

BOWERS HILL INTERCHANGE IMPROVEMENTS STUDY

Range of Concepts

| April 23, 2021 HRTPO Working Group

Study Updates and Meeting Objectives

- Study schedule update
- Citizen Comment Opportunity
- Range of Concepts
- Permitting Assumptions



Recent Coordination Efforts and Study Schedule

Recent Coordination Efforts

- **Continued public communication in response to property access**
- **Offline communication and coordination with agencies on specific topics related to their purview**

Citizen Comment Opportunity on Range of Alternatives

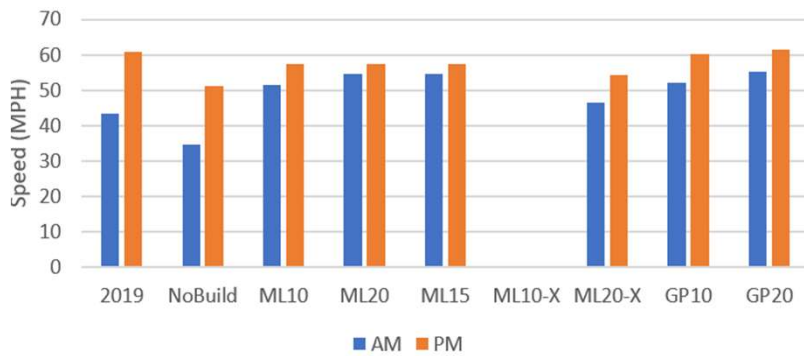
- **Updated materials and public survey available for 40 days**
- **Public made aware of opportunities through web site updates, multiple mailing list notifications, social media**
- **Comments generally favor larger build and have a preference for no tolls**
- **Responses are sometimes inconsistent with Purpose and Need or other comments**
- **Comments are not all focused on study – addressing other locations and/or topics**

Range of Concepts

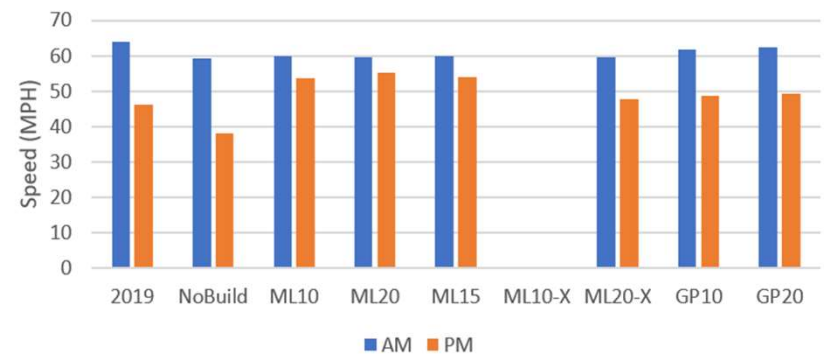
Preliminary Traffic Data to Support the Range of Alternatives

Draft Data

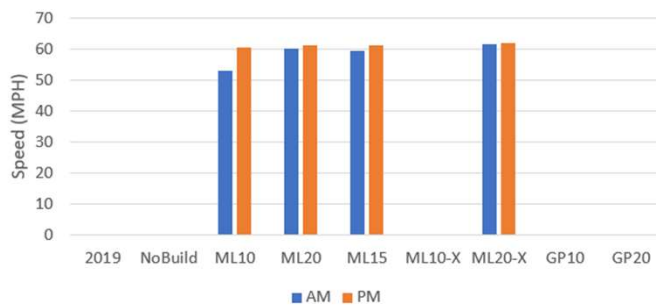
Southbound Speed (GP)



