U.S. Department of Transportation
Federal Highway Administration

Texas Department of Transportation

INTERSTATE ACCESS JUSTIFICATION REPORT (IAJR)

ENGINEERING, OPERATION AND SAFETY ANALYSIS

TXDOT STANDARD OPERATING PROCEDURES (SOP)

DESIGN DIVISION

March 2020

Agenda

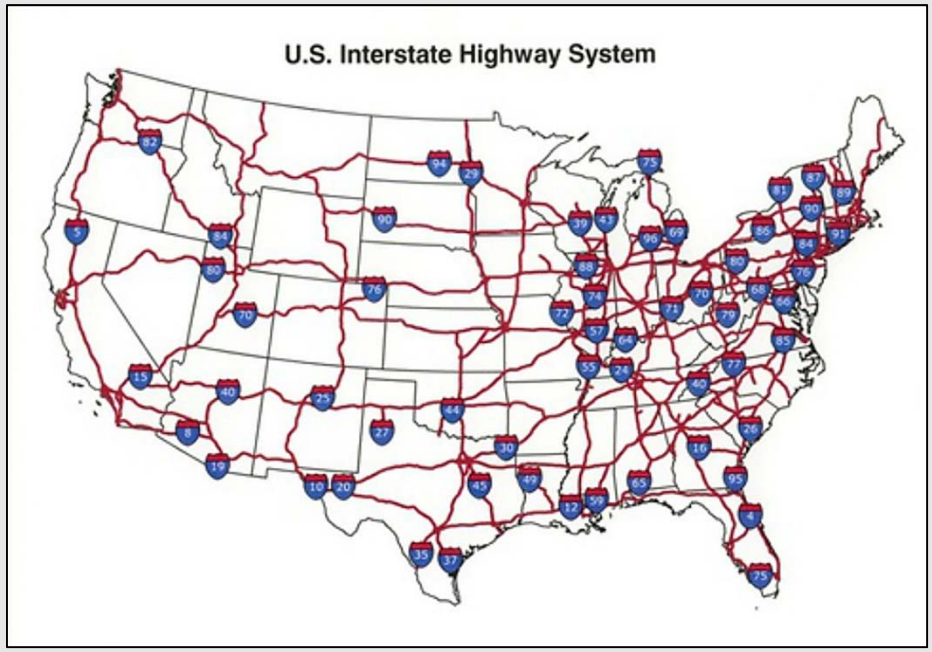
- Introduction
- IAJR Process
- IAJR Methodology
- IAJR Report
- IAJR Re-evaluation
- Quality Control
- Questions/Comments?

Interstate Access Overview

- Why is Interstate Access Management important?
- Why is IAJR required?
- What is the IAJR Policy?

Interstate Highway System

- Backbone of the nations' surface transportation system
- 60+ years
- Played major role in shaping nation's economy & development
- Led to increase in traffic demand
- Demand for access

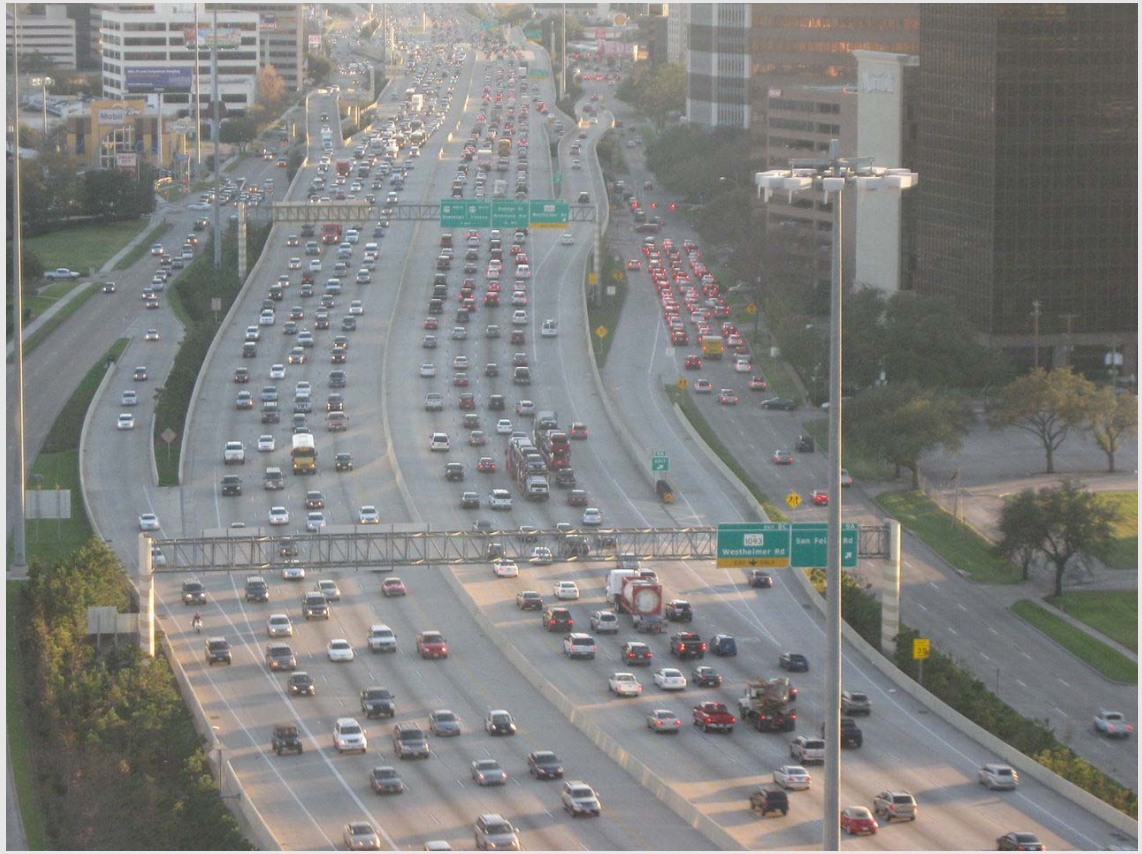


- Interstate Highways in Texas
  - >3000 miles
  - > dozen of primary and auxiliary routes
  - 4 of 10 longest Interstates

Texas Interstate Highway System

The Interstate Highway Access Management

- Need for access
  - New or modified
  - Support development
  - Access to other system
- Access management
  - Location & Design
  - Safety & Operation
- Challenges
  - Points of conflict
  - Balance between access and mobility



Legal Authority for the Interstate Access Policy

United States Code (USC) – Title 23

Section 111 – Agreements relating to use of and access to rights-of-way – Interstate System

"All agreements between the Secretary and the State transportation department for the construction of projects on the Interstate System shall contain a clause providing that the State will not add any points of access to, or exit from, the project in addition to those approved by the Secretary in the plans for such project, without the prior approval of the Secretary."

The USDOT Secretary has delegated this authority to the Federal Highway Administrator

FHWA Policy on Access Changes to the Interstate System

"It is in the national interest to preserve and enhance the Interstate System to meet the needs of the 21st Century by *assuring that it provides the highest level of service in terms of safety and mobility*. *Full control of access along the Interstate mainline and ramps*, along with control of access on the crossroad at interchanges, is critical to providing such service.

FHWA Policy on Access Changes to the Interstate System

Therefore, the Federal Highway Administration's (FHWA) decision to approve new or revised access points to the Interstate System under Title 23, United States Code (U.S.C.), Section 111, *must be supported by substantiated information justifying and documenting that decision*. The FHWA's decision to approve a request is dependent on the proposal satisfying and documenting the following requirements:

1. *Operational and Safety Analysis*
   - Maintain the safety and operational integrity of the Interstate System

2. *Access and Design*
   - *Connects to a public road and provides for all traffic movements*
   - Meet the current design standards

Introduction

Purpose

- Provide TxDOT Guidance based on FHWA Access Guide
- Provide consistent point of reference for Districts, DES, and FHWA (Tx Div)
- Improve probability and ease of acceptance by FHWA
- Clarify importance of Early coordination with DES and FHWA

Legal Background

- Title 23, United States Code, Highway Section 111
  - State will not add any point of access w/o approval of Secretary USDOT
- Title 49, Code of Federal Regulation (CFR), Section 1.48
  - Secretary delegated the authority to FHWA

Policy Evolution

- FHWA Policy
  - October 22, 1990
  - February 1998
  - August 2009
  - May 2017
- TxDOT Policy
  - October 19, 2018 Memo*

*Pending Issuance of this SOP as current policy

TxDOT's Policy for IAJRs

TxDOT's Policy for IAJRs

- Incorporates the two updated points in the FHWA May 2017 Policy
  - Effects of revised access on Safety and Operations
  - Access, Connection and Design
- Retains the six points in the FHWA August 2009 Policy
  - Need
  - Alternatives
  - Consistency w/Local and Regional Plans
  - Potential future multiple Interchange additions
  - Coordination w/ Local Development/Transportation
  - Environmental Review Status

Attachment A TxDOT's Policy for IAJRs

Attachment A

Supporting Documentation for

TxDOT's Policy for Interstate Access Justification Reports (IAJRs)

On May 22, 2017, FHWA issued a new policy replacing the August 27, 2009 policy regarding "Access to the Interstate System." The previous 2009 FHWA policy has typically been referred to as an eight-point policy, with the May 22, 2017 FHWA policy referred to as the two-point policy. It is important to note the following from the two-point policy:

> "This policy replaces the policy of August 27, 2009 on "Access to the Interstate System," published at 74 *Federal Register* 43743. The changes in this policy are made to ensure this policy focuses on safety, operational, and engineering issues. The consideration of social, economic, and environmental impacts discussed in the 2009 policy are removed from this policy. However, the removal from this policy does not eliminate the need to consider those matters. Those issues will be addressed under the National Environmental Policy Act (NEPA) and other statutes and regulations applicable to the approval process."

