



Project and Analyst Information:

Analyst: _____	Design ID: _____
Agency: _____	Construction ID: _____
Date: _____	Highway: _____
	County: _____
	Municipality: _____
	Project Title: _____
	Project Subtitle: _____
	Scheduled Construction Year: _____
	Improvement Concept Code: _____

Background Information:

The purpose of this amendment is to document analysis of new operational sites of promise, other alternatives, or additional operational improvements that were not included within the original Operations Certification Summary.

*Information from the original Operations Certification Summary does **NOT** need to be included in this amendment. Only include new information and new analysis. Previously completed analyses and results do **NOT** need to be re-evaluated.*

Are new operational sites of promise being evaluated?	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, skip the Operational Analysis section</i> New Operational Sites of Promise: <i>If yes, list the new locations that are being evaluated</i>
Were new alternatives identified at an operational site of promise documented in the original Operations Certification Summary?	<input type="checkbox"/> Yes <input type="checkbox"/> No Previously Evaluated Operational Sites of Promise: <i>If yes, list the locations that are being re-evaluated with new alternatives</i>

Exhibits (new operational sites of promise only):

- For new locations, consider including highway labels, key street labels, lane configurations, turn bay lengths, graphic scale, and north arrow on the Project Location/Overview Map.*

Existing Conditions

Provide information for the new Operational Sites of Promise that will help the document reviewer understand the study area, importance, and need for improvements. Below is a list of topics to consider. Duplicate table if more than one new site was evaluated.

Skip this section if the Operational Site of Promise was documented in the original Operations Certification Summary.

Existing Conditions:	New Operational Site of Promise: <input type="checkbox"/> N/A
Existing Freight Routes:	<input type="checkbox"/> OSOW-TR <input type="checkbox"/> High Clearance <input type="checkbox"/> Wind Tower <input type="checkbox"/> Long Truck Route <input type="checkbox"/> 65' Restricted Truck Route <input type="checkbox"/> N/A
Existing Accommodations:	<input type="checkbox"/> Pedestrian <input type="checkbox"/> Bicycle <input type="checkbox"/> Railroad <input type="checkbox"/> Transit <input type="checkbox"/> N/A <input type="checkbox"/> Other: <i>indicate the type of facility</i> <i>Discuss any concerns/potential impacts to alternate modes of transportation.</i>



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Traffic Generators:	<input type="checkbox"/> Seasonal Event <input type="checkbox"/> Daily Event <input type="checkbox"/> Special Event <input type="checkbox"/> Major Traffic Generator (shopping center, gas station, school, etc.) <input type="checkbox"/> N/A <i>If present, please describe the location of the traffic generator to the study location and the type of event or location that generates traffic.</i>
Do Alternate Routes Exist?	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, describe the alternate route(s):</i>

Operational Analysis:

Traffic Volumes

Discuss any pertinent new information about the existing traffic volumes collected or future traffic forecasts.

Fill out the table with traffic volume information for each new Operational Site of Promise. Duplicate the table if necessary.

New Operational Site of Promise:	<i>Complete this table for new Operational Sites of Promise not documented in the original Operations Certification Summary.</i> <input type="checkbox"/> N/A <i>If not applicable, proceed to the next table</i>
Annual Growth Rate:	
Existing Counts:	Turning Movement Count (<i>Indicate count year</i>): <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Duration: <i>Indicate count duration, such as AM/PM peak, 13 hours, etc.</i> Mainline Count (<i>Indicate count year</i>): <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Forecast Scenarios:	Start Year (<i>Indicate start year</i>): <input type="checkbox"/> Yes <input type="checkbox"/> No End Year (<i>Indicate end year</i>): <input type="checkbox"/> Yes <input type="checkbox"/> No Other Scenario/Year (<i>Indicate any other scenarios or years</i>): <input type="checkbox"/> Yes <input type="checkbox"/> No
NPMRDS Data:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <i>NPMRDS data is only used in the mainline operational evaluation. Check the N/A box if the site is an intersection.</i>

