 U.S. Department of Transportation Federal Highway Administration  <b>New Hampshire Division</b>		<b>Standard Operating Procedure (SOP)</b>	
		Issued: <u>03/28/2011</u> (date)	Updated: _____ (date)
<b>Subject:</b>	<b>New or Revised Interstate Access Points</b>	Approved: <u>Cynthia Vigue</u> <small>Digitally signed by Cynthia Vigue DN: cn=Cynthia Vigue, o=FHWA, ou=New Hampshire Division, email=cindy.vigue@dot.gov, c=US Date: 2011.03.28 15:48:32 -0400'</small> (signature)	
		Cynthia Vigue, Assistant Division Administrator	

## I. TABLE OF CONTENTS

Section II: References  
Section III: Purpose/Objective  
Section IV: Definitions  
Section V: Scope  
Section VI: Procedures  
Section VII: Controls  
Section VIII: Flow Chart  
Section IX: Appendix

## II. REFERENCES

23 U.S.C. 111, Agreements relating to use of and access to rights-of-way - Interstate System

23 CFR 1.23, Rights-of-way

23 CFR 625, Design Standards for Highways

23 CFR 710, Subpart D, Real Property Management

23 CFR 771, Environmental Impact and Related Procedures

23 CFR 625 Non-regulatory Supplement 03/01/2005

23 CFR 752 Non-regulatory Supplement (Safety Rest Areas) 10/05/1992

23 CFR 630C Non-Regulatory Supplement June 17, 1998

Federal Register: August 27, 2009 (Volume 74, Number 165, Page 43743-43746)

FHWA Policy Memorandum – Operational Analysis of the Access Point to the Interstate System  
August 21, 2001

FHWA Policy Memorandum - Vertical Clearance, Interstate System Coordination of Design  
Exceptions, August 15, 1997

FHWA Policy Memorandum - Delegation of Authority, Requests for New or Revised Access Points on Completed Interstate Highways, August 19, 1996

AASHTO publication "A Policy on Design Standards – Interstate System"

FHWA Interstate System Access Informational Guide

Federal Highway Administration Area Engineer Manual, Federal Highway Administration, 2010.

[http://one.dot.gov/fhwa/CPMDSS/Workforce%20Management%20Documents%20Library/FINAL%202010%20AE%20Manual%206-21-10%20\\_FINAL.pdf](http://one.dot.gov/fhwa/CPMDSS/Workforce%20Management%20Documents%20Library/FINAL%202010%20AE%20Manual%206-21-10%20_FINAL.pdf)

FHWA Order M1100.1A FHWA Delegations and Organization Manual

<http://www.fhwa.dot.gov/legsregs/directives/orders/m11001a.htm>

FHWA "Policy on Access to the Interstate"

<http://www.fhwa.dot.gov/programadmin/fraccess.cfm>

FHWA/NHDOT Stewardship and Oversight Agreement – October 2008

NHDOT Highway Design Manual

### **III. PURPOSE/OBJECTIVE**

The purpose of this SOP is to establish FHWA review and approval procedures for new or revised Interstate access points in accordance with the August 27, 2009 Interstate Access Policy and related FHWA guidance and policies. This Interstate Access Policy is applicable to new or revised access to existing Interstate facilities regardless of the funding of the original construction or regardless of the funding for the new or revised access points. This includes routes incorporated into the Interstate System under the provisions of 23 U.S.C. 103(c)(4)(A) or other legislation.

A primary role of FHWA is to maintain the Interstate System to provide the highest level of service in terms of safety and mobility. One means by which this is accomplished is through the review and approval of an Interstate Access Change Request (IACR) that documents NHDOT's activities to manage the Interstate system.

There are several different types of new or modifications that can occur that impact the Interstate's access, but they can generally be categorized as temporary or permanent, which also includes "locked gates".

1. Temporary Interstate access approvals require an IACR which briefly addresses the eight points described in the FHWA Policy and clearly states the duration of the temporary access. The expectation is that the NEPA procedure for temporary access has been completed through project development.

Temporary construction access is usually granted only for construction activities within the Interstate right-of-way. The only circumstances that would justify temporary construction access to an adjacent property is when the construction is occurring in an isolated location with no other

reasonable means of access, the access is for a limited and finite period time, and there will not be a recurring need. The needs for this type of access must be weighed against the safety the operational effects to the Interstate users, which is usually greater in higher traffic volume areas.

2. Permanent Interstate access approval requires NEPA clearance prior to the FHWA approval. The process should be a two step process: a) conceptual or draft analysis and acceptance for NEPA clearance and b) final analysis and FHWA approval.

Locked gate access is a form of permanent access change and is typically used to provide non-public access to the interstate by such entities as emergency responders, e.g., local fire departments, or access by DOT maintenance forces. These types of request should also address the eight points described in the FHWA Policy, though several of the points may ultimately not apply or may apply only in a limited measure and can be addressed in an abbreviated fashion. In addition, access point for emergency responders or others outside of NHDOT control should include agreements that clearly spell out restrictions and limitations, as well as measures to be taken if not followed, e.g., closing of the access point. This agreement usually takes the form of a Use and Occupancy Agreement when the access is going to be used by others outside of the DOT. This agreement must be approved by FHWA. An example Use and Occupancy Agreement is included in Appendix E.

Since locked-gate accesses are intended only for a few select users, they should be inconspicuous to the general travelling public with limited improvements. Key consideration in the location and design of locked-gate access are sight distance where vehicles will be entering the freeway and acceleration of the entering vehicles. The proposal should also clearly describe to whom access is granted, how the access will be secured, and maintenance responsibilities.

#### **IV. DEFINITIONS**

STA – State Transportation Agency

FHWA – Federal Highway Administration

NHDOT – New Hampshire Department of Transportation

DIACR – Draft Interstate Access Change Request

AE – Area Engineer

TMA – Transportation Management Area

DA – Division Administrator

TL – Engineering and Operations Team Leader

Access Point – Each break in the control of access to the Interstate System right-of-way is considered to be an access point. For the purpose of applying this policy, each entrance or exit point, including "locked gate" access, is considered to be an access point. For example, a

diamond interchange configuration has four access points. Ramps providing access to rest areas, information centers, and weigh stations within the Interstate controlled access are not considered access points for the purpose of applying the Interstate Access Policy.

Interstate Access Change Request (IACR) – Term used to describe the formal request made to FHWA by a STA. These requests are inclusive of the written documentation that supports the formal request and the documentation of the coordination with other agencies. STAs utilize various terms for the requests submitted to the FHWA, usually in the form of reports such as an Interchange Justification Reports (IJR), Interchange Modification Report (IMR), Interstate Access Report (IAR), Interchange Operational Analysis Report (IOAR), Access Approval Report, Interstate Access Justification Study, and so forth. Many States refer to these terms within their own written procedures and manuals. Only STAs, as the owners and operators of the Interstate System, are authorized to submit Interstate System Access Change Request for review by the FHWA Division Office.

Change in Interstate Access – A change in access is considered by FHWA as any modification to the control-of-access right-of-way on the Interstate System. This includes locked gate access, access to ramps or collector-distributor roadways or other facilities that are functionally part of the Interstate System. Re-configuration of an interchange that affects the operational characteristics of the Interstate System is also considered as a change in access. Changes in operations, such as conversion of HOV lanes to general purpose use lanes, may affect interchanges and result in a change in access.

Engineering and Operational Acceptability – An FHWA determination that a proposed new or revised access point is acceptable prior to the completion of the NEPA process. To offer maximum flexibility any proposed access points can be submitted for a determination of engineering and operational acceptability prior to completion of the NEPA process. In this manner, the State highway agency can determine if a proposal is acceptable for inclusion as an alternative in the environmental process.

Methods and Assumptions Document – The intent of this technical memorandum is to gain endorsement of the methods and assumptions approach to supplement the Interstate Access Change Request. This should be consistent with transportation methods and assumptions for analysis being performed for the project that will be applied within the Change in Access Justification process and subsequent documentation.

IACR Approval – The approval of an IACR covers only the revised or new access proposed in the IACR and is good for eight (8) years from the time of approval. If the project has not progressed to construction within eight years, then an updated justification report based on current and projected future conditions must be submitted to FHWA to receive either an affirmative determination of engineering and operational acceptability, or final approval if all other requirements have been satisfied (23 U.S.C. 111, 23 CFR 625.2(a), and 23 CFR 771.129).