The May 22, 2017 FHWA policy is intended to eliminate the potential for duplicative analysis of the social, economic, and environmental impacts and planning considerations in both the Interstate Access report and the NEPA Documentation. The assumption being that it was a duplicative process in every state.

Following FHWA's release of the May 22, 2017 change in policy, TxDOT representatives met with FHWA Texas Division staff to discuss TxDOT's current process and to determine an acceptable approach in response to FHWA's change in policy. It was determined that TxDOT's process, is not duplicative and, if TxDOT adopted the May 22, 2017 FHWA policy, without revising its NEPA Documentation procedures, required elements of the overall process would no longer be adequately addressed. TxDOT does not plan to revise its NEPA Documentation procedures.

As a result, the six points of the previous policy, addressing the consideration of social, economic, and environmental impacts and planning considerations, remain as part of the components of TxDOT's IAJR analysis and documentation, in addition to the two updated points in the May 22, 2017 FHWA policy, for a total of eight. The IAJR will also be included, by reference, as an attachment to the NEPA documentation.

Please note, TxDOT is not proposing to follow the previous FHWA 2009 policy rather than FHWA's May 22, 2017 policy. As shown in Tables 1 and 2 below, the points in the May 22, 2017 policy addressing safety, operational, and engineering acceptability <u>are not</u> the same as the two respective points in the previous 2009 FHWA policy.

Requirements

Which Access Changes require IAJRs?

- Based on FHWA Access Guide
  - Three types of delegation for access processing
    - FHWA Headquarters Approval
    - FHWA Division Office Approval
    - FHWA Coordination
- Attachment B-1 lists access changes requiring FHWA review and action
- Attachment B-2 lists changes not requiring FHWA review and approval
  - Documentation requirements dependent on the project context

Access Changes Requiring IAJRs

Interstate Access Justification Report
TxDOT Standard Operating Procedures (SOP)

Attachment B-1

Interstate Access Changes Requiring FHWA Review and Action

Federal Delegation of Authority for Access Approval*		
Type of Access Change	**FHWA Headquarters**	**FHWA Division Office**
New Freeway-to-Freeway Interchange	X	
Major Modification of Freeway-to-Freeway Interchange	X	
New Partial Interchange	X	
New Ramp(s) to/from Continuous Frtg Rd	X	
New Freeway-to-Crossroad Interchhange Within Traffic Management Area (TMA)		X
New Freeway-to-Crossroad Interchange Outside TMA		X
Major Modification of Existing Freeway-to-Crossroad Interchange		X
Adding New Ramp(s) to an Existing Interchange		X
Removing Ramp(s) from an Existing Interchange		X
Changing the Interchange Configuration		X
Completion of Basic Movements at Partial Interchange		X
Locked Gate Access		X
Abandonment of Ramps or Interchanges		X

*Based on FHWA Access Guide

Attachment B-2

Examples of Projects Not Requiring FHWA Review & Approval

Type of Access Change

- Adding Turn Lane or Through Lane on Cross Road at Ramp Termini
- Widening of Existing Ramp to Add Lane(s)
- Relocate Ramp Termini Along Cross Road
- Relocating Existing Entrance/ Exit Gore Point Along Freeway Mainline
- Adding an Auxiliary Lane Between Two Adjacent Interchange Ramps
- Signal or Channelization Improvements of Ramp Terminal Intersection with Cross Road
- Modification in length of acceleration or deceleration lanes on ramps
- Implementation of ramp metering
- new signing, sriping, and/or resurfacing on on-ramps or off-ramps
- Construction of overpassess or grade seperation structures
- Changes in access between managed lanes and general purpose lanes

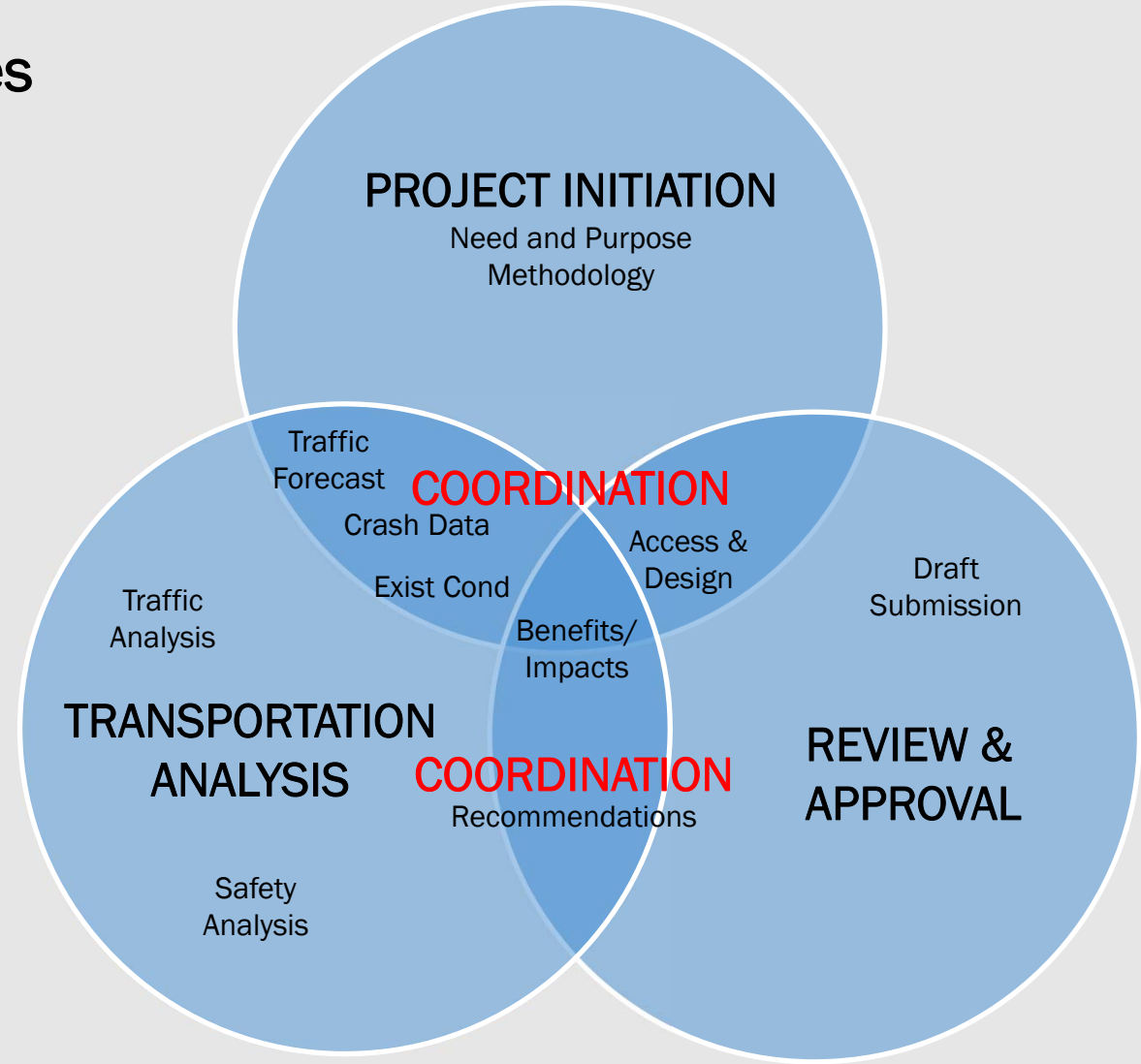
NOTE: Projects do not require FHWA review and action, but coordination with Design Division and FHWA may be required based on context of project.