*Fill out the table below with updates to previous traffic volume information for each Operational Site of Promise documented in the original Operations Certification Summary. **If the location was previously documented, it is not necessary to collect new counts or forecasts.** Existing counts and forecasts documented in the original Operations Certification Summary can be used to complete the operational analysis for the new alternatives or additional improvements. If new counts or forecasts are obtained, they should only be used to evaluate the new alternatives or additional improvements. Previously completed evaluations documented in the original Operations Certification Summary do **NOT** need to be re-evaluated. Duplicate the table if necessary.*

Previously Evaluated Operational Site of Promise:	<i>Complete this table for Operational Sites of Promise documented in the original Operations Certification Summary.</i> <input type="checkbox"/> N/A <i>If not applicable, proceed to the next section.</i>
Were new counts/forecast data collected?	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, fill out the rest of the table.</i> <i>If no, proceed to the next section.</i>
Updated Annual Growth Rate:	<input type="checkbox"/> Yes – <i>Indicate updated annual growth rate</i> <input type="checkbox"/> No
Existing Counts:	New Turning Movement Count (<i>Indicate count year</i>): <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Duration: <i>Indicate count duration, such as AM/PM peak, 13 hours, etc.</i> New Mainline Count (<i>Indicate count year</i>): <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Updated Forecast Volumes:	Start Year (<i>Indicate start year</i>): <input type="checkbox"/> Yes <input type="checkbox"/> No



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	End Year (<i>Indicate end year</i>): <input type="checkbox"/> Yes <input type="checkbox"/> No Other Scenario/Year (<i>Indicate any other scenario/year</i>): <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
New NPMRDS Data:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <i>NPMRDS data is only used in the mainline operational evaluation. Check the N/A box if the site is an intersection.</i>

Attachments/Exhibits (*only include information that was not included in the original Operations Certification Summary*):

- *Turning movement counts (Intersection Traffic Volume Report) (if applicable)*
- *Diagram of traffic volumes for each analysis period: show volumes by direction at each study intersection/corridor. Diagrams from turning movement counts or traffic forecasts may suffice.*

Intersection Control

*Fill out the table below for each **new** intersection not included in the original Operations Certification Summary. Duplicate table if more than one **new** intersection was evaluated.*

New Intersection:	<input type="checkbox"/> N/A
Existing Control Type:	<input type="checkbox"/> Signalized <input type="checkbox"/> TWSC <input type="checkbox"/> AWSC <input type="checkbox"/> Roundabout <input type="checkbox"/> Other: <i>If other, indicate the control type</i> <i>If signalized, indicate if signal is part of coordinated system and/or when the most recent signal timing update was made.</i>
Warrant Analysis	AWSC Warrants: <input type="checkbox"/> Yes <input type="checkbox"/> No Signal Warrants: <input type="checkbox"/> Yes <input type="checkbox"/> No <i>Indicate if any existing or future warrant analyses has been completed</i>
Optimized Signal Timing Evaluated?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <i>Was an evaluation completed to see if the signal timing could be optimized to decrease the delay and queueing on the State Trunk Network (STN) approaches?</i> <i>Results: What were the results of the signal timing optimizations? What changes were made, how did they address the issues on the STN, and how did they impact the minor approach(es)?</i>

Attachments:

- *AWSC warrants (if applicable)*
- *Signal warrants (if applicable)*

Operational Evaluation and Results

Fill out the table below for each site's operational evaluation. Combine multiple sites into one table if the same analysis software, analysis periods, and scenarios are used. List each applicable site or indicate all sites in the first row. Duplicate table as necessary.