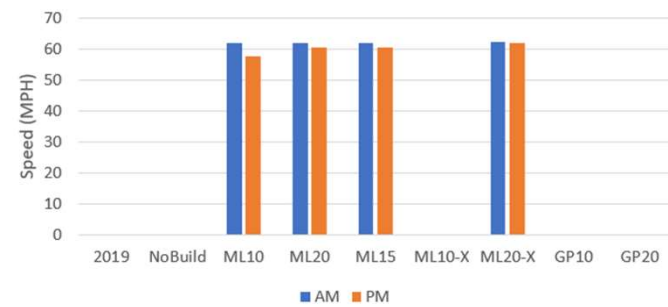
Northbound Speed (GP)



Southbound Speed (ML)



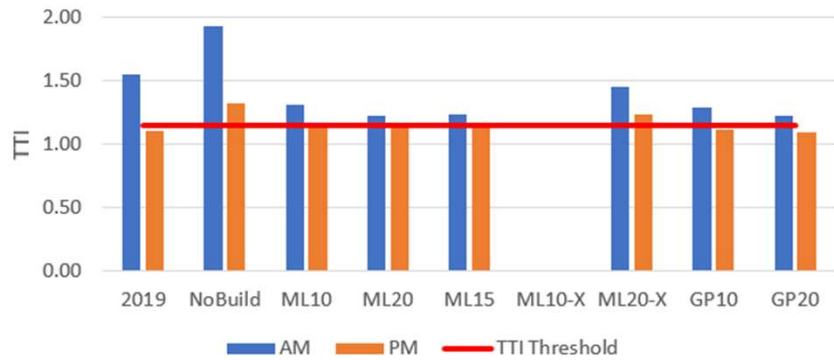
Northbound Speed (ML)



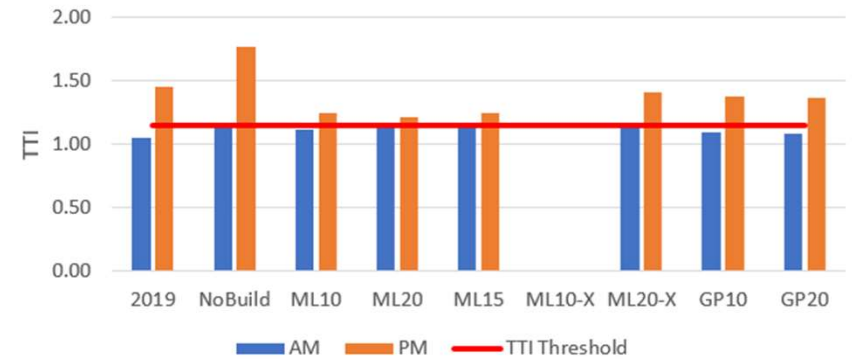
Preliminary Traffic Data to Support the Range of Alternatives

Draft Data

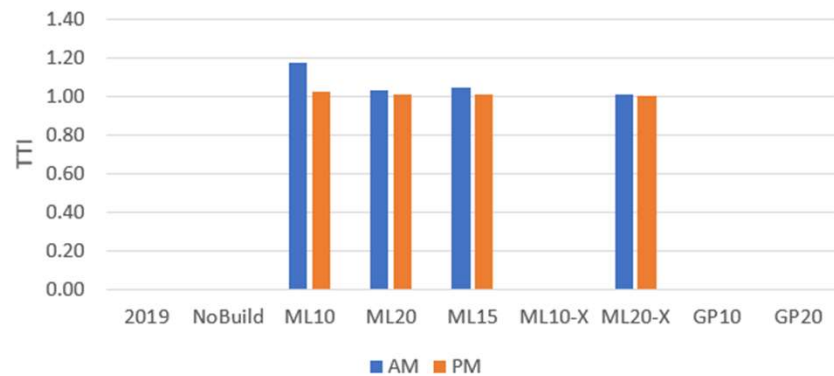
Southbound TTI (GP)