## **V. SCOPE**

The intent of the SOP is to provide guidance for Division personnel reviewing and approving new or modified Interstate access points. Sections of this SOP may also be used to assist the NHDOT in developing both a DIACR and IACR, as it provides details for what FHWA will be looking for in either document.

## VI. PROCEDURES

The AE is NHDOT's contact for Interstate new/modified interchange related access requests and may be a participant on any NHDOT team working on access issues in the AE's geographic areas. At the conclusion of the State's access process, the Final IACR shall be submitted to the attention of the DA. The AE reviews the report using the Prompt List for Review of the Interstate System Access Change Request in Appendix A with the necessary assistance from other specialist assigned to the Division and other offices within FHWA. The AE at the conclusion of the review shall recommend an action to the DA or TL.

**Three Phased Process:** The access request process has been divided up into three distinct phases to allow for early determinations and clarity.

(Note: For a Temporary or Gated IACR, several steps within the three phases maybe omitted as determined by the AE.)

### **Phase I: Interchange Warrant Process:**

1. NHDOT identifies the need: NHDOT and local governments, through the planning process, identifies the need for new or modified access. This action is then documented in the appropriate planning documents (i.e. Long Range Transportation Plan). The need should quantify the operational characteristics of existing conditions and where known future concerns exist through the planning process.
2. NHDOT coordinates with respective Area Engineer (AE): NHDOT, early on in the process, should coordinate the project / study needs with the respective AE. The operational and safety goals and objectives of the study should be confirmed to quantify the desired outcome of the project or potential strategy which addresses the need. The AE will solicit assistance from other FHWA personnel in the office, Resource Center, and/or HQ as deemed necessary to assist in identifying appropriate goals and objectives.
3. Is the project reasonable: NHDOT in consultation with FHWA will conduct an initial assessment of the proposed access change reasonableness to determine if the project is reasonable and then make an appropriate decision on moving forward with the request, NHDOT and FHWA will follow the process developed in the Interchange Warrant Process (See Appendix B).
4. NHDOT and FHWA coordinate on Assumption Document (See Appendix C): The Assumption Document sets the framework for the transportation analysis for the IACR. This document includes the analysis years, the limits of the study, travel demand forecasting, and modeling and analysis methodologies, assumed land use and background infrastructure improvements, safety analysis methods, and operational parameters and methods.

**Phase II: Draft Interstate Access Change Request (DIACR):**

5. DIACR Review: NHDOT in consultation with the respective AE develops the DIACR and submits to Division for review and comments. The AE will work with others in FHWA to determine review and provide feedback to NHDOT.

The DIACR request must be submitted by NHDOT with recommendation to the FHWA Division Office, regardless of who is initiating the request. Prior to submittal to FHWA, the request shall be reviewed by appropriate offices within NHDOT for operational and engineering acceptability and the submitting correspondence shall indicate who has reviewed it. Coordination with NHDOT prior to submittal is welcomed and encouraged to enhance the review timeline when transmitted to the Division.

The request should contain sufficient information and details. The referencing of information in other documents (Feasibility Study, Environmental Documents) is acceptable however to promote traceable and transparency to individuals unfamiliar with the study, it is encouraged that relevant information be clearly presented in the DIACR itself; thereby not requiring an individual to seek out information in other documents. The information from these documents should be provided in the appropriate section of the access request. Excerpts may be included as appendices.

The study should consist of an introduction that describes the project's purpose and need, including quantifiable characteristics which convey the operational, safety or access problem. The document should be clearly written for someone that is not familiar with the project. Vicinity maps and other visualization techniques are required. There are cases where someone who is not familiar with the detail of the project or the area might review the request. Therefore, the request should contain supporting documentation addressing each of the eight requirements within FHWA's Policy with detail respective to the type of access requested (the DIACR might be light on this point, however, once the IACR is submitted detail shall be provided). This section should stress the third point of the eight points in sufficient detail to allow the reviewer to make an informed decision.

6. AE Decision: The AE in consultation with others in the Division determines if the concept is acceptable.
7. NHDOT Decision: NHDOT at this time would decide if the project should move forward.

**Phase III: Final Interstate Access Change Request:**

8. NHDOT Recommends Approval of the package: NHDOT will now take the DIACR and update with appropriate data and information to convert the DIACR into a formal IACR for submission to the FHWA. NHDOT will transmit four copies of the document along with a scroll plot (24" x 36") of each interchange addressed with each document (a total of four (4) plots) to FHWA with a request for review and approval focusing on the eight points within FHWA's policy. During the review of the IACR, it is the responsibility of

the AE to request other comments for consideration (FHWA Division Program Managers and FHWA Resource Center). However, it is the AE's responsibility to consolidate comments and requirements to speak as one voice for FHWA. The AE shall coordinate and recommend approval/disapproval to the approving authority. A template outline is provided, which may be adapted to the project (see Appendix D).

9. IACR Review: Division AE in consultation with others in the agency reviews and provides comments / feedback to the IACR as needed.
10. Decision of Engineering and Operation Acceptability: The AE, in consultation with others in the agency, formalizes the decision on the Engineering and Operation Acceptability pending final project NEPA approval.
11. Subsequent Project Development Phases and FHWA Review: The AE submits IACR for final review by HQ if needed. The transmittal to HQ should include a recommendation from the Division.
12. Final Approval: FHWA provides final approval action on the IACR.

The following details how the request will be routed once it is submitted to the Division Office.

- The NHDOT submits a DIACR or IACR to the FHWA New Hampshire Division for analysis or approval. FHWA will only accept the DIACR and IACR from NHDOT. The request contains supporting documentation addressing each of the eight requirements within FHWA's Interstate Access Policy with detail respective to the type of access requested.
- The AE files the request and documents electronically in both the Project file and appropriate Subject file. The DIACR or IACR is then reviewed by to the respective Area Engineer.
- A DIACR should contain all information that is readily available at the point in time to assess what action is being taken to assure the integrity of the Interstate through the eight points identified within FHWA Interstate Policy. The Division Office can not approve the access based upon the conceptual request, or DIACR. The Division Office can only accept the concept with anticipation of receiving a final IACR for review and approval once NEPA is complete. The DIACR concept approval is to help ensure that the proposal is a reasonable alternative and if selected can be approved by the FHWA. During the review of the DIACR, it is the responsibility of the Area Engineer to request others comments for consideration (FHWA Division Program Managers, FHWA Resource Center, etc.). However, it is the Area Engineer's responsibility to consolidate comments and requirements to speak as one voice for FHWA.
- Once NEPA is complete, final design activities begin and the DIACR is converted into an IACR. NHDOT will transmit the IACR to FHWA and request approval. FHWA will review the IACR focusing on the eight points within FHWA's policy. During the review of the IACR, it is the responsibility of the Area Engineer to request others comments for consideration (FHWA Division Program Managers, Resource Center, etc.). However, it is the Area Engineer's responsibility to consolidate comments and requirements to speak

as one voice for FHWA. The Area Engineer shall coordinate and recommend for approval to the approving authority (see the Delegation of Approval table below).

- Some IACRs that involve major modifications or new access within a Transportation Management Area (TMA) requires direct coordination with FHWA HQ, as they possess the approving authority. It is the Area Engineer’s responsibility to perform this coordination, both at the DIACR and IACR stages and assure timely action.
- All communications and approval actions associated with the procedures should be routed through the Administrative Assistant to be filed in the Project and appropriate subject files.

