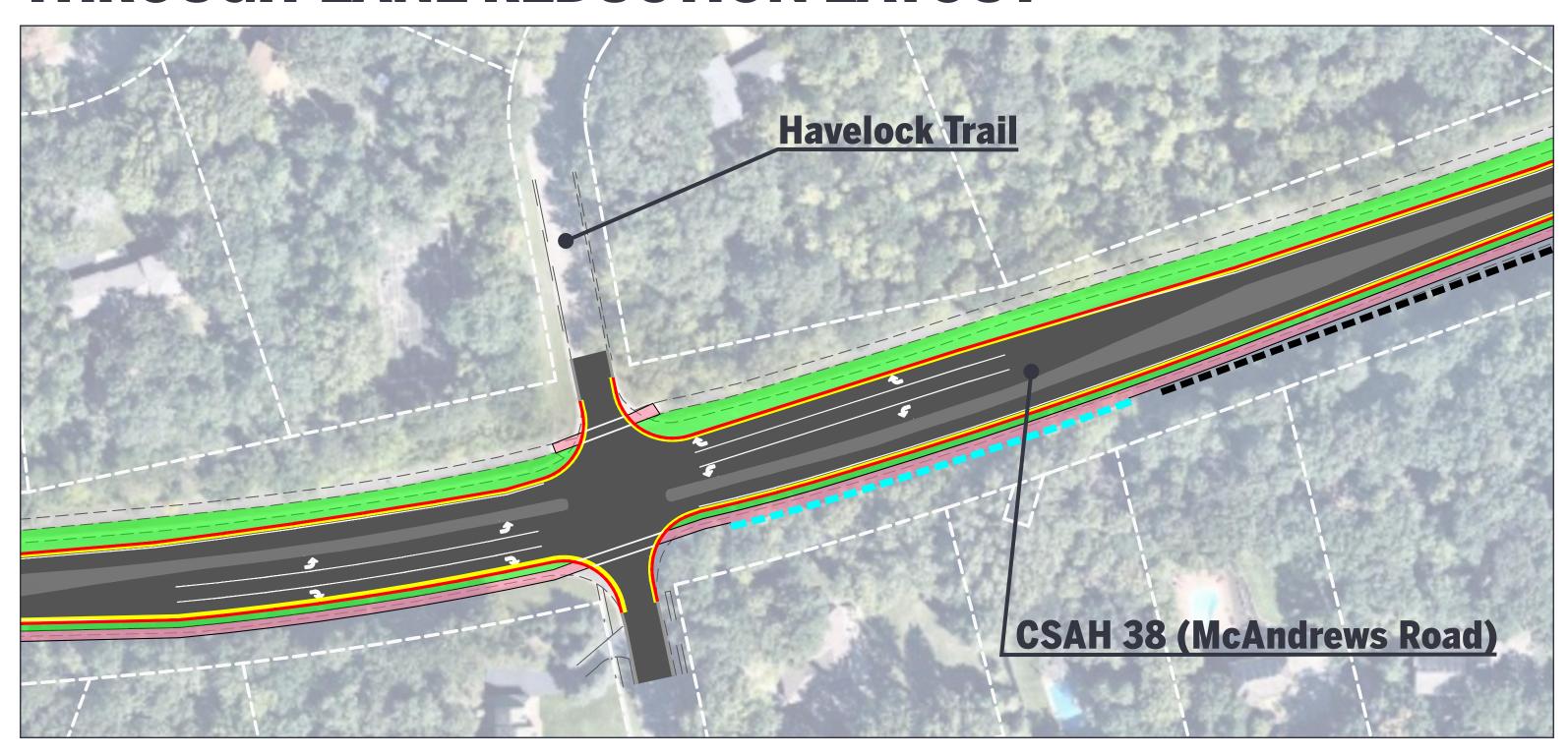






## Why Consider a Through-Lane Reduction Along McAndrews Road?

### TYPICAL MCANDREWS ROAD THROUGH-LANE REDUCTION LAYOUT

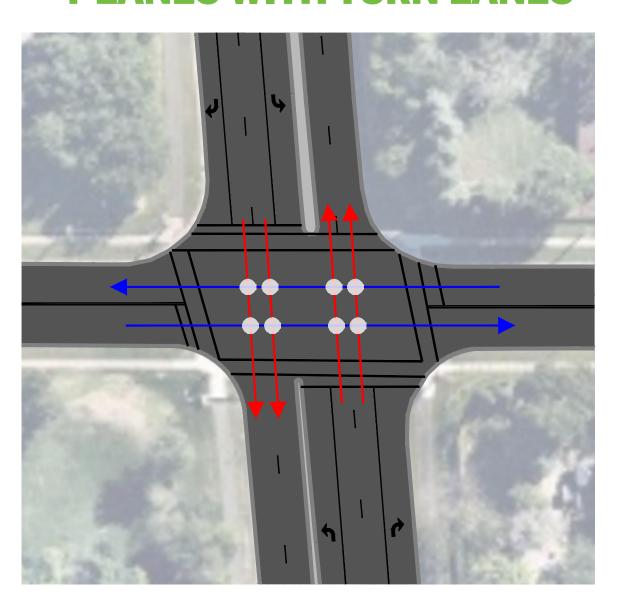


Benefits of a through-lane reduction:

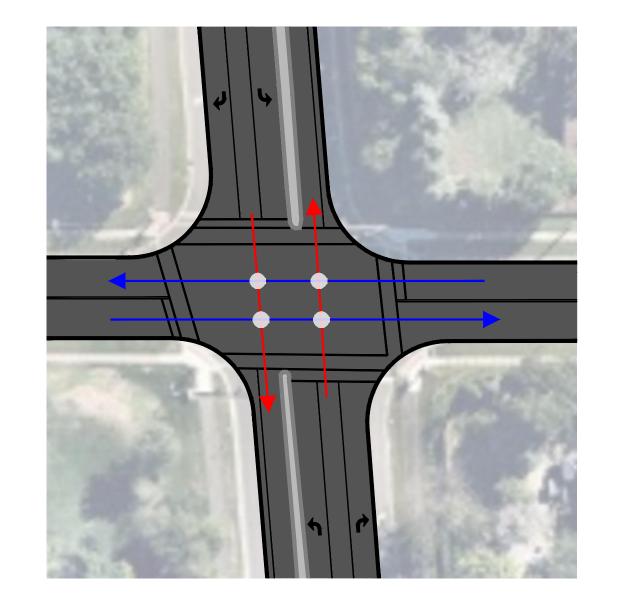
- Would have a minimal impact on traffic operations. A single through-lane with turn lanes in each direction would be correctly sized for future traffic volumes.
- ▶ Shortens side street crossing distances at intersections, compared to a 4-lane roadway.
- Provides space for other uses, such as trails.
- Reduces the number of conflict points. (see below)

#### REDUCING CONFLICT POINTS

**4-LANES WITH TURN LANES** 



**2-LANES WITH TURN LANES** 



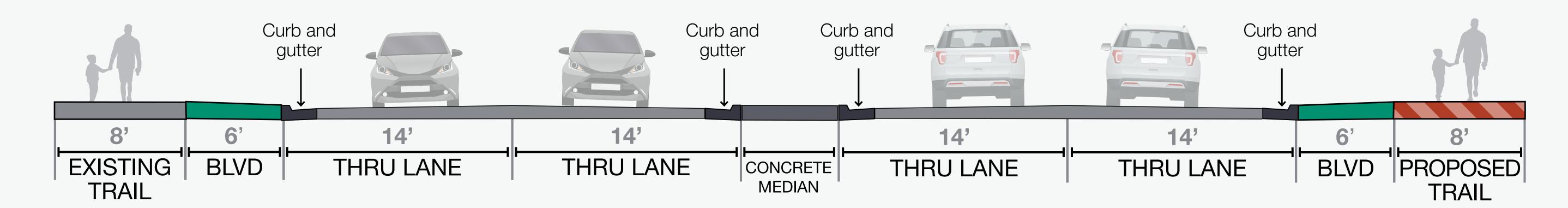
Lane reductions reduce the number of conflict points by reducing the number of lanes vehicles need to intersect to make turns or cross the roadway. Fewer conflict points along a section of road ultimately reduces risk of future crashes.

Note: McAndrews Road only being reviewed for a through-lane reduction between 140th Street and the Highway 77 interchange. Traffic volumes East of Highway 77 warrant a 4-lane section.





# Typical Section #1 - Off-Street Trail (No Through-Lane Reduction)



### **TYPICAL SECTION #1**

Garden View Dr to Cedar Ave

Note: See overall project layout for additional Typical Section #1 details and potential trail improvements between Cedar Avenue and Galaxie Avenue.

### **PROS**

- Provides dedicated, off-street trail
- Requires minimal curb and gutter and pavement reconstruction
- Can be constructed as a standalone project
- Minimal impacts to traffic during construction