Agenda

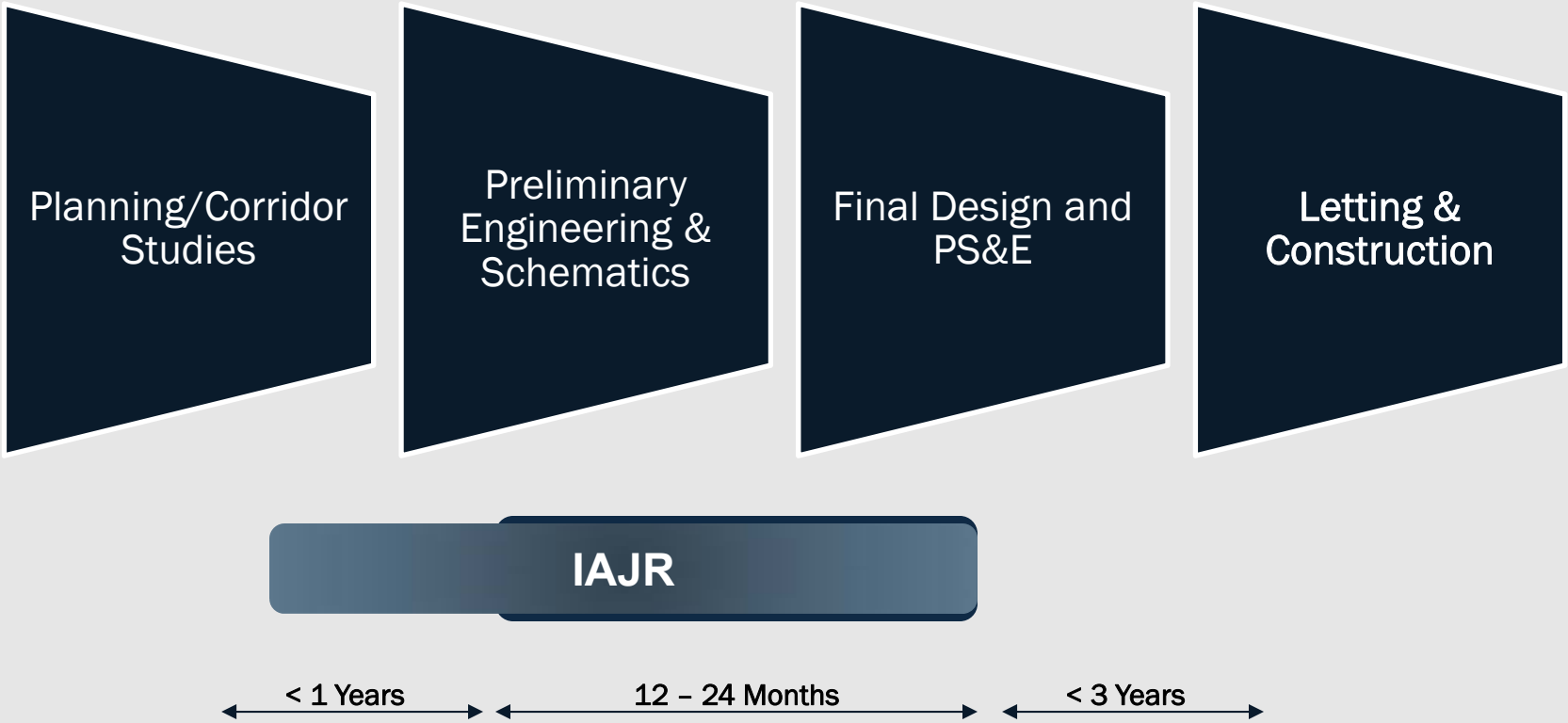
- Introduction
- IAJR Process
- IAJR Methodology
- IAJR Report
- IAJR Re-evaluation
- Quality Control
- Questions/Comments?