Following the guidance outlined in the August 2009 revised policy memorandum, Interstate access approvals have been categorized and re-delegated as shown in the following table. This table also shows the review timeline to which the Division Office is committed:

<b>Action</b>	<b>Responsibility</b>	<b>Review Schedule</b>
1. Modification to freeway-to-crossroad (service) interchange, e.g., change from diamond to single point urban, doubling lanes for on-ramp with double lane entry to Interstate mainline, adding a loop ramp to existing diamond interchange, etc.	FHWA Division	30-day review upon receipt of request
2. Addition of entrance or exit ramps which complete basic movements at existing interchanges	FHWA Division	30-day review upon receipt of request
3. A new freeway to crossroad (service) interchange in rural and non-TMA areas; (this is a full interchange that provides for all directions of travel).	FHWA Division	30-day review upon receipt of request
4. A new freeway to crossroad (service) interchange in TMA*	FHWA Headquarters	60-day review upon receipt of request
5. New partial interchanges or new ramps to/from continuous frontage road (slip ramps) that create a partial interchange. (A partial interchange does not provide for all directions of travel. For this reason, partial interchanges are strongly discouraged.)	FHWA Headquarters	60-day review upon receipt of request
6. Major modification to freeway-to-freeway (system) interchanges, e.g., change from cloverleaf to directional	FHWA Headquarters	60-day review upon receipt of request
7. New freeway-to-freeway (system) interchanges.	FHWA Headquarters	60-day review upon receipt of request

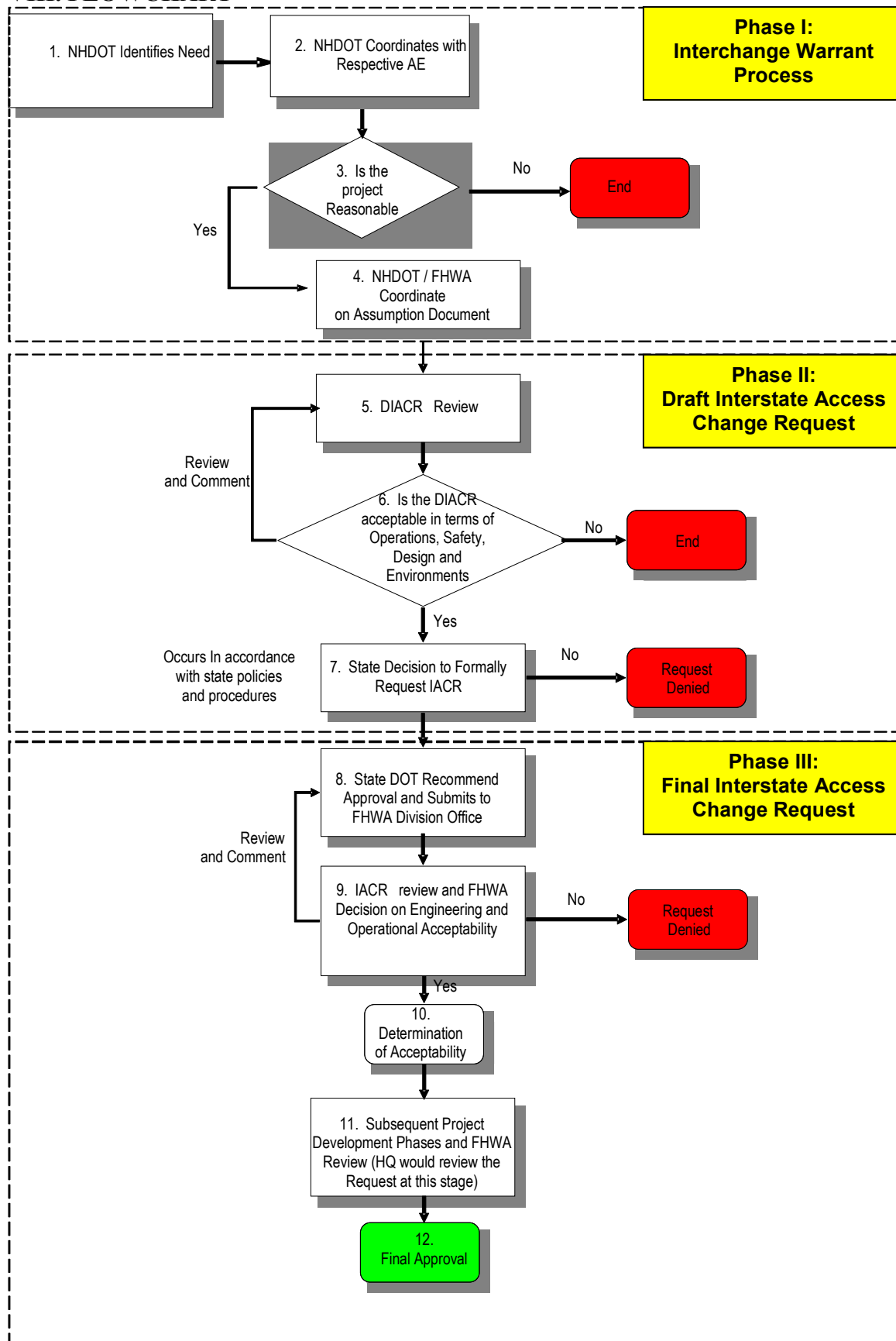


## VII. CONTROLS

This table outlines the delegation of authority for approval actions.

<b>DELEGATION OF APPROVAL WITHIN THE DIVISION OFFICE</b>		
Type of Access Request	In TMA	Not in TMA
New Freeway-to-Freeway Interchange	*DA	*DA
Major Modification of Freeway-to-Freeway Interchange	*DA	*DA
New Partial Interchange	*DA	*DA
New Freeway-to-Crossroad Interchange	*DA	DA
Modification of Existing Freeway-to-Crossroad Interchange	TL	TL
Operational Analysis	TL	TL
Temporary Construction Access	TL	TL
Locked Gate	TL	TL
*Requires prior approval from HQ	DA – Division Administrator	TL – Project Delivery Team Leader

## VIII. FLOWCHART



## IX. APPENDIX

### Appendix A –Prompt List for Review of Interstate System Access Change Request

<p style="text-align: center;"><b>Prompt List for Review of Interstate System Access Change Requests</b></p>		
Adequately Addressed?		<b>FHWA Interstate Access Policy Points</b>
Yes	No	
		<p><b>Policy Point 1:</b> The need being addressed by the request cannot be adequately satisfied by existing interchanges to the Interstate, and/or local roads and streets in the corridor can neither provide the desired access, nor can they be reasonably improved (such as access control along surface streets, improving traffic control, modifying ramp terminals and intersections, adding turn bays or lengthening storage) to satisfactorily accommodate the design-year traffic demands (23 CFR 625.2(a)).</p>
		<p><b>Policy Point 2:</b> The need being addressed by the request cannot be adequately satisfied by reasonable transportation system management (such as ramp metering, mass transit, and HOV facilities), geometric design, and alternative improvements to the Interstate without the proposed change(s) in access (23 CFR 625.2(a)).</p>
		<p><b>Policy Point 3:</b> An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis shall, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, shall be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access must include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request must also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).</p>
		<p><b>Policy Point 4:</b> The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access for managed lanes (e.g., transit, HOVs, HOT lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)).</p>
		<p><b>Policy Point 5:</b> The proposal considers and is consistent with local and regional land use and transportation plans. Prior to receiving final approval, all requests for new or revised access must be included in an adopted Metropolitan Transportation Plan, in the adopted Statewide or Metropolitan Transportation Improvement Program (STIP or TIP), and the Congestion Management Process within transportation management areas, as appropriate, and as specified in 23 CFR part 450, and the transportation conformity requirements of 40 CFR parts 51 and 93.</p>

## Prompt List for Review of Interstate System Access Change Requests

Adequately Addressed?	<b>FHWA Interstate Access Policy Points</b>
	<p><b><u>Policy Point 6:</u></b> In corridors where the potential exists for future multiple interchange additions, a comprehensive corridor or network study must accompany all requests for new or revised access with recommendations that address all of the proposed and desired access changes within the context of a longer-range system or network plan (23 U.S.C. 109(d), 23 CFR 625.2(a), 655.603(d), and 771.111).</p>
	<p><b><u>Policy Point 7:</u></b> When a new or revised access point is due to a new, expanded, or substantial change in current or planned future development or land use, requests must demonstrate appropriate coordination has occurred between the development and any proposed transportation system improvements (23 CFR 625.2(a) and 655.603(d)). The request must describe the commitments agreed upon to assure adequate collection and dispersion of the traffic resulting from the development with the adjoining local street network and Interstate access point (23 CFR 625.2(a) and 655.603(d)).</p>
	<p><b><u>Policy Point 8:</u></b> The proposal can be expected to be included as an alternative in the required environmental evaluation, review and processing. The proposal should include supporting information and current status of the environmental processing (23 CFR 771.111).</p>

**Policy Point 1:** “The need being addressed by the request cannot be adequately satisfied by existing interchanges to the Interstate, and/or local roads and streets in the corridor can neither provide the desired access, nor can they be reasonably improved (such as access control along surface streets, improving traffic control, modifying ramp terminals and intersections, adding turn bays or lengthening storage) to satisfactorily accommodate the design-year traffic demands (23 CFR 625.2(a)).”