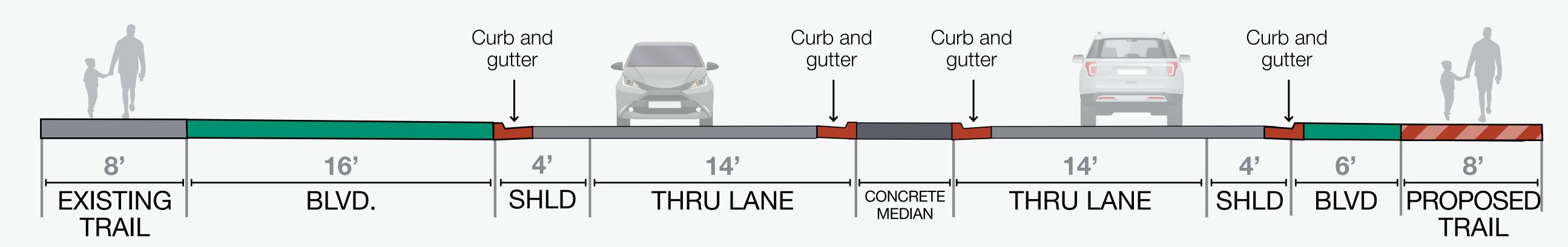
### CONS

- Requires significant tree clearing/screening impacts
- Requires temporary easements from multiple properties
- Multiple new retaining walls would be needed





# Typical Section #2 - Off-Street Trail with Through-Lane Reduction



### **TYPICAL SECTION #2**

### Garden View Dr to Cedar Ave

Note: See overall project layout for additional Typical Section #2 details and potential trail improvements between Cedar Avenue and Galaxie Avenue.

### **PROS**

- Provides a dedicated, off-street trail
- ▶ Right-sizes roadway for current and future traffic volumes
- Reduces the need for new retaining walls
- Limits tree clearing and screening impacts compared to Typical Section #1
- Limits the need to acquire temporary easement