IAJR Process

Key Stages

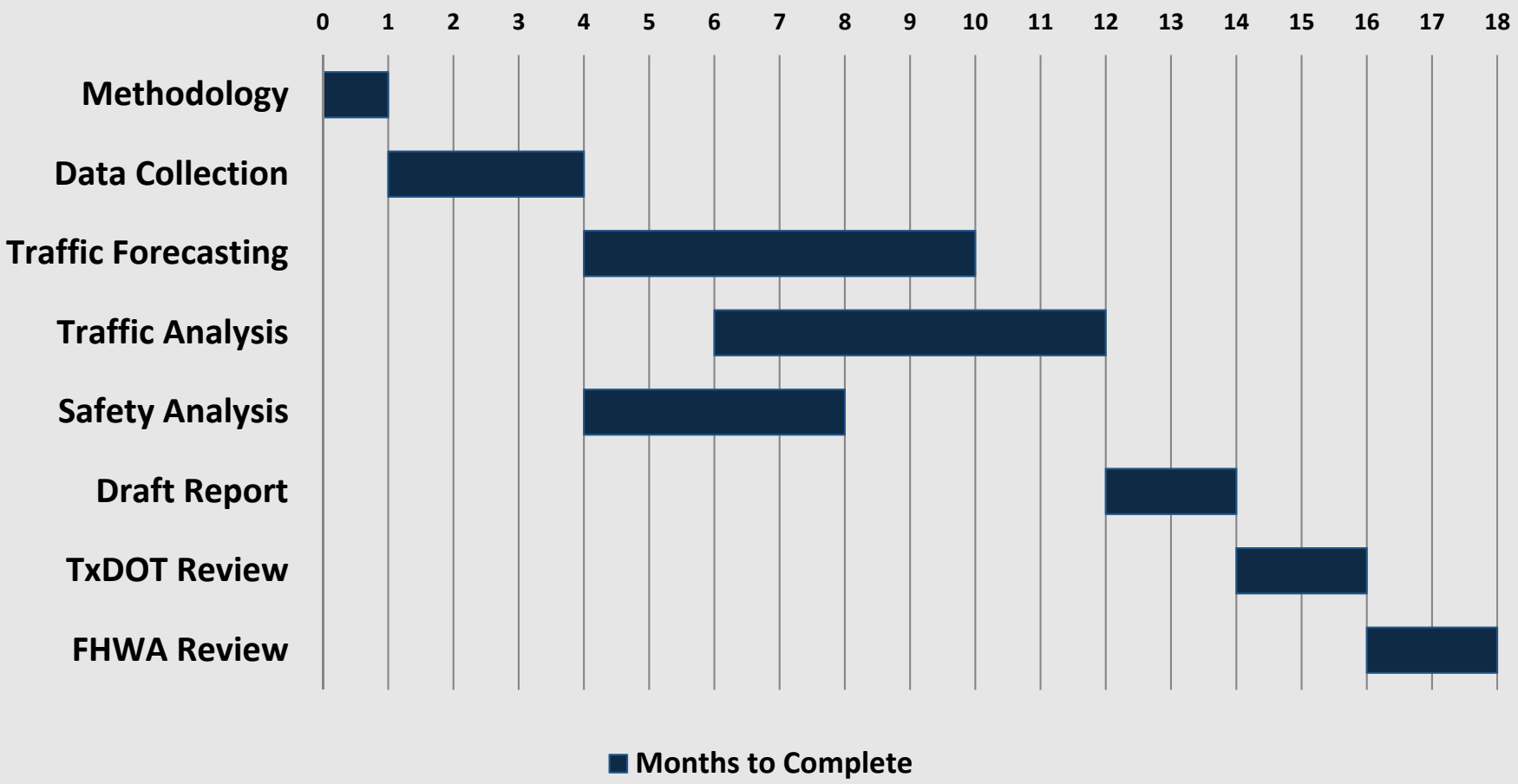


Project Development & IAJR Timeline

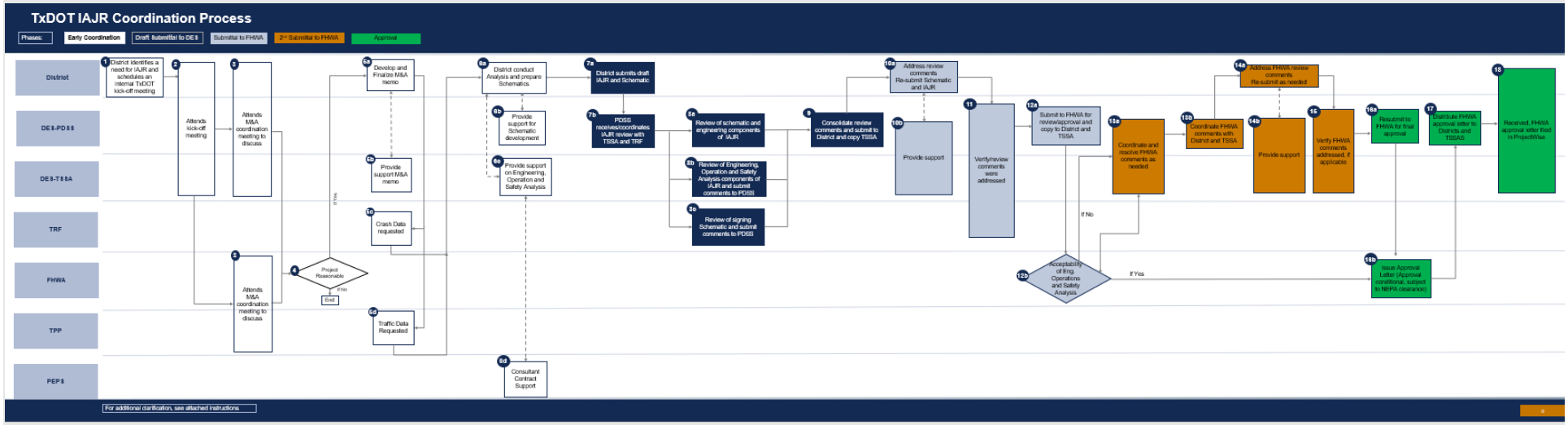


IAJR Schedule

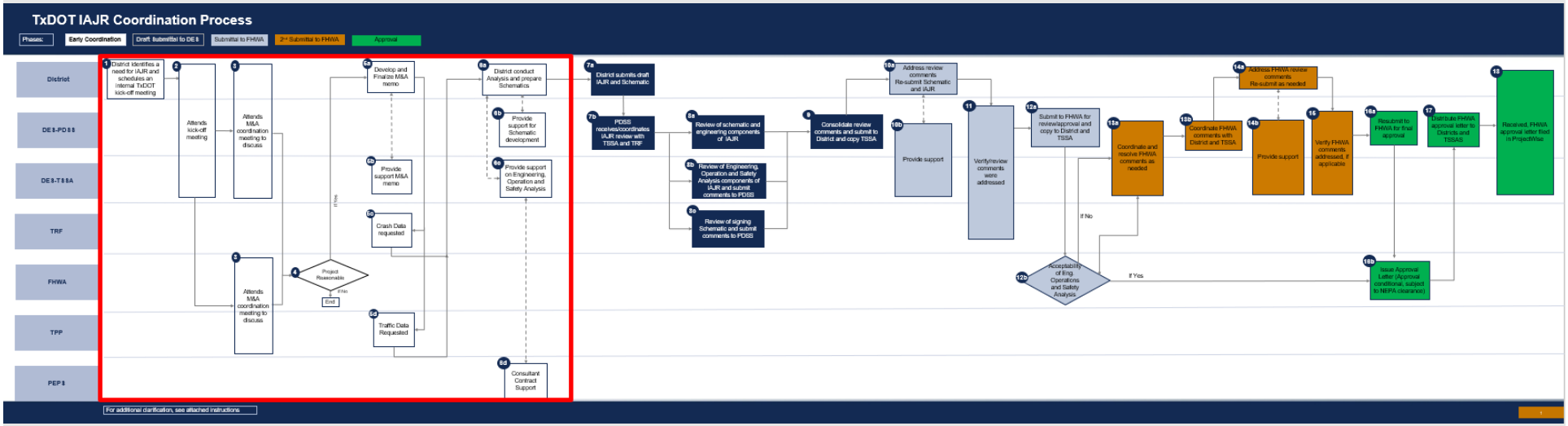
Typical Average Schedule



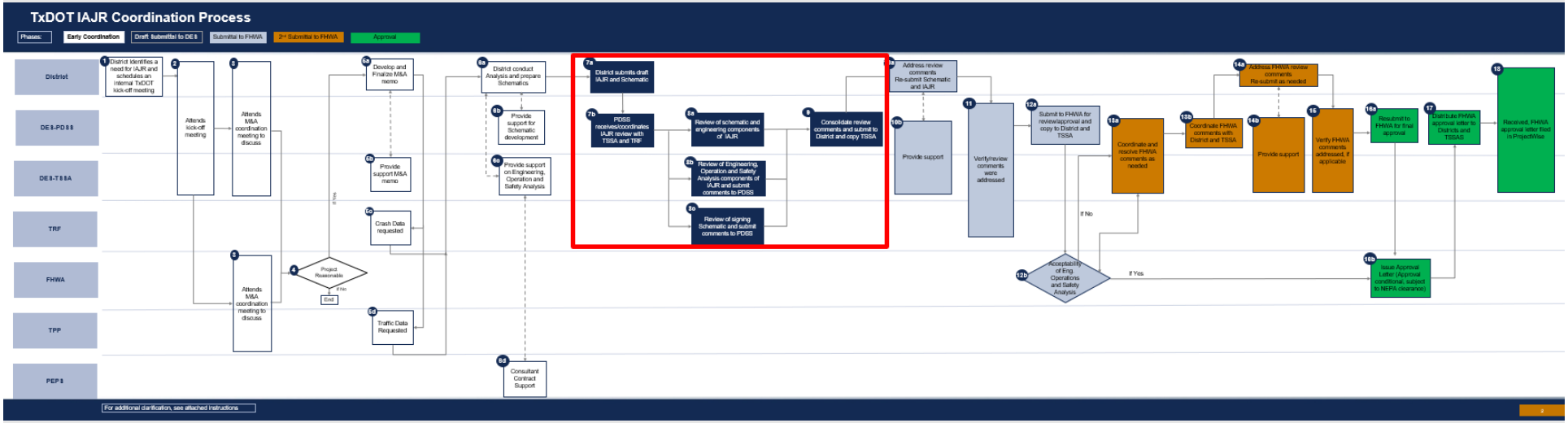