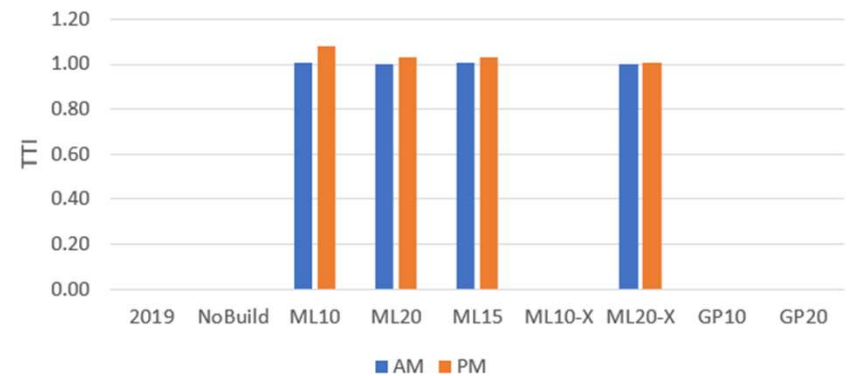
Northbound TTI (GP)



Southbound TTI (ML)



Northbound TTI (ML)



No Build: Retaining

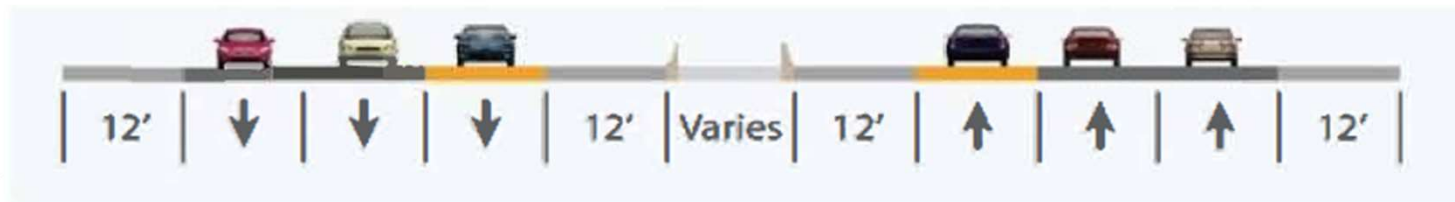
A “no action” alternative required in the NEPA analysis

- How the Option Meets the Purpose and Need
 - Reduce Congestion – it does not
 - Improve Travel Reliability – It does not
 - Provide Additional Travel Choice – It does not



Concept A: Add One General Purpose (GP) Lane in Each Direction on I-664: Recommend Not Retaining

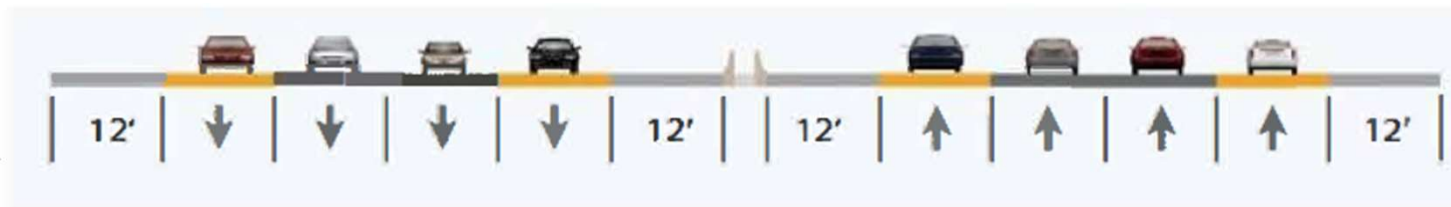
- Concept includes addressing interchanges along the corridor with widening to the inside/outside to be determined following concurrence.
- How the Option Meets the Purpose and Need
 - Reduce Congestion – Provides Additional Capacity (see next slide)
 - Improve Travel Reliability – Provides Additional Capacity (see next slide)
 - Provide Additional Travel Choice – It does not



Concept B: Add Two GP Lanes in Each Direction on I-664: Recommend Not Retaining

Concept includes addressing interchanges along the corridor with widening to the inside/outside to be determined following concurrence.