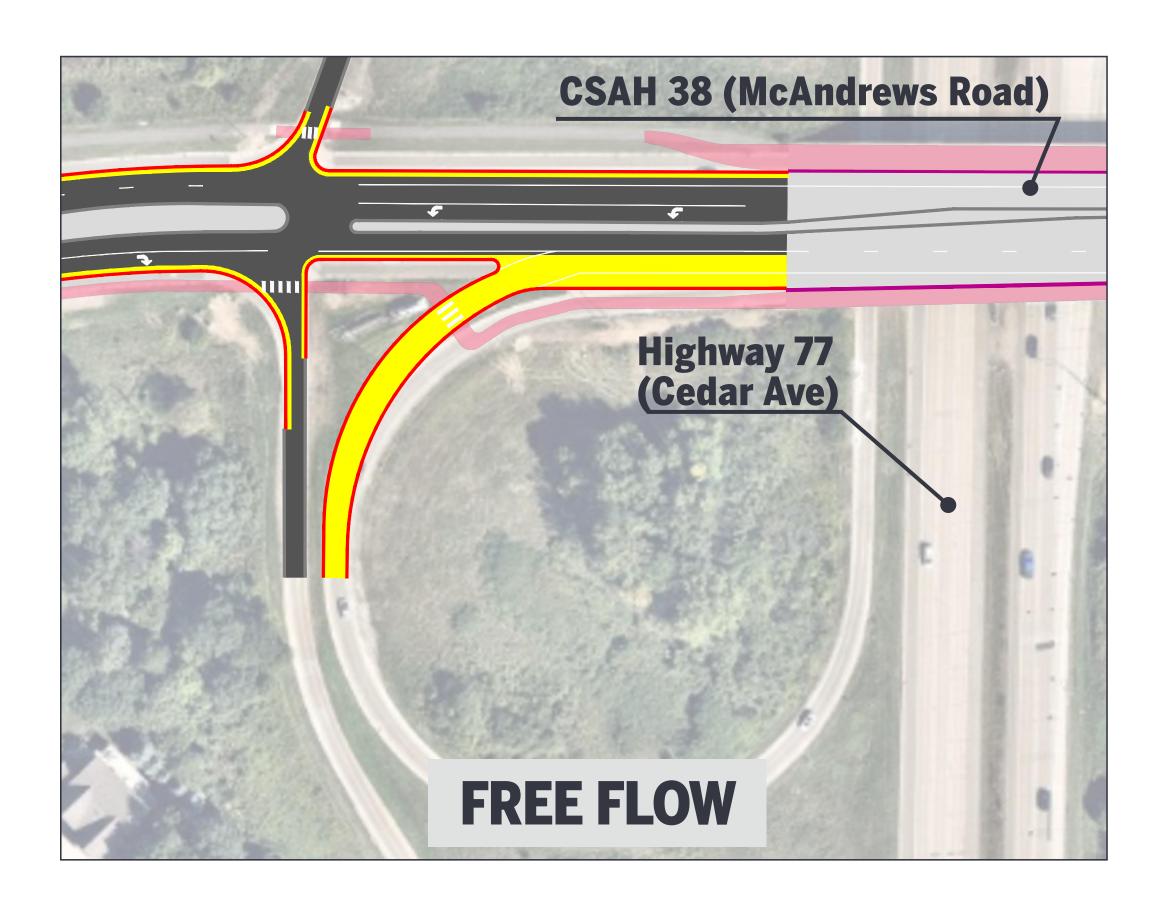
### CONS

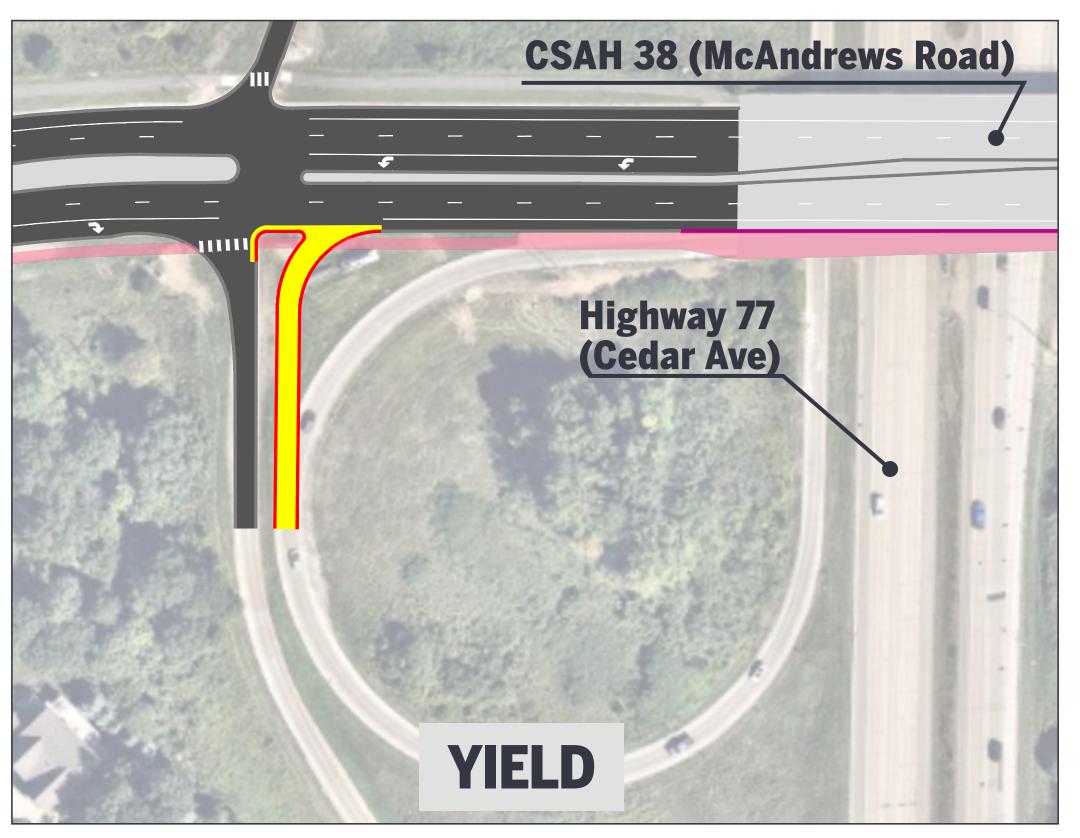
- Best implemented with a larger McAndrews Road roadway reconstruction project
- Requires reconstruction of curb and gutter, pavement, and utilities along McAndrews Road
- Traffic impacts during construction are required