TxDOT IAJR Process



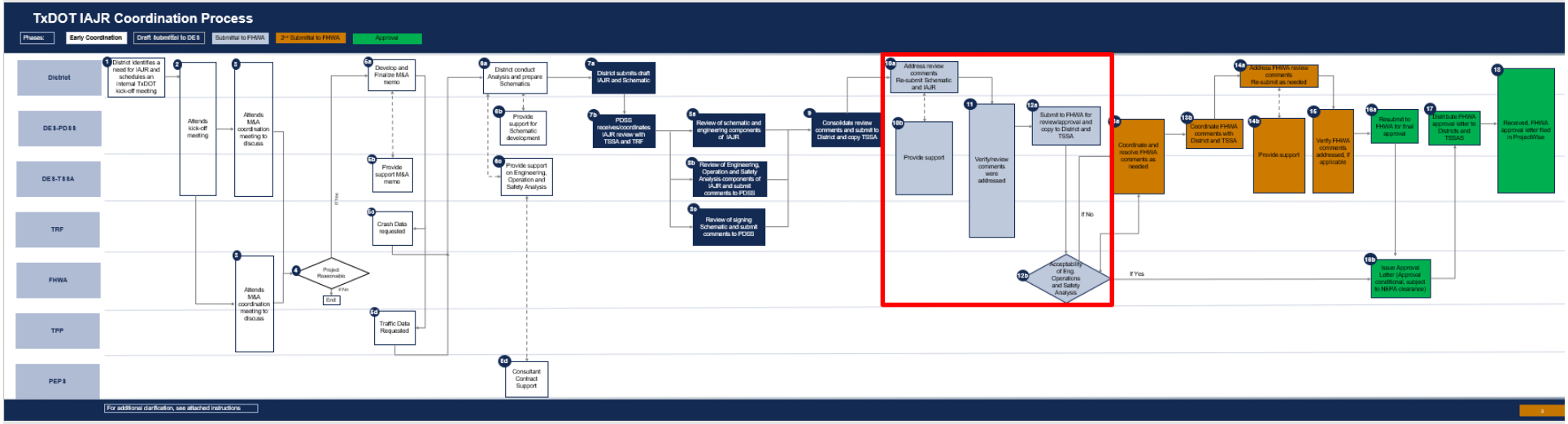
IAJR Phase: Early Coordination



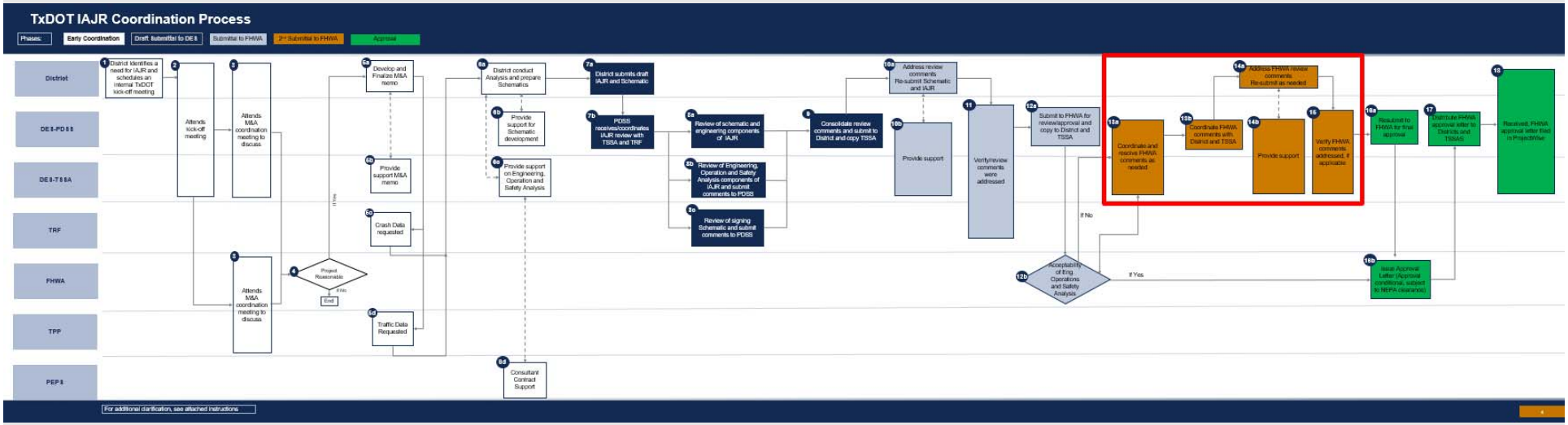
IAJR Phase: Draft Submittal to DES



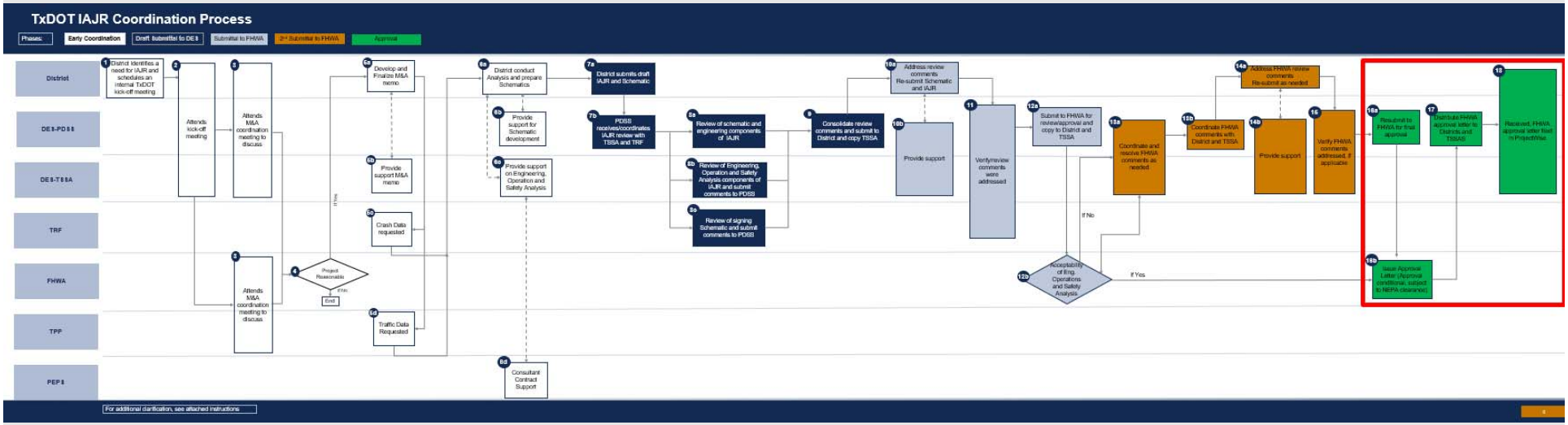
IAJR Phase: Submittal to FHWA



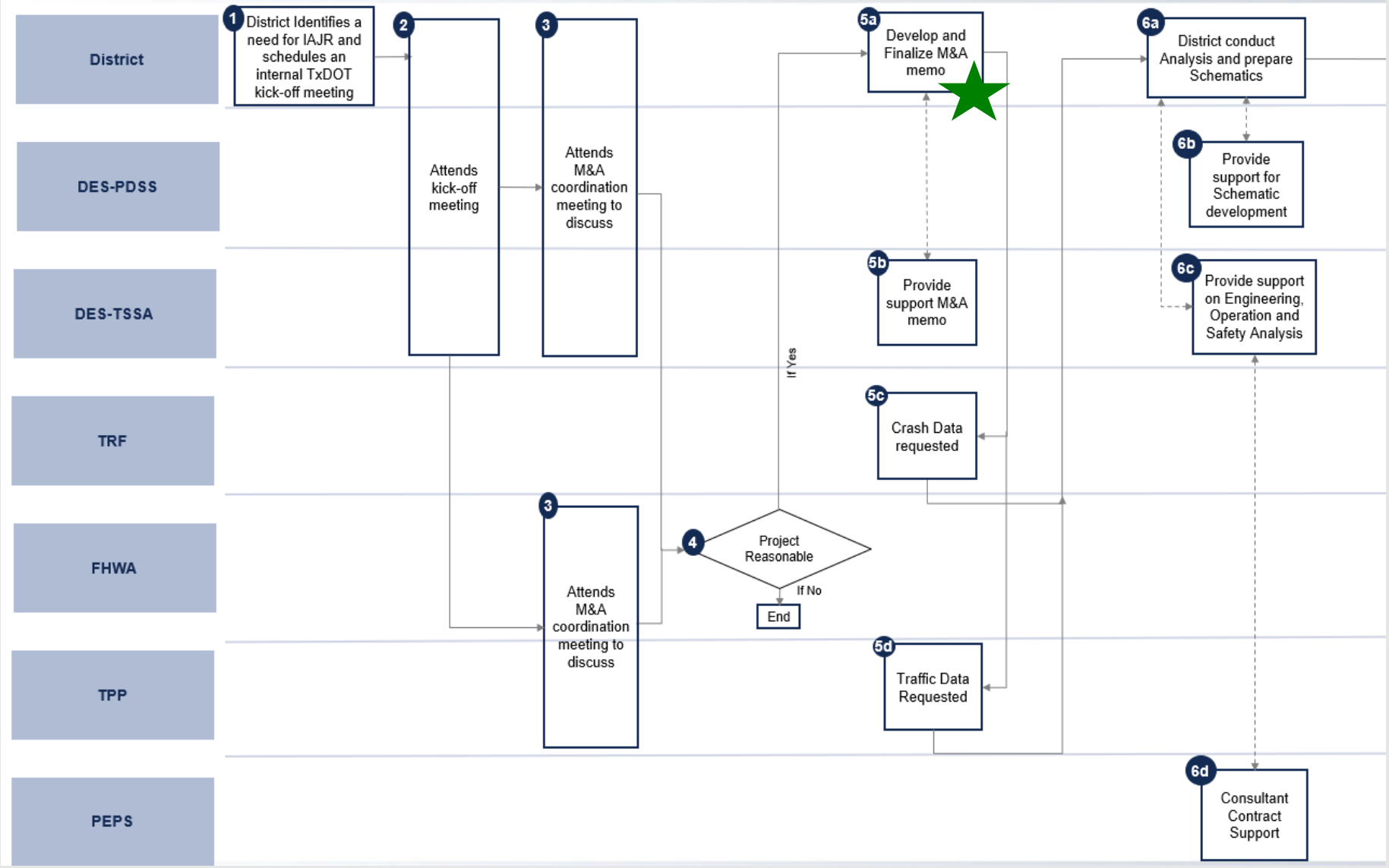