<b>Addressed Adequately?</b>			<b>Question</b>	<b>Reference Location</b>
<b>Y</b>	<b>N</b>	<b>N/A</b>		
			Does the access request clearly describe the need and purpose of the proposal and identify project goals and objectives that are specific and measurable?	
			Is the proposal in the best interest of the public, or does it merely serve a narrow interest?	
			Is the proposal serving a regional transportation need, or is it merely compensating for deficiencies in the local network of arterials and collectors?	
			In lieu of granting new access, is there any reasonable alternative consisting of improvements to the existing roadway(s) or adjacent access points that could serve the need and purpose?	
			Has the evaluation of existing interchanges and the local road network taken into account all proposed improvements currently identified in the State and/or Regional Long Range Plan?	
			Will the proposed change in access result in needed upgrades or improvements to the cross road for a significant distance away from the interchange?	

**Policy Point 2:** “The need being addressed by the request cannot be adequately satisfied by reasonable transportation system management (such as ramp metering, mass transit, and HOV facilities), geometric design, and alternative improvements to the Interstate without the proposed change(s) in access (23 CFR 625.2(a)).”

<b>Addressed Adequately?</b> Y    N    N/A			<b>Question</b>	<b>Reference Location</b>
			Was FHWA actively involved in preliminary studies and decisions? If not, then more detailed information may be required in support of proposed action.	
			Did the study area cover sufficient area to allow for an evaluation of all reasonable alternatives?	
			Was a No-Build Alternative evaluated?	
			Considering the context of the proposal, is this the best location for the proposed new interchange?	
			Were different interchange configurations (Tight diamond, SPDI, Parclo) considered?	AASHTO Greenbook Chapter 10
			Were pedestrians and bicyclists considered in the alternative evaluation?	
			Was there an evaluation of different intersection configurations (stop control, signal, roundabout, free right turns, etc?)	
			Have Transportation Systems Management (i.e. HOV, ITS, Ramp Metering, Transit etc.) options been evaluated as an alternative to a new or modification to an existing interchange?	
			Did the report discuss how TSM alternatives were evaluated and eliminated from consideration?	
			Does the proposal consider any future planned TSM strategies and is the design consistent with the ability to implement the future TSM strategies?	

**Policy Point 3:** “An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis shall, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, shall be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access must include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request must also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).”

Addressed Adequately? Y N N/A			Question	Reference Location
			Does the report demonstrate that a proper traffic operational analysis was conducted? The analysis should include the applicable basic freeway segments, freeway weaving segments, freeway ramp segments, ramp junctions and crossroad intersections related to the proposed access point and at least the two adjacent interchanges.	
			Does the report include a <b>safety</b> analysis of the mainline, ramps and intersections of the proposed access point and the nearest adjacent interchange (provided they are near enough that it is reasonable to assume there may be impacts)?	
			Has the design traffic volume been validated?	
			Does the report include verification that the data used in the traffic analysis is consistent with the traffic and air quality models MPOs use to develop their current Transportation Plan (20-year) and Transportation Improvement Program (TIP)?	
			Does the report include a design period of 20 years commencing at the time of project approval (PS&E approval)?	
			Does the report include quantitative analyses and results to identify operational differences between alternatives that are heavily congested?	
			Has a conceptual signing plan been provided?	
			Is guidance signing (i.e., way-finding or trail blazing signs) clear and simple?	<a href="#">MUTCD Chapter 2E: Guide Signs – Freeways and Expressways</a>
			Do the results of the operational analysis result in a significant adverse impact to existing or future conditions?	
			Will the proposed change in access result in needed upgrades or improvements to the cross road for a significant distance away from the interchange? If so, have impacts to the local network been disclosed and fully evaluated?"	
			Are the cross roads or adjacent surface level roads and intersections affected by the proposed access point analyzed to the extent (length) where impacts caused or affecting the new proposed access point are disclosed to the appropriate managing jurisdiction?	

**Policy Point 3:** “An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis shall, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, shall be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access must include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request must also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).”

Addressed Adequately?			Question	Reference Location
Y	N	N/A		
			Are pedestrian and/or bicycle facilities included (as appropriate) and do these facilities provide for reasonable accommodation?	
			Does the proposed access secure sufficient Limits of Access adjacent to the Interchange ramps?	AASHTO’s “A Policy on Design Standards Interstate System, 2005” Pg. 2; <a href="#">NCHRP Synthesis 332</a>
			Does the proximity of the nearest crossroad intersections to the ramps contribute to safety or operational problems? Can they be mitigated??	
			In addition to HCS, what analysis tools were employed and were they appropriate?	
			Has the proposal distinguished between nominal safety (i.e. adherence to design policies and standards) and substantive safety (actual and expected safety performance)?	
			Will any individual elements within the recommended alternative be degraded operationally as a result of this action? If yes, are reasons provided to accept them?	
			In evaluating whether the proposal has a "significant adverse impact" on safety, has the State Strategic Highway Safety Plan been used as a benchmark?	
			Are the proposed interchange design configurations able to satisfactorily accommodate the design year traffic volumes?	
			If the project is to be built in stages, has the traffic operational and safety analyses considered the interim stages of the proposal?	



**Policy Point 4:** “The proposed access connects to a public road only and will provide for all traffic movements. Less than “full interchanges" may be considered on a case-by-case basis for applications requiring special access for managed lanes (e.g., transit, HOVs, HOT lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)).”

<b>Addressed Adequately?</b>			<b>Question</b>	<b>Reference Location</b>
<b>Y</b>	<b>N</b>	<b>N/A</b>		
			Does the proposed access connect to a public road?	
			Are all traffic movements for full interchange access provided?	
			If not, is the proposed access for special purposes such as transit vehicles, HOVs, and/or a park and ride lot?	
			If a partial interchange is proposed, is there sufficient justification for providing only a partial interchange?	AASHTO Greenbook 2004 Pg. 821-823
			If a partial interchange is proposed; was a full interchange evaluated as an alternative and is there sufficient justification to eliminate or discard it?	
			Is sufficient ROW available (or being acquired) to provide a full interchange at a future date (staged construction)?	
			Are you comfortable with how the missing movements will be accommodated on the surface streets and adjacent interchanges?	
			Does FHWA support the selection of design controls/criteria and desired operational goals?	
			Does the proposed access meet or exceed current design standards for the Interstate System?	AASHTO’s Greenbook and A Policy on Design Standards Interstate System, 2005
			If not, have anticipated design exceptions been identified and reviewed (at least conceptually)?	
			If expected design exceptions could have significant operational impacts on the Interstate and/or Crossroad system, are mitigation measures described?	
			Will the length of access control along the crossroad provide for acceptable operations and safety? (100-300' is a minimum. Additional access control is strongly encouraged when needed for safety and operational enhancement)	AASHTO "A Policy on Design Standards Interstate System" 2005
			Does FHWA support selection of opening and design years?	

**Policy Point 4:** “The proposed access connects to a public road only and will provide for all traffic movements. Less than “full interchanges" may be considered on a case-by-case basis for applications requiring special access for managed lanes (e.g., transit, HOVs, HOT lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)).”

<b>Addressed Adequately?</b>			<b>Question</b>	<b>Reference Location</b>
<b>Y</b>	<b>N</b>	<b>N/A</b>		
			Have all design criteria (including but not limited to the following) been adequately addressed?	
			a. Sight distance at ramp terminals (Don't overlook signal heads obscured by structures.)	AASHTO Greenbook 2004 Pg. 841
			b. Sufficient storage on ramp to prevent queues from spilling on to the Interstate (based on current and/or future projected traffic demand)	
			c. Vertical clearance	AASHTO "A Policy on Design Standards Interstate System" 2005
			d. Pedestrian access through the interchange	AASHTO Greenbook 2004 Pg. 864
			e. Length of accel/decel lanes	AASHTO Greenbook 2004 Pg. 823, 847
			f. Length of tapers	AASHTO Greenbook 2004 Pg. 849
			g. Spacing between ramps	Greenbook pg 843 & Ex. 10-68 and operational analysis
			h. Lane continuity	AASHTO Greenbook 2004 Pg. 810
			i. Lane balance	AASHTO Greenbook 2004 Pg. 810 AASHTO Greenbook 2004 Pg. 807
			j. Uniformity in interchange design and operational patterns (i.e. right-side ramps, exit design consistent w/adjacent interchanges)	
			Has each movement of the proposal been "tested" for ease of operation?	AASHTO Greenbook 2004 Pg. 863

**Policy Point 5:** “The proposal considers and is consistent with local and regional land use and transportation plans. Prior to receiving final approval, all requests for new or revised access must be included in an adopted Metropolitan Transportation Plan, in the adopted Statewide or Metropolitan Transportation Improvement Program (STIP or TIP), and the Congestion Management Process within transportation management areas, as appropriate, and as specified in 23 CFR part 450, and the transportation conformity requirements of 40 CFR parts 51 and 93.”

