

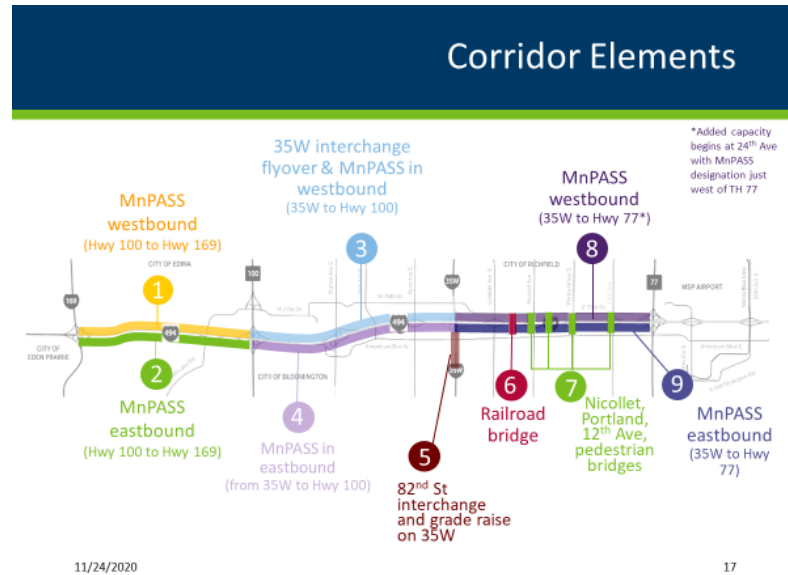
2785-424 Vision Implementation Plan Development and Scenarios

2-9-21

Introduction

The Project Team (including MnDOT, SEH, SRF, and FHWA) met multiple times to discuss the evaluation criteria and determine scenarios for implementation. The process included reviewing each individual criterion to determine which elements rose to the top and if an implementation sequence was possible.

It became clear that some of the criteria would not yield an implementation sequence and only resulted in highlighting a few priority elements. Also, some criteria couldn't be discussed independently without taking into consideration the other criteria due to the direct connection between them. Below is a summary of the discussions that took place and outcomes.



Constructability

The constructability criterion focuses on minimizing throwaway or re-do work, how possible construction staging of individual elements impacts adjacent elements and reducing/minimizing traffic impacts during construction. Therefore, this criterion discusses how the corridor segments are either independent or interdependent to each other for construction purposes only.

It was determined that this criterion doesn't yield an implementation sequence but highlights which elements should be combined to realize construction efficiencies.

- Elements 1 and 2 can be independent projects, but will yield construction staging benefits when combined
- Elements 3 and 4 need to be constructed together due to the alignment shift and reconstruction of I494 in both directions between Xerxes and I35W
- Element 5 can be done as an independent project although consideration should be given to how the braid bridge carrying traffic from 82nd Street to NB I35W is constructed separately from Element 3
- Elements 6 and 7 need to be constructed before Elements 8 and 9 in order to accommodate the expansion of the I494 corridor to accommodate MnPASS lanes; in addition, there are reduced impacts to traffic when constructing Elements 6 and 7 together
 - All utility impacts associated with each element will be completed as they are being constructed.
 - If retaining walls in Elements 8 and 9 are not included with the construction of Elements 6 and 7, a cost for temporary shoring will be needed
- Elements 8 and 9 need to be construction together due to the need to connect drainage infrastructure

Operations/Safety

This criterion was split into two sub-criteria: Operations and Safety. The Operations criterion evaluated the elements from a traffic operations perspective to assess the impacts and benefits of each element and how they relate to the other elements. The Safety criterion considered the safety benefits for each element considering existing crash data on the corridor.

The Operations criterion resulted in a priority order and sequence based on the existing weaving, congestion, downstream/upstream benefits and impacts. This criterion resulted in the following implementation plan sequence:

- Elements 3 and 4
- Element 7
- Element 6¹
- Element 9 and 8
- Element 1 and 2
- Element 5²

¹This element does not provide any direct benefits or impacts to vehicular, pedestrian, or bicycle traffic, but is required to be replaced to accommodate Elements 9 and 8

²The improvements to 82nd Street are not necessarily needed from an operations perspective

The area around I35W has the greatest operations needs because it is the most congested area along the corridor today. The eastbound direction of I494 between TH 100 and I35W regularly experiences congestion and the westbound direction of I494 experiences congestion due to the northbound I35W on-ramp, which Elements 3 and 4 address. Element 7 has the next highest need due to the congestion that regularly occurs in both directions of I494 between I35W and TH 77 due to the short access spacing and weave segments. Element 6 is the next priority because while it doesn't provide any direct benefits or impacts to vehicular, pedestrian, or bicycle traffic, it is required to be replaced in order to facilitate the construction of Elements 8 and 9. Elements 8 and 9 are the next priority because these segments experience congestion occasionally, which would be improved with Elements 3 and 7. Elements 1 and 2 are next on the priority list because they would provide minimal benefits until downstream capacity is added and operations are improved. Element 5 is the last priority because the improvements at 82nd Street are not necessarily needed from an operations perspective.