IAJR Phase: 2nd Submittal to FHWA



IAJR Phase: Approval

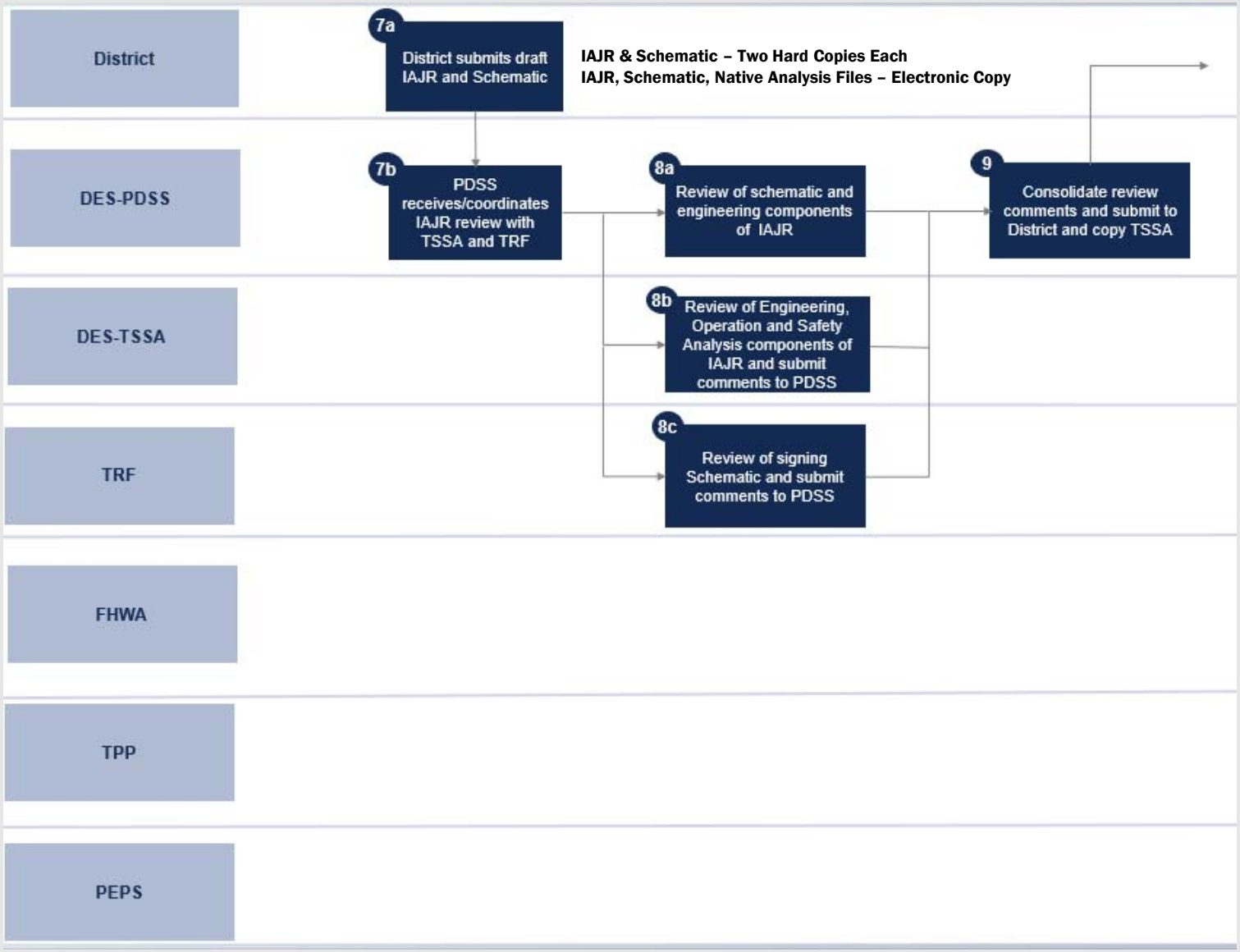


IAJR Phase: Early Coordination

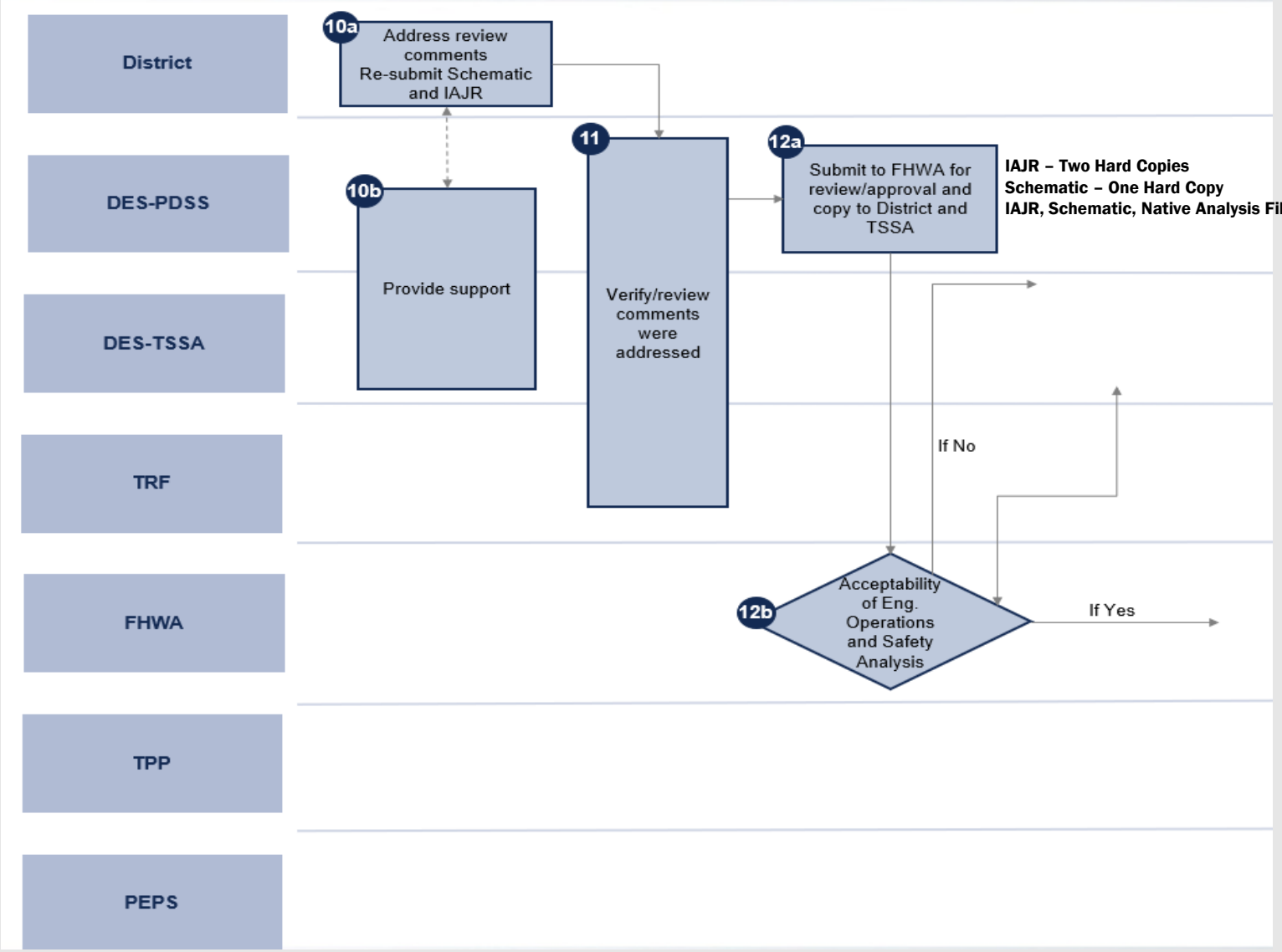


M&A Memo will be considered Final with concurrence of FHWA, DES, and District.