Addressed Adequately?			Question	Reference Location
Y	N	N/A		
			Does the IJR discuss or include (as appropriate) other project(s), studies or planned actions that may have an effect on the report analysis results?	
			Does the project conform to the local planning, MPO or other related plans?	
			Does the report include an endorsement of land use plans by the appropriate government entity before it is utilized for traffic generation purposes?	
			Is the access request located within a Transportation Management Areas? (TMAs are metropolitan areas of 200,000 or more in population)	<a href="http://hepgis.fhwa.dot.gov/hepgis_v2/Urbanboundaries/M ap.aspx">http://hepgis.fhwa.dot.gov/hepgis_v2/Urbanboundaries/M ap.aspx</a>
			Is the access request located within a non-attainment area for air quality? (requests for access in a non-attainment or maintenance areas for air quality must be a part of a conforming transportation plan)	
			Is the project included in the TIP/STIP and LRTP?	
			Is the access point covered as a part of an Interstate corridor study or plan? ( <i>especially important for areas where the potential exists for construction of future adjacent interchanges</i> )	

**Policy Point 6:** “In corridors where the potential exists for future multiple interchange additions, a comprehensive corridor or network study must accompany all requests for new or revised access with recommendations that address all of the proposed and desired access changes within the context of a longer-range system or network plan (23 U.S.C. 109(d), 23 CFR 625.2(a), 655.603(d), and 771.111).”

<b>Addressed Adequately?</b> Y    N    N/A			<b>Question</b>	<b>Reference Location</b>
			Is it possible that new interchange(s) not addressed in the IJR could be added within an area of influence to the proposed access point? (If so, could the proposal preclude or otherwise be affected by any future access points?)	
			Does the IJR report include the traffic volumes generated by any future additional interchanges within a vicinity of influence that are proposed?	
			Does the IJR report fail to include any other proposed interstate access points within a vicinity of influence that are being proposed or are in the current long range construction program?	

**Policy Point 7:** “When a new or revised access point is due to a new, expanded, or substantial change in current or planned future development or land use, requests must demonstrate appropriate coordination has occurred between the development and any proposed transportation system improvements (23 CFR 625.2(a) and 655.603(d)). The request must describe the commitments agreed upon to assure adequate collection and dispersion of the traffic resulting from the development with the adjoining local street network and Interstate access point (23 CFR 625.2(a) and 655.603(d)).”

<b>Addressed Adequately?</b> Y    N    N/A			<b>Question</b>	<b>Reference Location</b>
			Does the access request adequately demonstrate that an appropriate effort of coordination has been made with appropriate proposed developments?	
			Are the proposed improvements compatible with the existing street network or are other improvements needed?	
			Are there any pre-condition contingencies required in regards to the timing of other improvements?	
			Have all commitments to improve the local transportation network been included in a TIP/STIP/LRTP prior to the Interstate access approval (final approval of NEPA document)?	
			If pre-condition contingencies are required, are pertinent parties in agreement with these contingencies and is this documented?	
			If the proposed improvements are founded on the need for providing access to new development, are appropriate commitments in place to ensure that the development will likely occur as planned?	
			If project is privately funded, are appropriate measures in place to ensure improvements will be completed if the developer is unable to meet financial obligations?	
			If the purpose and need to accommodate new development/traffic demands aren't fully known, is a worst case scenario used for future traffic?	
			Does the project require financial or infrastructure commitments from other agencies, organizations, or private entities?	

**Policy Point 8:** “The proposal can be expected to be included as an alternative in the required environmental evaluation, review and processing. The proposal should include supporting information and current status of the environmental processing (23 CFR 771.111).”

<b>Addressed Adequately?</b> Y    N    N/A			<b>Question</b>	<b>Reference Location</b>
			Are there any known social or environmental issues that could affect the proposal?	
			Is the project consistent with the current TIP/STIP and LRTP and/or proposed amendments to the plan?	
			Although NEPA is a separate action, is an environmental overview for the proposed improvements included?	
			Is it appropriate to emphasize to the project stakeholders that the access approval will be handled as a two-step process? (i.e. Step 1: Engineering and Operational Acceptability and Step 2: Environmental Approvals)	
			Are all funding commitments included in a TIP/STIP/LRTP prior to the Interstate access approval (prior to final approval of the NEPA document)?	
			Are all commitments included in a TIP/STIP/LRTP prior to the Interstate access approval (prior to final approval of the NEPA document)?	

## **Appendix B –Warrant Process** **Policy**

New interchanges are only considered after transportation management strategies (TMS), grade separation alternatives or other improvements to adjacent interchanges and the supporting arterial system are found to be unable to provide necessary regional mobility.

### **Interchange Warrant Process**

In order to make the Interchange Request Process for new interchanges on freeways more efficient and effective, all new interchanges shall meet the following warrants before an Interstate Access Request is initiated. All warrants must be met to proceed with a freeway access request.

This warrant study shall be submitted to FHWA by NHDOT for an initial determination on the need for a new interchange, i.e., is it warranted? NHDOT may request advice from the FHWA the documentation necessary to process the warrant study and FHWA will respond accordingly. NHDOT may request a formal response from FHWA.

Based upon the information provided in the warrant study the FHWA will make an initial determination on the need for the new interchange. All five warrants shall be met to provide a positive finding on the need assessment for the interchange.

If the request is denied, no further Interstate Access request documents will be accepted. If the warrants are met a formal Access Request may be pursued by NHDOT.

#### **Warrant 1**

The existing interchanges and/or local road cannot provide necessary regional mobility.

#### **Warrant 2**

The local roadway system including arterial roadways, collector roadways and local streets cannot be improved to serve existing interchanges, thereby providing necessary access to the freeway system.

#### **Warrant 3**

Traffic management, transit service, and demand management does not or cannot provide necessary regional mobility.

#### **Warrant 4**

Demonstration that access provides an appropriate balance between access and regional mobility needs while maintaining the limited access facility operational integrity.

#### **Warrant 5**

The proposed interchange is consistent with the Regional Transportation Plan, The TMA's Long Range Plan and the Statewide Long Range Plan

## **Documentation Requirements**

Documentation should be of sufficient depth to clearly answer the 5 warrants. This is a preliminary step to determine if the proposed interchanged warrants an interstate access study and therefore is significantly less rigorous and detailed than that process. The needs analysis in warrant 1-4 should include appropriate traffic forecast studies, land use planning information, sketch planning analysis of the transportation system, capacity analysis of freeway facilities and local road systems, and other pertinent information. The operational and safety performance data supporting and statements or conclusions is considered pertinent information. This should be presented with a context of time and geographic reference.



## Appendix C –Assumption Document

### **Interstate Access Change Request Method and Assumption Memorandum**

The intent of this technical memorandum is to gain endorsement of the methods and assumptions approach to supplement the Interstate Access Change Request. This should be consistent with transportation methods and assumptions for analysis being performed for the project that will be applied within the Change in Access Justification process and subsequent documentation. Two areas that need to be highlighted in this document are: 1. **Methods and Assumptions for Travel Demand Modeling Technical Memorandum** and 2. **Traffic Operations Analysis Methods and Assumptions Technical Memorandum**. Provided below is an example outline of what should be considered and documented in the assumption document:

#### **1. Introduction and Project Description:**

This section identified all parties involved, the type of interchange proposal, and location. It should also describe what the project entails (figures should demonstrate the study area, construction limits, and traffic area of influence).

#### **2. Problem, Purpose and Needs, Goals and Objectives:**

Before embarking on any major analytical effort, it is recommended that the problem, purpose and need be defined. **For example purposes only**, a problem definition may include performance characteristics stating that the existing corridor realizes an average speed of 37 mph during the time period of 5:15 to 5:30 p.m. between two known points, and is accompanied by an average throughput of 1,628 vehicles per hour per lane; this same segment is able to support a average throughput of 2,011 vehicles per hour per lane between 4 to 4:15 p.m. with an average speed of 53 mph. By defining the problem, along with these types of operational performance measures, the analyst begins to focus on a top priority issue. This would not be possible with a broad all-encompassing statement that ***the existing facility is congested or access is currently not supported***.