The Safety criterion resulted in a priority order for some of the elements, but overall did not recommend an implementation sequence. The following elements were identified as potentially realizing higher safety improvements/benefits on the corridor.

- Element 7
- Element 4
- Element 3

Element 7 has the greatest need from a safety perspective due to the number of crashes near the interchanges and the weaving taking place in short distances due to the proximity of the interchanges to each other. Element 4 has the next highest need due to the safety concern between East Bush Lake Road and TH 100 due to congestion spilling back into this area. Element 3 was identified as a priority due to the existing safety concern that exists at the I-35W/I-494 interchange, which is over the critical crash rate.

Asset Management

This criterion looked at the existing condition of each type of asset. The assets discussed during the implementation plan development included pavements, bridges, and drainage infrastructure as these tend to drive the scope of preservation projects.

The condition of the pavement along I494 is the most deteriorated between approximately France Avenue and 24th Avenue. This area of pavement at least needs a mill and overlay to continue safe operations of the roadway. This is the reason that Elements 3 and 4 were identified as the highest priority for implementation sequencing followed by Elements 8 and 9. Elements 3 and 4 were also the highest priority for pavement condition due to settlement of the pavement near the Penn Avenue interchange area which has been a problem since the interchange was constructed in the early 2000's.

The condition of the bridges at Nicollet Avenue, 12th Avenue, Portland Avenue, and I494 over I35W warrant priority for replacement in the very near future. Also, the potential for in-fill walls at France Avenue, Xerxes Avenue, and Penn Avenue give rise to those bridges as well. Element 7 then is the highest priority to address bridge condition with Elements 3 and 4 as the next priority.

The existing trunk line condition in Elements 7, 8, and 9 along with the creation of space for underground storage and construction of drainage infrastructure to address capacity deficiencies are the reasons that these elements rose to the top for drainage. Element 5 is also a priority due to localized flooding in Bloomington and the shared infrastructure with Bloomington and MnDOT.

None of the assets discussed yielded an implementation sequence but do identify priority elements due to their condition.

Funding/Cost

The discussion of both amount of funding available and cost of individual elements was combined due to the direct link between the two. The amount of funding available was assumed to include \$173M from the Corridors of Commerce program for MnPASS and the turbine interchange and \$11M from the Freight program for the turbine interchange/I35W. For the purposes of identifying a sequence under this criterion, the assumed maximum dollar threshold for the first project was \$250M.³ Given these assumptions, the following sequence was determined (including the cost of each phase).

- Elements 3, 4, 7⁴ [\$220.8M to \$264.9M]
- Element 6⁵ [\$10.4M to 12.5M]
- Elements 8 and 9 [\$124.1M to \$148.9M]
- Element 5 [\$40.7M to \$48.8M]
- Elements 1 and 2 [\$42M to \$50.3M]

³This is assumed to be the total construction cost including funding from MnDOT, local cost participation, existing, etc.

⁴It was discussed that the first phase should include retaining walls from Elements 8 and 9 to get all of the direct impacts to local/adjacent communities done in the first project.

⁵Element 6 can be combined into one project with Elements 8 and 9 or separate, but Element 6 must be constructed before Elements 8 and 9.

Community Support

The Community Support criteria pertains to the local agencies & corridor advocacy groups affected by the corridor and is an interpretation of the priorities listed in public agency/organization communications. The following priorities were agreed to.

- Richfield
 - Part of Elements 3, 4, 7 (Phase 1 Turbine, Portland Br, ramp modifications to Nicollet and 12th)
 - Elements 6, 7; and/or Elements 1, 2, 3; and/or Element 5 (any combination or separate)
 - Elements 8, 9
- Bloomington
 - Elements 3 and 4
 - Element 7
- I494 Corridor Commission and I35W Solutions Alliance (Coalitions)
 - Elements 3 and 4
 - Element 7
 - Element 5

The sequence listed under Richfield was also partially based on an email given to the Project Team 11-4-20. The I494 Corridor Commission has included the I494 corridor as a legislative priority for 2021. The I35W Solutions Alliance has included the turbine interchange and access reconfiguration as legislative priorities for 2020 and will likely include for 2021.

Equity

The Project Team spent a lot of time discussing this criterion. It was decided to have two sub-criteria: Proximity to Environmental Justice Communities and Operations.