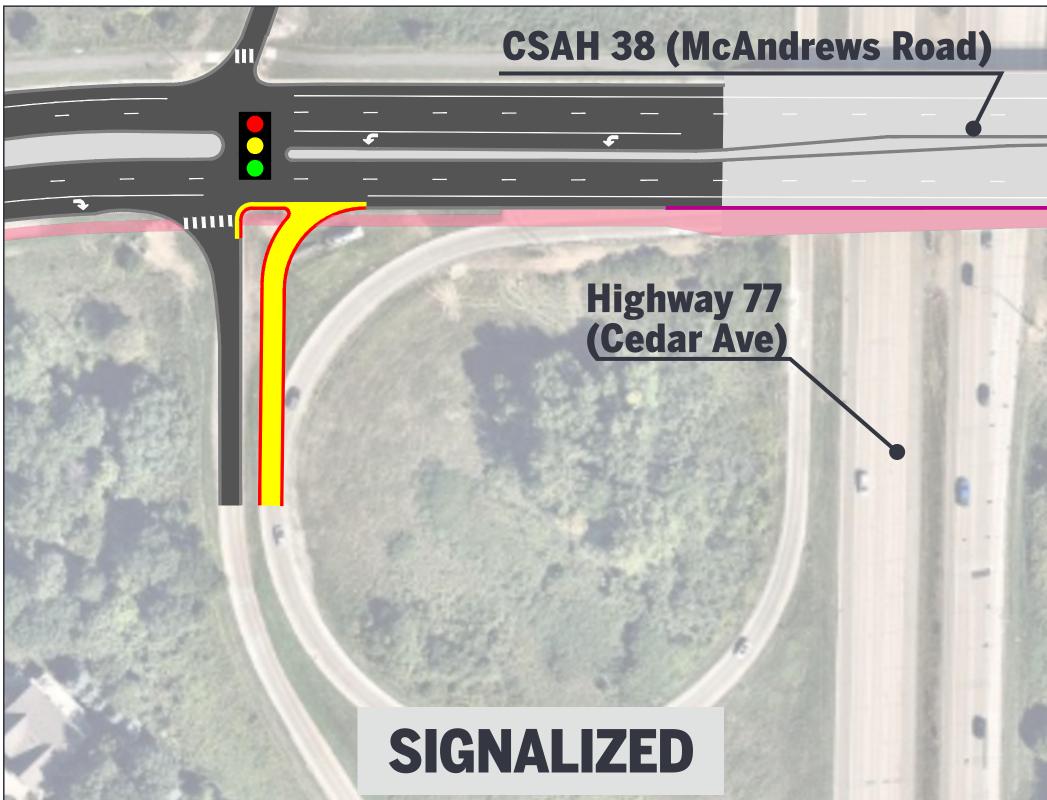


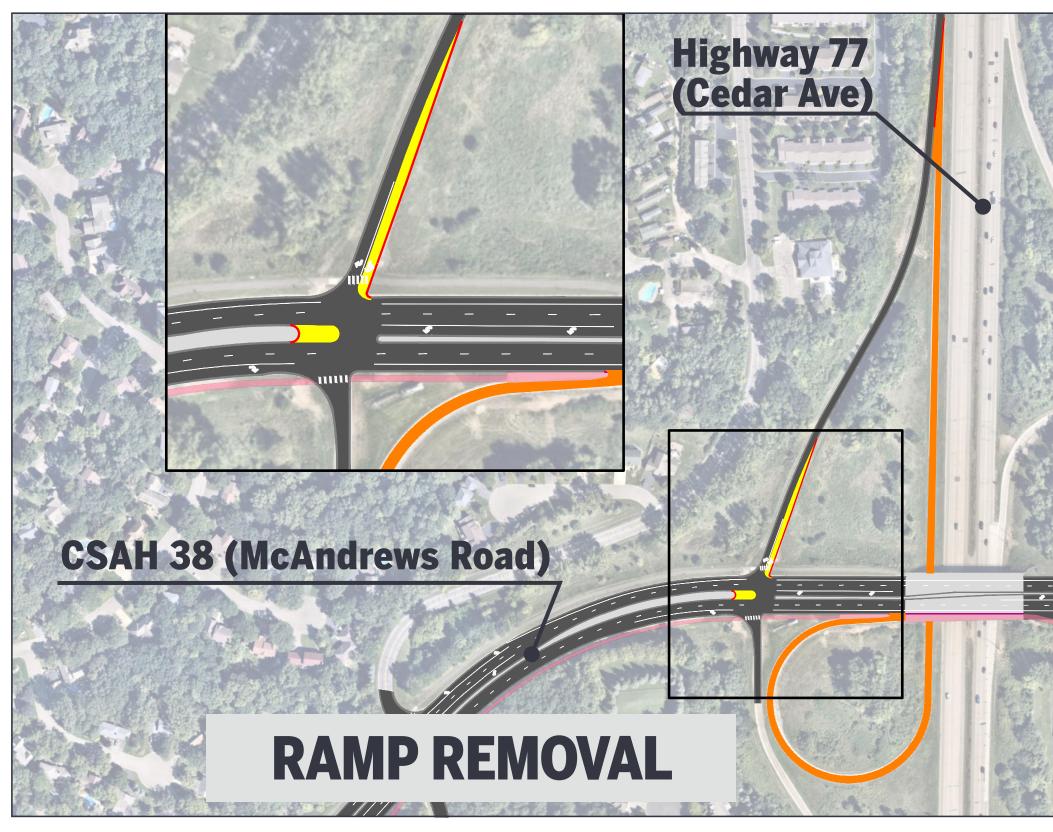


## Highway 77/McAndrews Road Interchange

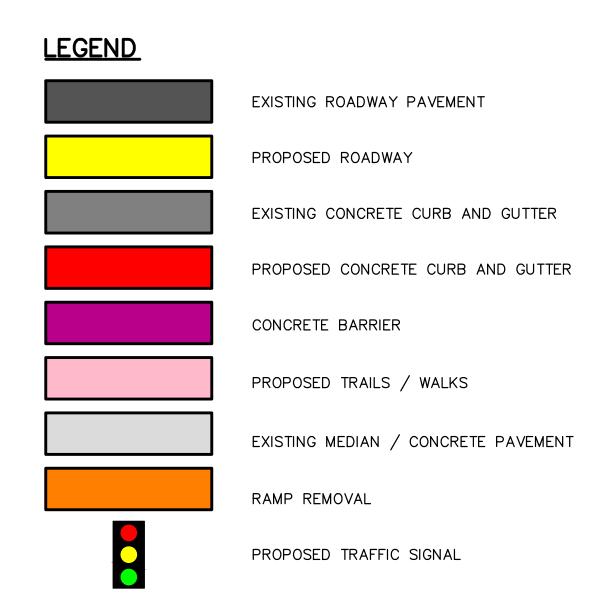








- Modifications to the Highway 77/McAndrews Road interchange are necessary to implement trail improvements.
- The project team is currently evaluating traffic, constructibality, safety, and operations of multiple different options for the interchange.
- Additional information on potential interchange modifications will be available at the next open house.