Are there any changes to the software, analysis periods, or scenarios evaluated compared to the original Operations Certification Summary?	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, complete the rest of the table</i> <i>If no, skip to the next section</i>
Operational Site of Promise:	
Software used for operational analysis	
Version of software	
Analysis periods	<input type="checkbox"/> AM Peak <input type="checkbox"/> Mid-Day Peak <input type="checkbox"/> PM Peak <input type="checkbox"/> Weekend <input type="checkbox"/> Other: <i>Describe analysis period</i>



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Scenarios Evaluated	<input type="checkbox"/> Existing Conditions <input type="checkbox"/> No-Build (Start Year) <input type="checkbox"/> No-Build (End Year) <input type="checkbox"/> Build (Start Year) <input type="checkbox"/> Build (End Year) <input type="checkbox"/> Other: <i>Describe analysis period</i>
Software Limitations	<i>Identify and document any concerns with respect to operational analysis (e.g. software limitations, assumptions, reliability of data input and/or output, etc.) and corrective action.</i>

Input results in the operational analysis summary tables below for each scenario and analysis period evaluated. Scenarios that were not evaluated do not need to be filled out. The typical scenarios (start year and end year) and analysis periods (AM and PM) have been populated in the tables. If different scenarios or analysis periods are evaluated, modify the tables as necessary. If more than one alternative was evaluated, include results for each alternative. Separate tables are provided for intersection and mainline results. Duplicate or delete tables and rows/columns as necessary.



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Intersection LOS by Movement and Approach															
		Intersection:													
Scenario	Analysis Period	Roadway:													
		Direction:													
		Movement	L	T	R	L	T	R	L	T	R	L	T	R	
No-Build <i>If not applicable, delete the following LOS rows</i> <input type="checkbox"/> N/A															
Start Year <i>(indicate start year)</i>	AM	LOS													
		LOS by approach													
	PM	LOS													
		LOS by approach													
End Year <i>(indicate end year)</i>	AM	LOS													
		LOS by approach													
	PM	LOS													
		LOS by approach													
Build – Alternative 1 <i>(Provide a brief description of the alternative, such as signal, add right turn lane, etc.)</i>															
Start Year <i>(indicate start year)</i>	AM	LOS													
		LOS by approach													
	PM	LOS													
		LOS by approach													
End Year <i>(indicate end year)</i>	AM	LOS													
		LOS by approach													
	PM	LOS													
		LOS by approach													



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Mainline LOS by Direction									
Mainline:									
Segment	Direction	No-Build <input type="checkbox"/> N/A <i>If not applicable, do not fill out</i>				Build Alternative 1 <i>(Provide a brief description of the alternative, such as add aux lane, extend decel lane, etc.)</i>			
		Start Year <i>(indicate start year)</i>		End Year <i>(indicate end year)</i>		Start Year <i>(indicate start year)</i>		End Year <i>(indicate end year)</i>	
		AM	PM	AM	PM	AM	PM	AM	PM

Attachments/Exhibits:

- Software reports for operational analysis
- DT 1887

Queue Analysis

Complete the following table for each new Operational Site of Promise not documented in the original Operations Certification Summary. Based on field data and the 95th-percentile back-of-queue length, assess whether the existing and no-build queues block access to any critical locations. Include a table for each new site evaluated.