By taking into consideration the Proximity to Environmental Justice Communities, the Project Team agreed that Elements 7 and 5 were a priority for many reasons including connectivity of bike and pedestrian facilities which includes new facilities, air quality improvements, potential noise improvements, safety and operational improvements both on the highway and local systems, proximity to transit facilities, reduction in traffic volume along Nicollet and 12th Avenues as well as the local system.

When looking at the effect of the improved operations through an equity lens, environmental justice communities also see an improvement in many of the items discussed previously due to the reduction in congestion on the I494 corridor. Therefore, the following implementation sequence was agreed to:

- Element 7
- Elements 3 and 4
- Elements 8 and 9
- Elements 1 and 2
- Element 5

This sequence is very similar to the Operations criteria stated earlier.

Evaluation Summary

Criteria	Sub-criteria	Sequence or Priority or Constraints	Outcome
Constructability	NA	Constraints	Construct Elements 1 and 2 together Construct Elements 3 and 4 together Can construct Element 5 independently Construct Elements 6 and 7 before 8 and 9 Construct Elements 8 and 9 together
Operations/ Safety	Operations	Sequence	Elements 3 and 4 Elements 7 Element 6 Elements 9 and 8 Elements 1 and 2 Element 5
	Safety	Priority	Element 7 Element 4 Element 3
Asset Management	Pavements	Priority	Elements 3 and 4 Elements 8 and 9
	Bridges	Priority	Element 7 Elements 3 and 4
	Drainage	Priority	Elements 7, 8, and 9 Element 5
Funding/Cost	NA	Sequence	Elements 3, 4, and 7+ Element 6 Elements 8 and 9 Element 5 Elements 1 and 2
Community Support	Richfield	Sequence	Part of 3, 4, and 7 Any combination of Elements 6 and 7; 1, 2, and 3; Element 5 Elements 8 and 9
	Bloomington	Priority	Elements 3 and 4 Element 7
	Coalitions	Priority	Elements 3 and 4 Element 7 Element 5
Equity	Proximity to EJ	Priority	Element 7 Element 5
	Direct EJ Benefits of Operational Improvements	Sequence	Element 7 Elements 3 and 4 Elements 8 and 9 Elements 1 and 2 Element 5

Implementation Plan Recommendation

The results of the analysis were discussed during two TAC meetings in January. The TAC members recognized the need to prioritize the elements based on this criteria to help guide not only the initial project but to help plan for future phases of construction, ultimately to achieve completion of the corridor vision. While this sequence of elements is the current approach, it is recognized that this recommendation is only guidance for subsequent projects and can be reconsidered in the future based on new information, criteria that may develop, or future funding.

Based on the TAC discussions, the following sequence of elements is recommended:

Highest Priority – Elements 3, 4 and 7

These three elements consistently were higher priorities for most of the evaluation criteria used for the implementation analysis and the TAC agreed with that outcome.

- Elements 3 and 4, which includes MnPASS from Hwy 100 to I-35W in both directions, along with the connections to I-35W including the northbound to westbound flyover bridge and corresponding eastbound to southbound ramp and the Penn Avenue braid bridges for both directions. The improvements in operations and safety were most noted by TAC members but also recognized how well they ranked for the other criteria.
- Element 7, which includes the reconstruction of Portland Avenue, and the removal of the ramps at Nicollet and 12th Avenue with new bridges plus the pedestrian bridge, also ranked high in most criteria. For many TAC members, the ability for this element to provide connectivity of bike and pedestrian facilities, air quality improvements, potential noise improvements, safety and operational improvements within an area of the corridor with high concentration of both low-income and minority populations ranked this element as a first priority.

Next Priority – Elements 6, 8 and 9

The next three elements are tied together due to the limitations on the ability to expand 494 to the east of I-35W until the existing railroad bridge is lengthened.

- Element 6, which replaces the railroad bridge, is the next priority in order to allow enough room in the 494 corridor to add the eastbound and westbound MnPASS lanes.
- Elements 8 and 9, includes MnPASS from I-35W to Hwy 77, would provide the improvement to 494 operations and increase the length of MnPASS in the corridor. It is expected that the combination of Elements 7, 8 and 9 would have both operations and safety improvements that would benefit the entire 494 corridor.

Last Priority – Elements 1, 2 and 5

The last three elements would complete the corridor vision with the extension of MnPASS from Hwy 100 to Hwy 169 and the replacement of the 82nd Street interchange and added braid bridges on I-35W.

- Elements 1 and 2 provide the least amount of operational and safety improvements in the corridor and are a lower priority for asset management activities.
- Element 5, as a whole, ranked low for priority in most criteria. However, based on the staging of Element 3 and the flyover ramp, the northbound access to I-35W may become a higher priority piece of the element, which includes a braid bridge over the flyover to access I-35W. Multiple scenarios are currently being considered, but the City of Bloomington would consider this piece of the element a higher priority.