The study goal and objective can then be established to further define the focus of the analysis and the desired future conditions for the facility. **For example purposes only**, a goal and objective statement may emphasize the following:

*It is a goal and objective of this study to identify an alternative which:*

- *Provides for minimum average freeway speeds of 47 mph throughout the peak period between Points A and Point B.*
- *Supports a freeway flow rate of 2,150 passenger cars per hour per lane (pcphpl) throughout the peak period.*
- *Provides for ramp operations which do not generate queues or spillback which impact operations on the freeway or major crossroad.*
- *All parcels are within 2.5 miles of a major arterial, which has the following operational characteristics:*
  - *Arterial operations do not result in phase failure or spillback along the approach defined as the major roadway.*
  - *Operations favor traffic flowing along the major roadway at an average speed of 35 mph.*

- *Supports continuous arterial flow along the major roadway for a minimum of five signals before a vehicle is required to stop.*
- *Minimizes delay at all signalized approaches.*

Overall, the study objectives should define why the analysis is needed, what questions the analysis should answer, and what type of information is required to support a more informed decision.

### 3. **Scope:**

This section clearly describes the scope of the project and also lays out the operational and access issues. Before embarking on any major analytical effort, it is recommended that the problem, purpose and need be defined. Here is where the applicant provides a scope of the project. Several questions (although not exhaustive) relating to the required scope that should be considered are presented below:

- What are the project objectives?
- What are the available resources (all partners)?
- What are the project constraints?
- What are the limits of the project (Operational / Geographic limits)?
- What is the proximity to adjacent interchanges and intersections that have operational / environmental impact to the project?
- How does the study area influence operations at adjacent locations within the transportation network?
- What alternatives / modes are being considered to address the problem?
- What physical elements within the network can be analyzed to support the purpose, goal and objective of the scope?
- Will the operational characteristics of the surrounding area change in the future, and if so, will an understanding of how this relates to the study area warrant analysis?
- What level of quality assurance is planned?
- How will the model selection be evaluated?
- Is there sufficient time allocated to develop, calibrate, and conduct the analysis?
- What degree of precision do the decision makers require?
- Will varying travel demand patterns and land use scenarios be considered to assess how robust and flexible the alternatives are?

Prior to beginning the analysis process, it is recommended that a coordination meeting be held with all interested parties to explicitly refine and verify the problem, purpose, and need; the goals and objectives of the study; and the limits of the operational analysis. The scope of the operational analysis likely will influence the stakeholders to be included in the initial and subsequent meeting.

#### **4. Project Schedule:**

This section provides an anticipated proposal development and review schedule, and a schedule of production activities consistent with the proposed funding and opening year.

#### **5. Project Location:**

This section provides a description of the location, and should include both graphic and written description of the location.

#### **6. Analysis Years:**

This section identifies the base year, opening year, interim year/s (if needed), and design year. The base year is the current year, to quantify the current problem and define the purpose and need. This requires performance data associated with current conditions. This is important regardless of analysis methodology and tools applied. Opening year is the year that the facility is expected to be open for traffic. The design year assessment reflects a 20-year horizon from the anticipated opening date of the project. While a design year may warrant a longer horizon, a minimum design year based on 20 years is required for the plans, specifications, and engineering for a project as is required by 23 U.S.C. Section 109(b), which states:

*(b) The geometric and construction standards to be adopted for the Interstate System should be those approved by the Secretary in cooperation with the State transportation departments. Such standards, as applied to each actual construction project, should be adequate to enable such project to accommodate the types and volumes of traffic anticipated for such project for the twenty-year period commencing on the date of approval by the Secretary, under section 106 of this title, of the plans, specifications, and estimates for actual construction of such project.*

#### **7. Analysis Period:**

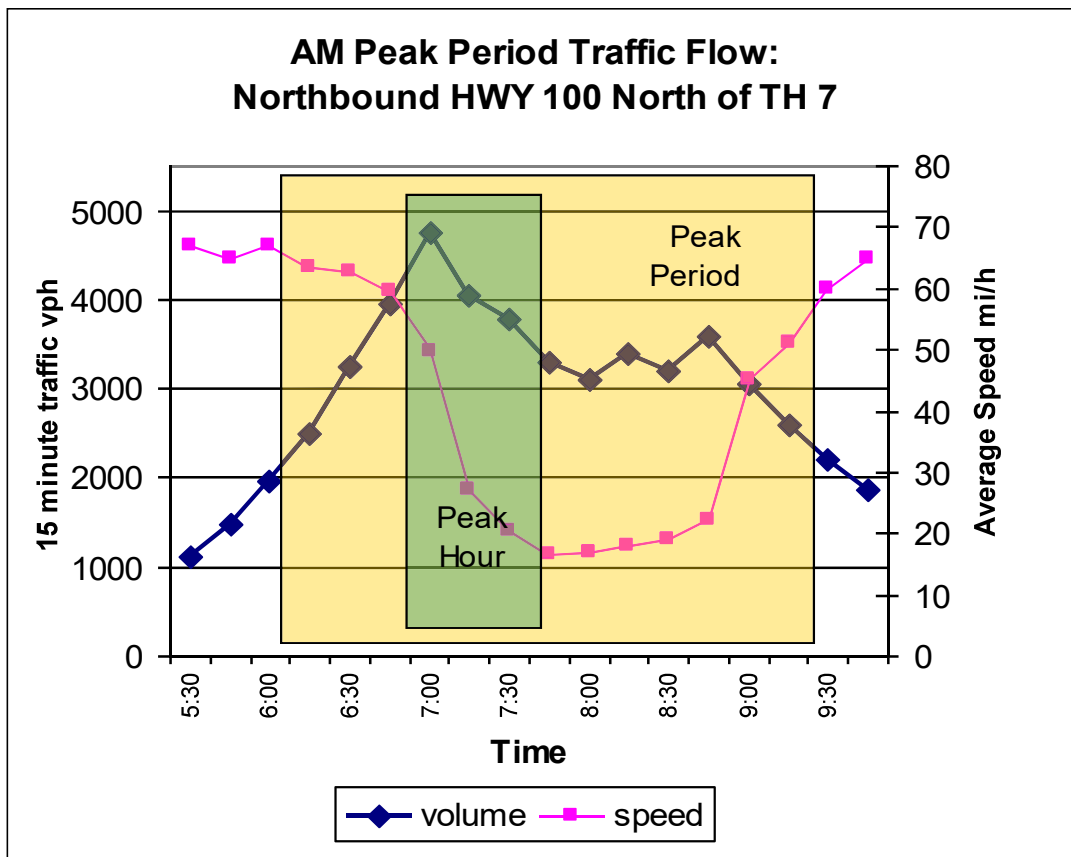
The 30<sup>th</sup> highest hourly volume (30-HV) in the design year is required as a minimum. Additional periods may be required for times which reflect, for example, typical AM /PM peak conditions or peak conditions as anticipated or defined by the problem, purpose and need of the study.

In addition to the existing and design year, interim years may need to be considered, resulting from phased construction, changes in land use, or other projects within the area of influence. Recognizing that congested conditions may extend beyond a single hour in some cases, the minimum requirement of a 30-HV design year may not be adequate for the operational analysis. In these cases, a multi-period analysis may be needed for some traffic analysis tools

that include demand volumes that represent the 30-HV. The analyst should consider this in assessing the traffic forecast demands and in preparing the required data.

For locations and conditions in which a facility is at or near capacity today or in the future, a multi-hour time period would be warranted. Understanding the operational conditions throughout the peak period in particular, would provide insights to the length of time in which a corridor is at or near saturation; promote an understanding of the geographic and temporal expanse of congestion due to one or more geometric features within an alternative; and support an ability to quantify multiple operational performance measures.

As depicted in the Figure below, while the peak period and peak hour relate to each other, the average speed and traffic flow vary within each and have different maximums and minimums. Understanding how an alternative supports and recovers from a given traffic demand profile may be as important as understanding how it operates during the peak 15 minutes.



Source: Traffic Analysis Toolbox Volume IV: Guidelines for Applying CORSIM

Microsimulation Modeling Software, January 2007, Publication Number FHWA-HOP-07-079.

In summary the study should define the following:

- Existing year
- Opening year
- Intern year (may or may not apply to the project)
- Design year

**8. Analysis Alternative:**

This section should include both graphic and written description of no-build, TSM alternative (s), and build alternative(s).

Analysis Alternatives					
Network Alternative		Year			Remarks
		Existing	Opening	Design	
No Build		•	•	•	
Build	Other Network and Interchange Improvements		•	•	
	Preferred		•	•	
	Other Overpass / Underpass		•		
TSM Alternative		•	•	•	
Alternative Travel Modes		•	•	•	

Provided above could be a table describing the different alternatives that would be analyzed in the process.