POTENTIAL INTERCHANGE MODIFICATION CONFIGURATIONS

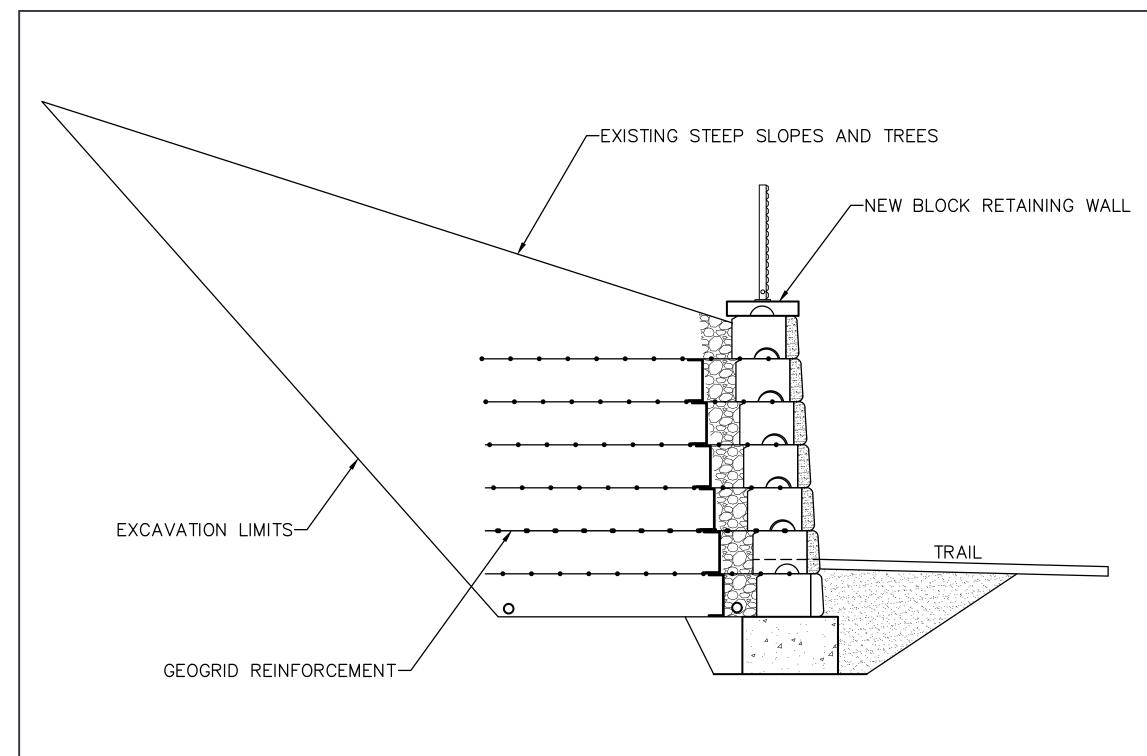


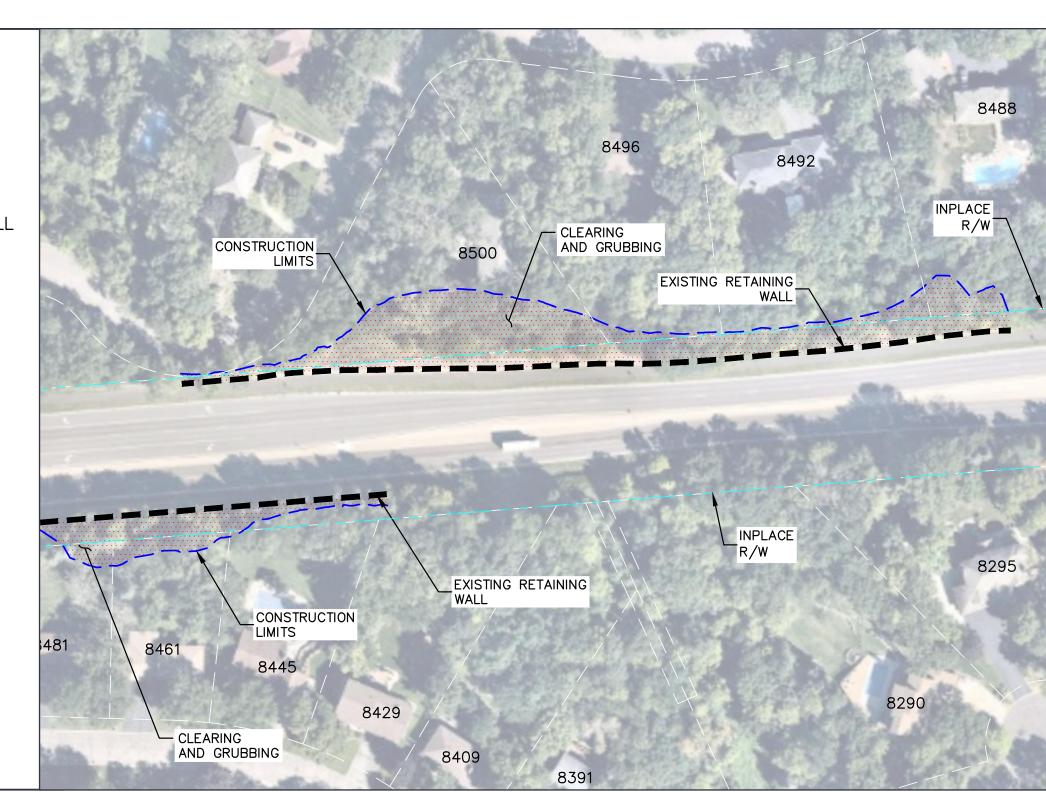


## Retaining Wall Rehabilitation/Reconstruction

- ▶ 3 existing retaining walls constructed in 1991 in project area
- Typical useful life for small block wall is 25 years
- These walls are programmed for replacement within the next 5 years