- **How the Option Meets the Purpose and Need**
 - **Reduce Congestion – Provides Additional Capacity**
 - **Improve Travel Reliability – Provides Additional Capacity**
 - **Provide Additional Travel Choice – It does not**

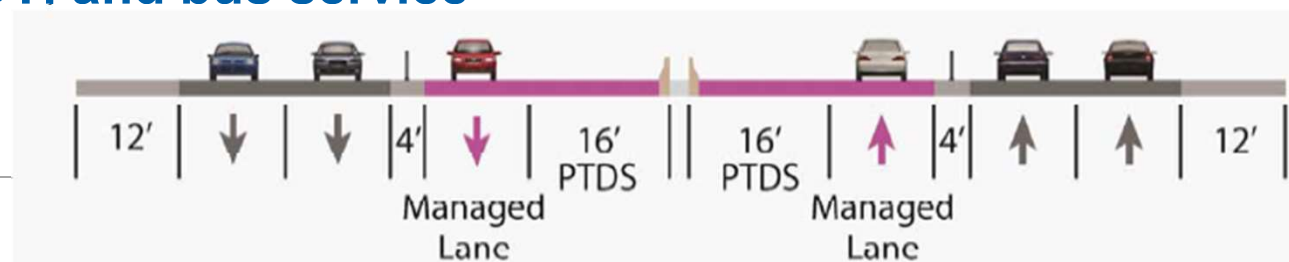


Concept C: Add One Managed Lane and a Part-time Drivable Shoulder (PTDS) in Each Direction on I-664: Recommend Retaining

Concept includes addressing interchanges along the corridor with widening to the inside/outside to be determined following concurrence. The concept assumes the PTDS would be part of the Managed Lane System.

How the Option Meets the Purpose and Need

- Reduce Congestion – Provides Additional Capacity
- Improve Travel Reliability – Provides Additional Capacity
- Provide Additional Travel Choice – Managed Lane System provides choices for HOV, HOT, and bus service

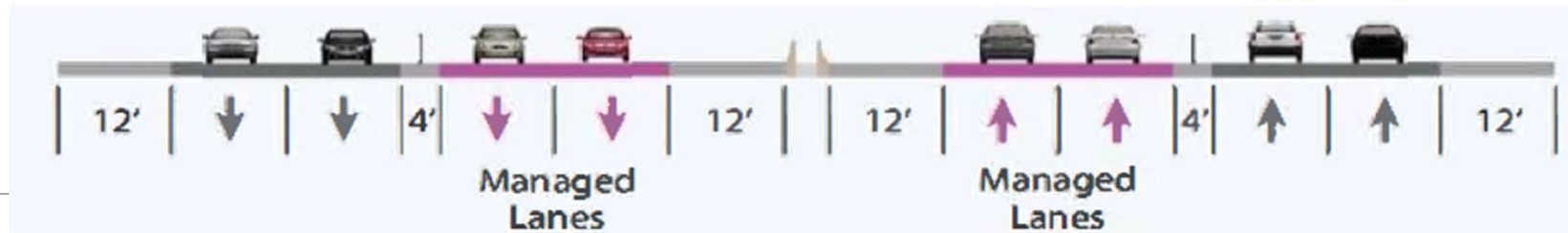


Concept D: Add Two Managed Lanes in Each Direction on I-664: Recommend Retaining

Concept includes addressing interchanges along the corridor with widening to the inside/outside to be determined following concurrence.

How the Option Meets the Purpose and Need

- Reduce Congestion – Provides Additional Capacity
- Improve Travel Reliability – Provides Additional Capacity
- Provide Additional Travel Choice – Managed Lane System provides choices for HOV, HOT, and bus service



Concept E: Add Collector-Distributor (CD) Lanes around Interchanges on I-664: Recommend Not Retaining

Concept includes constructing CD lanes at interchanges. If retained, this concept also would address the Bowers Hill Interchange. It can still be considered and/or applied to a preferred alternative if not retained as a stand-alone option.