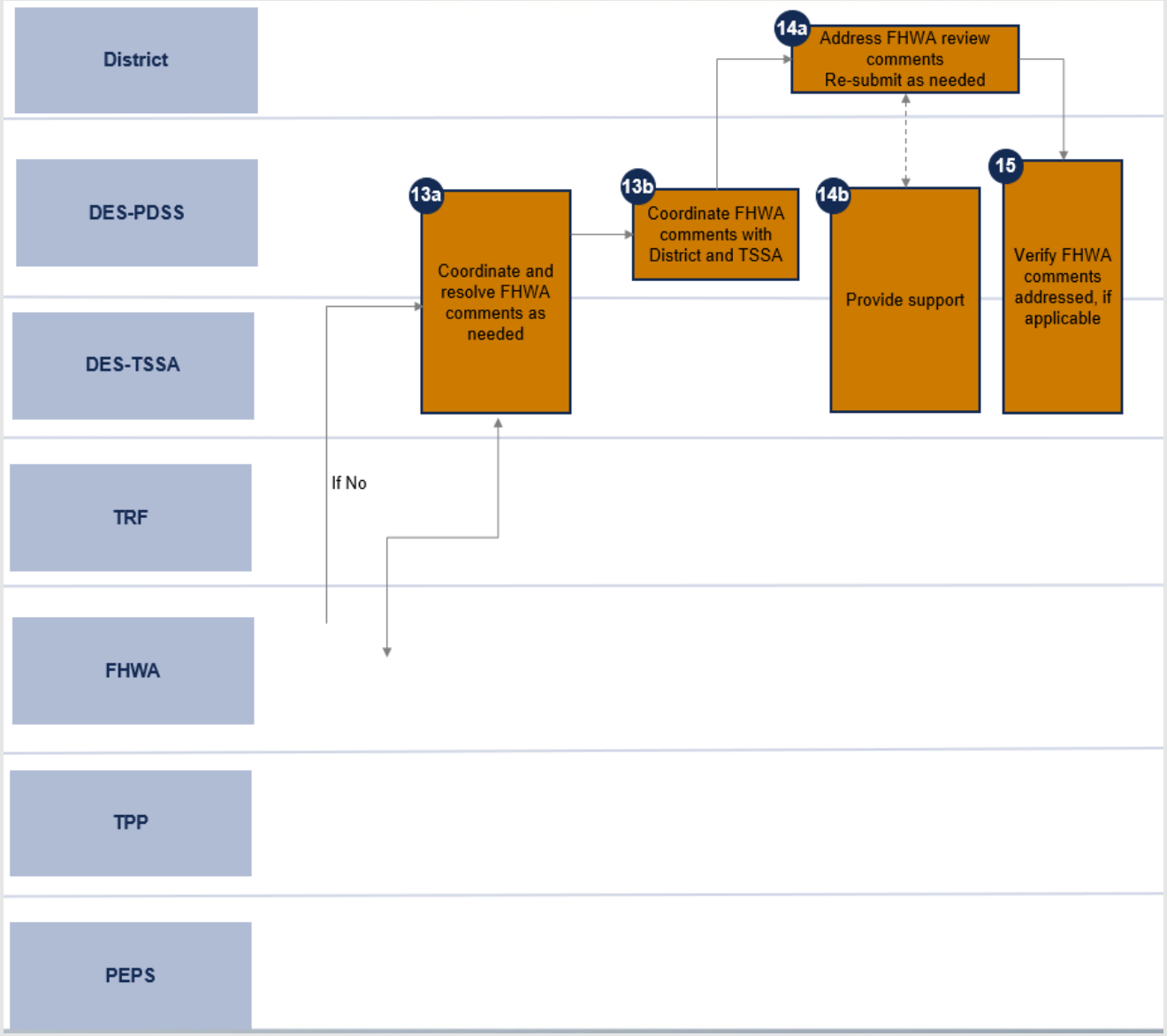
IAJR Phase: Draft Submittal to DES



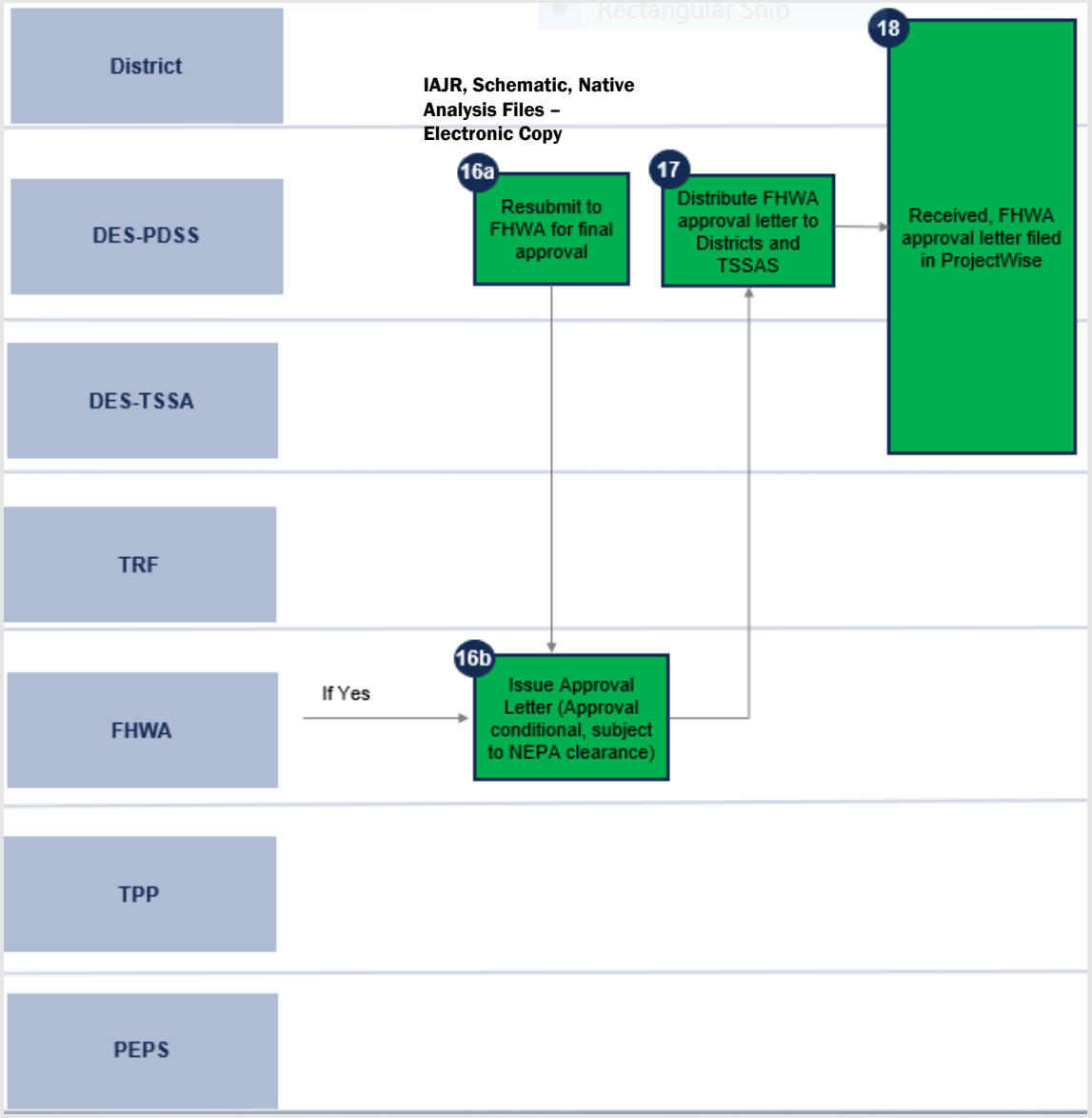
IAJR Phase: Submittal to FHWA



IAJR Phase: 2nd Submittal to FHWA

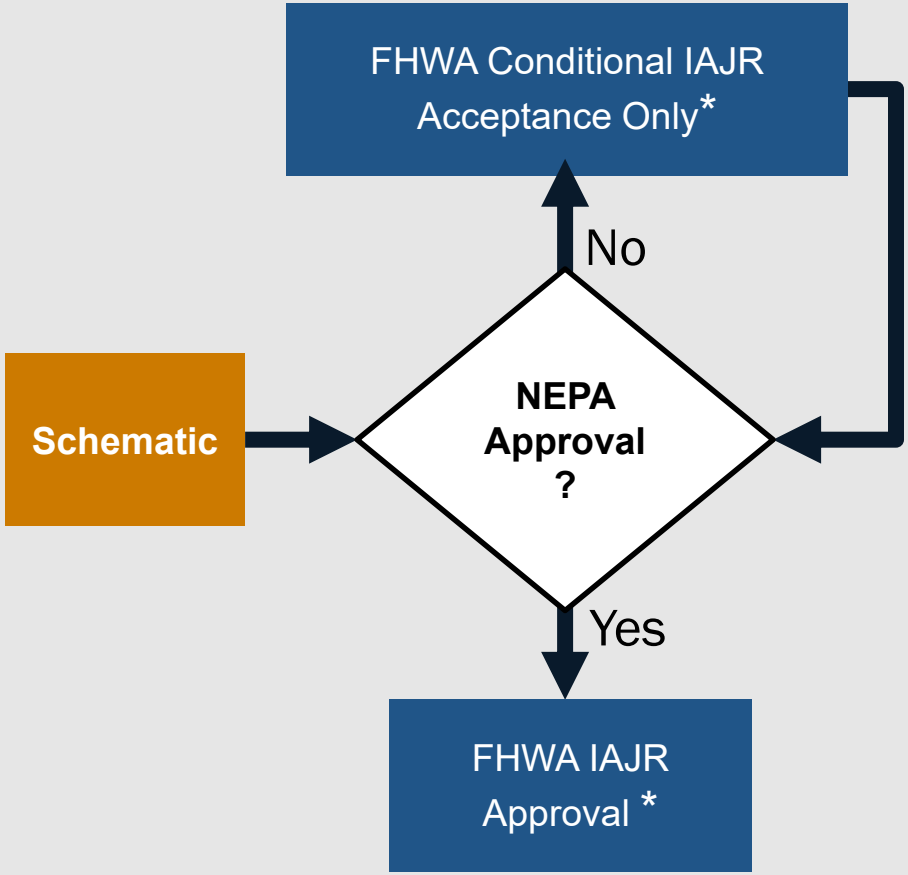


IAJR Phase: Approval



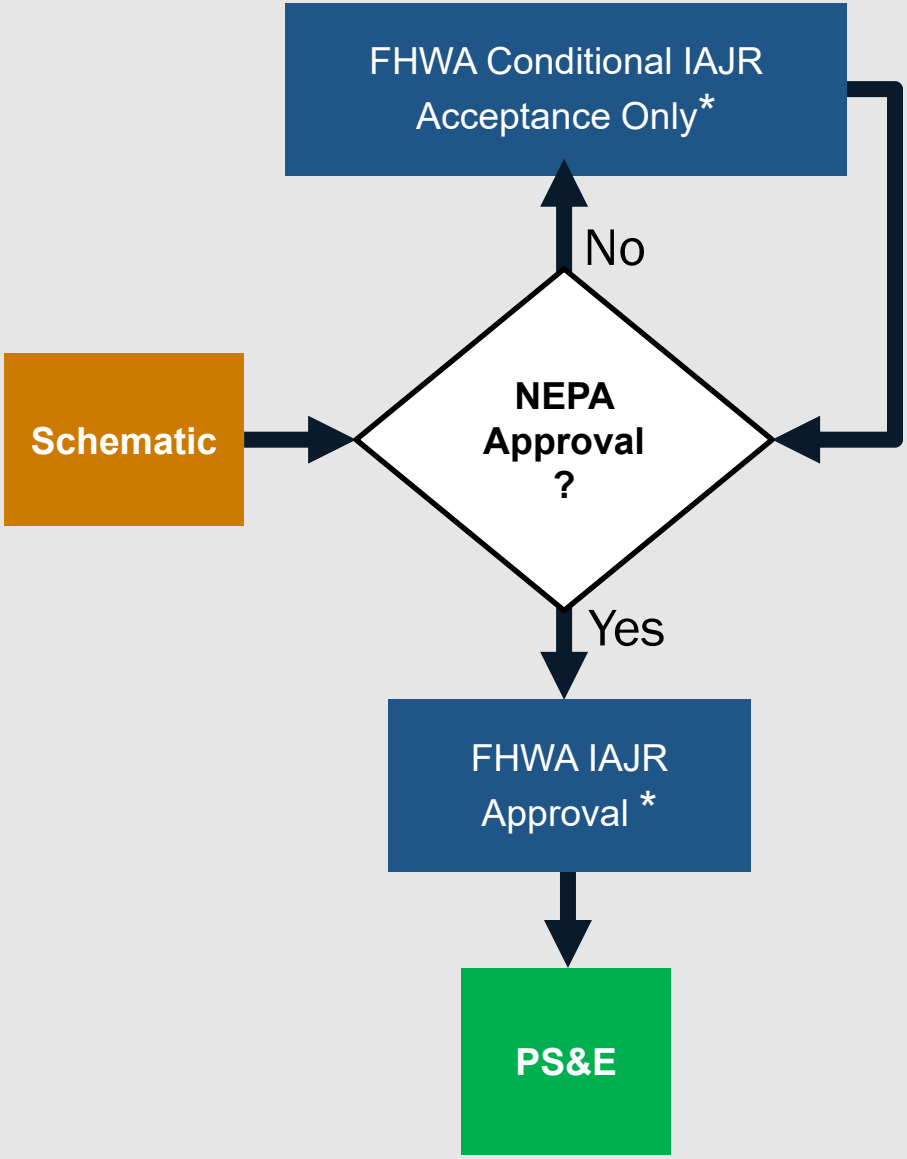
Documentation Relationship and Sequence

- Schematic (Geometric Design + Signing Layout)
  - Adequate detail to determine impacts
  - Supports capacity and operational analysis
  - Documents design criteria used
  - To be submitted to DES for review
  - Does not require FHWA review/approval (subject to PODI requirements)
- NEPA Document
  - Requires a schematic
  - Review/Approval does not require an approved IAJR
- IAJR
  - FHWA approval requires:
    - Schematic (Geometric Design + Signing Layout)
    - NEPA approval (delegated to TxDOT)
  - *Only one FHWA letter will be issued, either conditional acceptance or approval



Documentation Relationship and Sequence

- PS&E
  - Must reflect the schematic
  - Must reflect the IAJR
  - Ramp location change may trigger:
    - Additional analysis up to including IAJR re-evaluation
    - Possible NEPA amendment
  - Other design changes that impact the schematic may trigger NEPA re-evaluation (just be aware)



Agenda

- Introduction
- IAJR Process
- IAJR Methodology
- IAJR Report
- IAJR Re-evaluation
- Quality Control
- Questions/Comments?

Methodology – Early Coordination Meeting

- For the purpose of developing a technical approach for IAJR development
- Required for all projects with potential for IAJR
- District, DES, and FHWA should attend
- Initial determination of project reasonableness
- Attachment D provides a typical meeting agenda
- Meeting notes should be documented and included in the IAJR
- Additional meetings may be required for major/complex projects

Attachment D – IAJR Methodology

Interstate Access Justification Report
TxDOT Standard Operating Procedures (SOP)

Attachment D

Proposed IAJR Methodology and Assumptions

Coordination Meeting Agenda

(for determining safety, operation and engineering acceptability)

1. Need and Purpose
    a. Project description
    b. Project location map
    c. Alternatives
2. Area of Influence
    a. Mainlane
    b. Cross Roads
3. Analysis Years
    a. Existing
    b. Opening
    c. Design
    d. Interim
4. Data Collection
    a. Historic traffic count
        i. Source
    b. Current traffic count