- Wall options being evaluated based on cost, constructibility, property impacts, tree clearing impacts, and aesthetics.
- Wall replacement/rehabilitation options being evaluated include:
  - Standard Block Wall Reconstruction
  - Reduced Impact Retaining Wall Reconstruction Options:
    - Construct new retaining wall in front of existing wall
    - Construct new soil nail wall

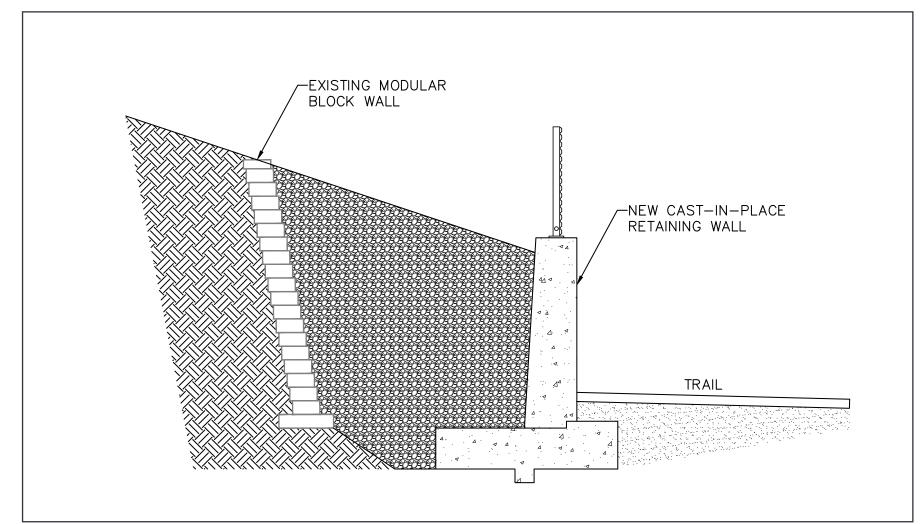
#### STANDARD BLOCK WALL RECONSTRUCTION OPTION