How the Option Meets the Purpose and Need

- **Reduce Congestion – Does not address the entire corridor**
- **Improve Travel Reliability – Would only address interchange areas**
- **Provide Additional Travel Choice – It does not**

Concept F: Transportation System Management (TSM) and Transportation Demand Management (TDM): Recommend Not Retaining as Stand-Alone Alternative
Could be applied to a preferred alternative or advanced as independent projects that could be implemented as the same time as the preferred alternative. Consideration must be focused on the study area.

How the Option Meets the Purpose and Need

- **Reduce Congestion – Only at select ramps**
- **Improve Travel Reliability – Only at select ramp**
- **Provide Additional Travel Choice – Enhanced bus service would see no travel-time advantage**

Concept G: Transit Only Improvements: Recommend Not Retaining

Virginia Department of Rail and Public Transit (DRPT) has stated that transit-only lanes are not necessary in this corridor. Enhanced transit is not precluded from the corridor if this alternative is not advanced.

How the Option Meets the Purpose and Need

- **Reduce Congestion – It does not**
- **Improve Travel Reliability – It does not**
- **Provide Additional Travel Choice – Enhanced bus service would see no travel-time advantage**

Recommended Range of Alternatives

Retain for Detailed Study in the EIS

- No Build Alternative
- Add One Managed Lane and a PTDS
- Add Two Managed Lanes

Do Not Retain for Detailed Study in the EIS

- Add One General Purpose Lane
- Add Two General Purpose Lanes
- CD lanes
- TSM/TDM as a stand-alone option
- Transit Only Improvements

Assumptions:

- An Interchange Access Report (IAR) will be developed to inform details of each interchange.
- Decisions on widening to the outside or inside will be made following concurrence.

Next Steps

Activity	Timeframe
Seek Concurrence on Range of Alternatives	May Agency Meeting
Finalize Study Schedule	May 2021*
FHWA Notice of Intent (NOI) / NEPA Scoping	May 2021*

*Indicates tentative schedule

For Your Information



Purpose and Need – as concurred upon in December 2020

The purpose of the Bowers Hill Interchange Improvements Study is to reduce congestion, improve travel reliability, and provide additional travel choice on I-664 from and including the Bowers Hill Interchange to College Drive.

The following needs have been identified for the study:

- Reduce Congestion
- Improve Travel Reliability
- Provide Additional Travel Choice

Alternatives Process

1. **Develop Range of Options**
2. **Vet range of options with public and agencies**
3. **Concur on range of alternatives**
4. **Refine alternatives**
5. **Recommend preferred alternative and vet with public and agencies**
6. **Concur on recommended preferred alternative**
7. **CTB identifies preferred alternative**
8. **FHWA issues Draft EIS**
9. **Further document preferred alternative in permit applications and Final EIS**
10. **FHWA identifies selected action in Final EIS/Record of Decision**

Data that will be used to Analyze the Alternatives

Need Element	Metric(s)
Reduce Congestion	<ul style="list-style-type: none"> i. Travel Time (min)* ii. Travel Speed (mph)* iii. Delay (hours)* iv. Vehicle Miles Traveled (VMT) v. Delay per Vehicle-Mile-Traveled (minutes) vi. Vehicles/Hour/Lane (vphpl)
Improve Travel Reliability	<ul style="list-style-type: none"> i. Travel Time (min) ii. Reduction in Crashes (Crash Modification Factors, CMFs) iii. Incident Management/Available Pavement (yes/no)
Provide Additional Travel Choice (including Consistency and/or Compatibility with Regional Plans)	<ul style="list-style-type: none"> i. How many users benefit (SOV, HOV2+, HOT, transit, etc.) ii. Consistent with regional plans (yes/no) iii. Does not preclude or restrict adjacent projects/corridors/facilities (yes/no) iv. Addresses existing and planned transit use