New Operational Site of Promise:	<input type="checkbox"/> N/A	
Are there existing/no-build queuing issues?	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, then continue to the next section</i>	
Existing/No-Build Queuing Issues	Location (Intersection/Mainline Approach):	
Queues block access to:	<input type="checkbox"/> Left turn lane -----	<input type="checkbox"/> E/NE; <input type="checkbox"/> W/SW; <input type="checkbox"/> N/NW; <input type="checkbox"/> S/SE
	<input type="checkbox"/> Right turn lane -----	<input type="checkbox"/> E/NE; <input type="checkbox"/> W/SW; <input type="checkbox"/> N/NW; <input type="checkbox"/> S/SE
	<input type="checkbox"/> Driveways-----	<input type="checkbox"/> E/NE; <input type="checkbox"/> W/SW; <input type="checkbox"/> N/NW; <input type="checkbox"/> S/SE
	<input type="checkbox"/> Adjacent Intersection-----	<input type="checkbox"/> E/NE; <input type="checkbox"/> W/SW; <input type="checkbox"/> N/NW; <input type="checkbox"/> S/SE
	<input type="checkbox"/> Railroad Crossing-----	<input type="checkbox"/> E/NE; <input type="checkbox"/> W/SW; <input type="checkbox"/> N/NW; <input type="checkbox"/> S/SE
	<input type="checkbox"/> On/off-ramp -----	<input type="checkbox"/> E/NE; <input type="checkbox"/> W/SW; <input type="checkbox"/> N/NW; <input type="checkbox"/> S/SE
	<input type="checkbox"/> Other Critical Location ----- <i>If other, indicate what is blocked by queues.</i>	<input type="checkbox"/> E/NE; <input type="checkbox"/> W/SW; <input type="checkbox"/> N/NW; <input type="checkbox"/> S/SE
Are there any access control issues?	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>Please provide a description of each access location and an explanation of the issue.</i>	<input type="checkbox"/> E/NE; <input type="checkbox"/> W/SW; <input type="checkbox"/> N/NW; <input type="checkbox"/> S/SE

Discuss the existing and no-build scenario queuing results, how it relates to available storage, and the blocked access for each scenario. In the case of an interchange, indicate how far the queue backs up on to the ramp. Note how the queuing affects the design (e.g., turn bay lengths). Discuss how the build scenario addresses the queuing issues.



Attachments/Exhibits (new operational sites of promise only):

- Exhibit highlighting queues vs. available storage for each analysis period. Provide exhibits for the existing, no-build, and build scenarios. Include a screenshot of the location and visually show estimated queue lengths, available storage, and locations with blocked access.

Economic Appraisal:

Complete the benefit-cost analysis using the Intersection Benefit-Cost Tool or Mainline Facility Benefit-Cost Tool for each **new site and new alternative(s)** identified. Input pass/fail results of the safety and operational checks for each new site and each new alternative into the table. If any of the Fail boxes are checked, discuss why the improvement(s) should be considered.

Operational Site of Promise				
Alternative				
Safety B/C ratio check	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Fatal and injury crash check	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Safety and operations B/C ratio check	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
STN-only B/C ratio check (intersections only)	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A	<input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A

Attachments:

- Intersection Benefit-Cost Tool and/or Mainline Facility Benefit-Cost Tool printouts for the new operational site of promise and/or new alternative.

Summary of Findings:

Summarize the findings of the operational analysis and economic appraisal for each new site, new alternative, and additional improvement evaluated. Include discussion on how each improvement correlates to the operational issue (e.g., Proposed improvement X will mitigate operational problem Y by Z). Clearly highlight the benefit to the State Trunk Network. Do not recommend an alternative if more than one alternative was evaluated. The preferred alternative will be identified in the environmental document.

Attachments/Exhibits (only include sites and alternatives/improvements that were not included in the original Operations Certification Summary):

- Alternative Layout/Schematic should include aerial, dimensions, lane configurations, turn bay lengths, and any other unique geometric components

Attachments:

Only include information not documented in the original Operations Certification Summary. Provide a list of all the attachments/exhibits included in the Operations Certification Summary Amendment. A base list is provided and should be updated to reflect the actual attachments/exhibits provided with the submittal. Attach the final Operations Certification Summary Amendment to the Safety & Operations Certification Document Amendment and submit as a single PDF.

- A. Operational Analysis
 - a. Turning Movement Counts (Intersection Traffic Volume Report)
 - b. Diagram of traffic volumes for each analysis period
 - c. AWSC warrants



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- d. Signal warrants
- e. Software reports for operational analysis
- f. DT 1887
- g. Exhibit highlighting queues vs. available storage for each analysis period
- B. Economic Appraisal
 - a. Printouts from the Intersection Benefit-Cost Tool and/or Mainline Facility Benefit-Cost Tool