**9. Data Collection:**

Based on the different alternatives that have been proposed for the project, now you need to identify the types of data that would be needed to ensure the project is analyzed correctly. These data could be:

- Land use – existing and proposed
- Traffic data:
  - i. Geometry (interstate, ramps, intersections, arterials)
  - ii. Control (signal timing, signs, ramp meters, time of day parking restriction, etc)
- Traffic factors: identified traffic factors to be collected (PHF, K30, D30, Truck Traffic (T), Recreational Vehicles (RVs))
- Pedestrian, bicycle and transit data as warranted to multi-modal operational and access problems, purpose, need, goals, and objectives which may affect the operational and safety of the access request.
- Calibration data (capacities, travel times, speed, queues, etc)

## **10. Travel Demand Forecasting:**

This section needs to describe how the future traffic will be determined / forecasted. This section needs to describe and also select the approved models for the area of interest and a comprehensive travel demand forecasting methodology (model to be used, validation / calibration efforts, historical trends analysis, growth rate development, development of future year project traffic, etc). This activity should be coordinated with and agreed to by the MPO and State DOT to promote consistency with multiple studies in the area.

## **11. Operational Analysis Procedures:**

This section needs to describe how the operational analysis will be done for the project. Details of operational analysis methodology need to include:

- Mainline capacity analysis
- Ramp analysis
- Weave analysis
- Arterial analysis

This section needs to select the proper tools for the analysis process based the objectives and goals of the project. The tools could be deterministic (HCS, Synchro, etc), Mesoscopic Simulation (Dynasmart, Paramic, etc), and Microscopic Simulation (CORSIM, Paramic, Vissim, etc). An emphasis on comparing alternatives is encouraged to normalize any inconsistencies between the various analysis tools considered.

## **12. Safety Analysis:**

The analysis of the safety considerations associated with an Interchange Access Change Request should consider anticipated safety performance confirmed with substantive safety data when available for any proposed change in access. While this terminology is relatively new, the concepts are not, and are reflected in good practices by many states.

Substantive safety analysis involves the evaluation of the actual performance of a highway or facility as measured by its crash experience (number of crashes per mile per year, with consequences of those crashes as specified by injuries, fatalities, or property damage).

The analysis of safety in the context of an Interchange Access Request should address the following elements:

- Establish safety area of influence.
- Collect traffic, geometric, and safety data (including design-year volumes).
- Analysis of safety data.
- Identify Corrective Actions and Countermeasures.
- Assess existing and future safety conditions under build and no-build scenarios
- Consider possible corrective actions and countermeasures
- Document the current and anticipated safety performance
- Document signing plans for the preferred alternative

### **13. Final Report Documentation:**

This section should describe how to document all aspect of the project, what will be included in the appendix, and what will be submitted as part of the final report etc.

The final assumption document should be signed off by the FHWA Engineer, NHDOT, and any other stakeholders as appropriate.

## Appendix D – IACR Templates

### EXECUTIVE SUMMARY

A clear and concise summary should be provided at the beginning of the report explaining how each of required policy points have been satisfied, along with how the collective assessment of each policy requirement provides the basis for the recommended change in access. It is recommended that a summary of the analysis that was performed, the methods and tools utilized, the assumptions, and the conclusions are included. Information also will include a description of the process followed to analyze different access changes and other transportation improvement alternatives considered and selected as the proposed recommendation (such as Interstate System facility, ramps, ramp terminal, crossroad, or local street network).

### Chapter 1: Introduction

An introduction to the project should be provided that summarizes the following:

**Background** – This section should identify any supporting information from previous studies or data acquired to introduce the project and support the project purpose.

**Purpose** – The project’s purpose and objectives should be identified with quantified measures highlighting the existing and desired safety, operational and access condition.

**Need** - The need for improvement should be established using factors such as existing conditions and the conditions anticipated to occur in the analysis years under the No-Build Alternative, or other factors such as the need for system linkage.

**Project Location** – Include aerial photography of the project area and area of influence, a map displaying the subject interchange location, and a brief description of the preliminary area of influence. Maps should be to scale or be schematic drawings showing distances between interchanges, intersections, and other key features. The subject interchange location should be identified by milepost, relationship to adjacent interchanges, and system linkages. Factors used to define the area of influence should be discussed, including interchange spacing, signal locations, anticipated traffic impacts, anticipated land use changes, or proposed transportation improvements.

### Chapter 2: Methodology

This section should summarize the methodology used to develop the Interchange Access Request. The discussion should provide sufficient detail for the reader to understand the processes used.

This section should also document the development of the future-year design traffic for each alternative. Information to be contained should include network and project validation, future travel demand projections, and the design traffic projections.



## Chapter 3: Existing Conditions

This section should identify the conditions that existed in the project's base year. Text, figures, and tables should be used as appropriate to describe the existing land use, transportation system, demand, performance, and environmental conditions considering the following:

**Demographics** – This section should identify significant population and employment statistics within the project area of influence. Summary for traffic analysis zones for the base year from the selected travel demand forecasting model should be included.

**Existing Land Use** – Existing land use within the project area should be summarized by general land use classifications (residential, commercial, industrial, institutional, recreational, etc.). Major developments within the study area should be identified.

**Existing Roadway Network** – Facilities within the project area of influence should be identified by functional classification, cross section, and access control (e.g., limited or controlled-access). In addition to a discussion, a figure should be provided illustrating each facility within the study area.

**Alternative Travel Modes** – Existing single occupant vehicle (SOV) alternatives related to the project should be identified in this section. These modes may include special use/HOV, park and ride, bus transit, fixed-guide way mass transit, airports, ports, and forms of non-motorized transportation facilities. A figure should be provided illustrating the location of these modes.

**Interchanges** – This section should describe the existing configuration, geometry and other design features of existing interchanges in the area of influence, including identifying any elements that do not meet current design standards. This section should also identify any approved but not yet constructed interchanges, and define their geometry and status. Also, any other interchanges being developed in the area of influence should be identified.

**Existing Data** – This section will discuss existing data source(s) and quality of the data.

**Operational Performance** – This section will summarize the results of the operational analysis including the methodology, assumptions, and conclusions. A comparison of the no-build and multiple build conditions considered should be provided along the Interstate facility and the local roadway network to support the need for the project. Tables and figures should be employed to summarize operational performance.

**Existing Safety Conditions** – This section will summarize an analysis of the safety performance of the existing conditions including existing crash data supporting the need for the project. Any strategies used to mitigate safety concerns should be discussed. A comparison of the no-build and multiple build conditions considered should be provided along the Interstate facility and the local roadway network to support the need for the project. Tables and figures should be employed to summarize operational performance

**Existing Environmental Constraints** – This section should identify any potential environmental fatal flaws or areas of concern that will be addressed during this effort or in

subsequent project phases. This analysis is not intended to provide extensive examination of environmental and community impact issues that will be accomplished in the NEPA process.

#### **Chapter 4: Future Condition:**

**Future Land use** – This section should discuss the future land use of the area, and how it affects the operation of the proposed interstate access. The future / forecasted land use should be consistent with the local land use policy and comprehensive land use plan.

**Future Forecast Traffic Volume** – This section should provide a base map that displays the future year traffic volume for all locations within the study area.

**Other** – This section can be used to describe any other factors that could affect the design, operation, or safety issues of the proposed facility.

#### **Chapter 5: Interchange Alternatives**

This section will discuss the alternatives considered. A brief narrative regarding location and design elements should be provided for each alternative. At a minimum, the following alternatives will be considered:

- No-Build Alternative.
- Improvements to Alternate Interchanges.
- Transportation System Management Alternative.
- Alternatives Providing a Change in Access.

Each of these alternatives should be identified in independent sections. The proposed modifications and engineering factors including structures, landscaping, schedule, cost, and traffic control devices should be discussed for each alternative considered.

#### **Chapter 6: Compliance with Policy Point #1**

#### **Chapter 7: Compliance with Policy Point #2**

#### **Chapter 8: Compliance with Policy Point #3**

This section will discuss the analysis of alternatives based on engineering policies and standards, traffic operations, and safety impacts using the evaluation criteria agreed to in the coordination meetings with FHWA. This analysis would normally consider, at a minimum, the following:

**Operational Performance** – The documentation of the operational analysis should provide sufficient information for an independent review if needed, and proper documentation of the process is required depending on the tools used for the analysis. A multi-hour or multi-time period analysis will be anticipated for study areas experiencing or anticipating saturated or congested operating conditions.