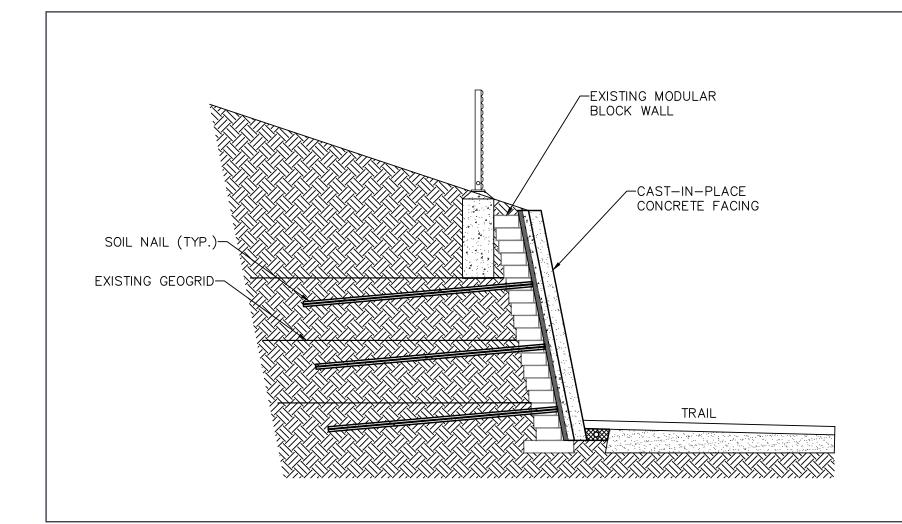


**Standard Wall Reconstruction Impacts** 

#### REDUCED IMPACT RETAINING WALL RECONSTRUCTION OPTIONS



**Construct New Wall in Front of Existing Retaining Wall** 

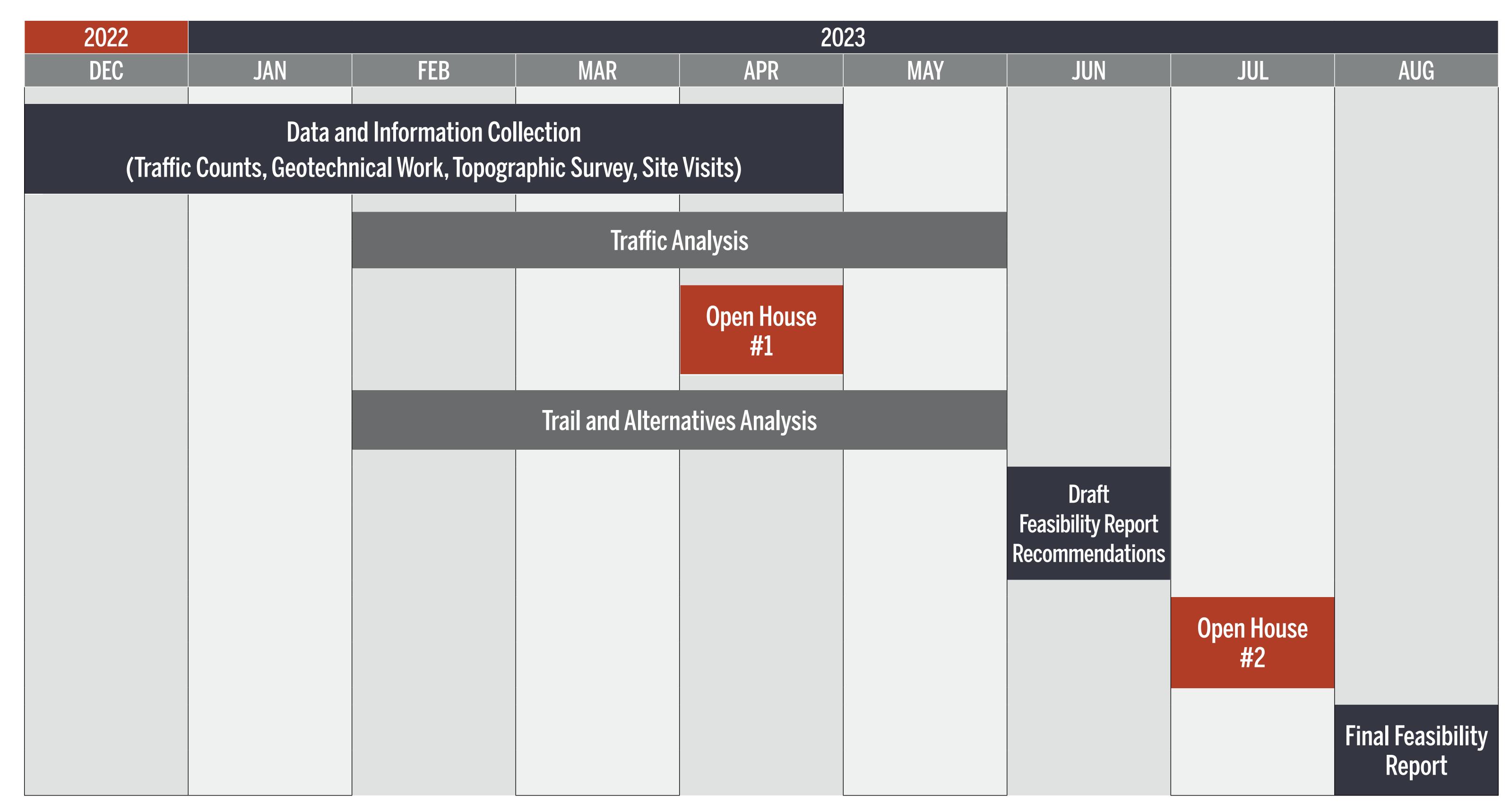


**Soil Nail Wall** 





## Schedule/Next Steps



<sup>\*</sup>The timing of any future design or study phase is not determined