**Safety** – The effects on safety (increase or decrease in the type, number, and severity of crashes) of the proposed project should be discussed. This section should also discuss the project's effects on public safety issues such as emergency services and evacuations.

**Evaluation Matrix** – This section will present an analysis of the alternatives using various criteria to assess the impacts and potential consequences for the proposed change in access.

**Chapter 9: Compliance with Policy Point #4**

**Chapter 10: Compliance with Policy Point #5**

**Chapter 11: Compliance with Policy Point #6**

**Chapter 12: Compliance with Policy Point #7**

**Chapter 13: Compliance with Policy Point #8**

**Chapter 14: Compliance with Engineering Standards**

**Chapter 15: Funding Plan**

This plan will identify the specific funding programs or private sources needed to support all of the improvements proposed. Project revenue requirements will be discussed if the project is a toll project.

**Chapter 16: Recommendation**

This section will discuss the preferred alternative selection and any recommendations for further action, such as programming the NEPA or design phases.

**APPENDICES**

Appendices will be used for other supporting documents such as traffic operational analysis documentation. Lane configuration schematic and figures illustrating the existing geometry overlaid with proposed geometry are recommended. These figures should clearly show dimensions for the acceleration and deceleration lane spacing, lane transition taper lengths, auxiliary lanes, and interchange spacing (measured from the centerline of grade-separation structures).

**Appendix E – Example Use and Occupancy Agreement for gated Interstate access**

**USE AND OCCUPANCY AGREEMENT**

1. The following entities shall be parties to this Agreement made in duplicate this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, and shall be bound by its provisions:
  - A. The \_\_\_\_\_, hereinafter called the “Town”, incorporated in the State of New Hampshire, having a principal place of business at \_\_\_\_\_.
  - B. The STATE OF NEW HAMPSHIRE, hereinafter called the "State", acting by and through the Commissioner, New Hampshire Department of Transportation (NHDOT), 7 Hazen Drive, PO Box 483, Concord, NH, 03302-0483.
2. The State, through its consultant, has prepared plans to be incorporated in the Salem – Manchester \_\_\_\_\_ (I-93; \_\_\_\_\_) project for the installation of an emergency access facility within the Limited Access right-of-way. The Town has partnered with the State in this work and approved the plans.
3. This Agreement covers the Use and Occupancy of the Limited Access Right-of-Way (LAROW) of Interstate 93 as shown on the plans. Such occupancy having been granted by execution of this document covers the installation of emergency access roadway at the location described as follows: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ in the City/Town of \_\_\_\_\_, County of \_\_\_\_\_, New Hampshire.  

The approved plans within the above referenced project, dated \_\_\_\_\_ are hereby incorporated in this Agreement.
4. The Town shall assure that any agent or contractor for the Town performing maintenance on the emergency access facility shall furnish a Certificate of Insurance for General Liability for a minimum of one million dollars (\$1,000,000.00), Aggregate and Worker’s Compensation and Employer’s Liability for a minimum of five hundred thousand dollars (\$500,000.00) for all future maintenance activities or upgrades of said emergency access roadway.
5. All materials supplied and work performed by the State or its contractor in the installation of the emergency access gate and operating appurtenances shall be subject to the inspection of a representative of the Town. Any deficiencies in materials, methods of construction, or workmanship shall be brought to the State’s attention promptly before or during final inspection, where corrective action will be taken to provide an acceptable installation.

6. Use of said emergency access facilities shall be restricted to Municipally owned emergency response vehicles and municipally employed personnel, and authorized state vehicles. Gates shall be closed and locked when not in use.
7. The Town shall submit its written maintenance policies and procedures, which are to be used for the inspection, repair, and maintenance of said facilities to the State for review and approval. Such procedures shall be approved by the State prior to initial operation of the constructed facilities.
8. The Town shall notify the State Bureau of Highway Maintenance, District 5, 24 hours in advance of scheduled or nonscheduled maintenance of the emergency access facilities except winter maintenance and emergency repairs, for which the Town shall contact the State while such emergency repairs are being done.
9. The costs and expenses for the maintenance of the emergency access facilities, which includes snow removal, maintaining gate and appurtenances, trimming shrubs and trees and mowing outside the limits of the State's summer maintenance shall be the responsibility of the Town.
10. The Town or their contractor is solely responsible for the presence of their equipment along the State's LAROW. Town maintenance equipment and personnel shall not park or perform maintenance from or along I-93. All maintenance work shall be performed from the Emergency Access roadway. All work shall require a traffic control plan approved by the State. No materials shall be stored within the State's LAROW.
11. The Town agrees that access to the emergency access facilities for scheduled or nonscheduled maintenance or for any other purpose shall be made in accordance with the following procedure:
  - A. Emergency response vehicles, the Town or their contractor will conform to standards set by the State and in a manner that maintains safety and minimizes inconvenience to the traveling public.
  - B. Snow removed by the Town or their contractor at these locations shall not encroach upon areas cleared of snow by the State.
  - C. Notify in advance all emergency services potentially affected by any maintenance activities.
  - D. Both parties are obligated to notify the other party of any unauthorized use of the emergency access, or damage/vandalism of the access gate that would allow unauthorized access or hinder authorized access.
12. The Use and Occupancy of the LAROW by the Town shall be at the sufferance of the State. The State may terminate this Agreement upon ten (10) days notice in writing to the Town at the above address.
13. The Town agrees that the State, its agencies and their employees, agents, and representatives shall not incur any legal liability whatsoever to the Town for any damage to the emergency access facilities or to any other property or employee of the Town or to any other person or entity hired by or affiliated with the Town resulting from or arising

out of any use of and operations within the LAROW, including but not limited to inspection, maintenance, cleaning, snow removal, and repair.

14. The Town shall indemnify, defend, and hold harmless the State, NHDOT, United States Department of Transportation (USDOT), FHWA, and their employees, agents, and representatives against any and all claims, actions, causes of action, demands, liabilities, losses, penalties, damage of any kind, and failure to comply with any utility-type commission's permitting, regulations, and guidelines, including all actions for indemnity and/or contribution, and including reasonable attorneys' fees, resulting from or arising out of any Town or State use of, and operations within the LAROW, including but not limited to inspection, maintenance, cleaning, snow removal, and repair of either the emergency access or the highway facilities. The indemnification provided under this paragraph shall include, but not be limited to, any and all claims or demands for loss of revenue, income, business or economic opportunity, customers, profits, presence of and occupation of, and service resulting from or arising out of any inability or failure of the emergency access facilities to provide service as intended by the Town.
15. Any damage to the LAROW and the surrounding highway facilities contained therein which, as determined by the State, is caused by, results from, or arises out of the use, maintenance, presence, or improvement of the emergency access facilities shall be repaired by the State. The Town shall fully compensate the State for all costs associated with the repair of any such damage caused by the Town.
16. Upon breach of any provision of this Agreement by the Town, the State may either (a) enforce the breach provision by means of an injunction proceeding, or (b) seek damages, including all consequential damages, which arise out of the breach, or both. In any such action to enforce the Agreement or collect damages for its breach, the Town shall reimburse the State for all attorneys' fees reasonably incurred by the State in such action.
17. Notwithstanding any provision of this Agreement, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant shall survive the termination of this Agreement.
18. This Agreement may be amended only by an instrument in writing signed by the parties hereto and only after approval of such amendment by the State of New Hampshire and the FHWA, if applicable.
19. This Agreement shall be construed in accordance with the law of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns including all agencies, departments, bureaus, authorities, boards, commissions, and committees of the State.
20. The parties hereto do not intend to benefit any third parties and this Agreement shall not be construed to confer any such benefit. The State also shall not be responsible for any negligent/intentional acts of third parties.
21. The Town shall not assign or otherwise transfer any interest in this Agreement without the prior written consent of the State, except that no consent shall be required for a

transfer or assignment to a wholly owned subsidiary or affiliate of the Town or any parent company of the Town.

- 22. This Agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire Agreement and understanding between the parties, and supersedes all prior Agreements and understandings relating hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first above written.

THE STATE OF NEW HAMPSHIRE  
Department of Transportation

TOWN OF \_\_\_\_\_

BY: \_\_\_\_\_  
William J. Cass, P.E.  
Director of Project Development

BY: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Typed Signature)  
**Chairman, Board of Selectmen**

\_\_\_\_\_  
Selectman

\_\_\_\_\_  
Selectman

\_\_\_\_\_  
Selectman

\_\_\_\_\_  
Selectman

\_\_\_\_\_ CAG