    c. Historic crash data
        i. Source
5. Traffic Forecasting
    a. TP&P
    b. MPO/TDM
    c. Hybrid
6. Traffic Operational Analysis
    a. Existing
        i. Area Type
        ii. Traffic Conditions
    b. Procedures/Tools
        i. HCM/HCS
        ii. HCM/HCS + Synchro
        iii. CORSIM/VISSIM
    c. Measure of Effectiveness
        i. LOS
        ii. Travel Time/Speed
        iii. Calibration

Methodology – Early Coordination Meeting

Common Issues in IAJR

- Poor Need
- Not considering other Alternatives
- Insufficient Area of Influence
- Ignoring crossroads
- Unreasonable design volume
- Inappropriate traffic analysis tools selection
- Weak safety analysis
- Phased project implementation but no interim year analysis
- Documentation missing or provided too much
- Skimming in re-evaluation

Methodology

- Need
- Alternatives
- Area of Influence
- Analysis Years
- Analysis Periods
- Data Collection
- Traffic Forecasting
- Traffic Operational Analysis
- Safety Analysis

Methodology – Need

- Need for Access Modification
  - Identify transportation problems
  - Proposed improvements that address the problems
  - Specific to access change
  - Based on existing conditions and No-build conditions in design year
  - The need should be supported by existing data
  - Utilize available existing data
    - Traffic Volume - Statewide Traffic Analysis and Reporting System (STARS) http://txdot.ms2soft.com/tcds/tsearch.asp?loc=Txdot&mod
    - Crash data - Crash Recording Information System (CRIS) https://cris.dot.state.tx.us/public/Query/app/public/welcome

Methodology – Alternatives

- Access Alternatives
  - All reasonable build alternatives should be considered
  - Reasons/justification for their inclusion or exclusion
  - At a minimum, the following should be considered
    - No-build Alternative
      - No action
      - Existing condition + committed improvements
    - Transportation System Management (TSM)
      - HOV, Transit
      - Ramp metering, demand management

Methodology – Alternatives

- Access Alternatives
  - Improvements to Alternate Interchanges
    - Existing interchange capacity improvements
    - Ramp terminals/intersections
    - Frontage roads
    - Cross roads/local roadway network
  - Alternatives Providing a Change in Access
    - Interchange locations/configurations
- An alternative analysis memo will be included in the report

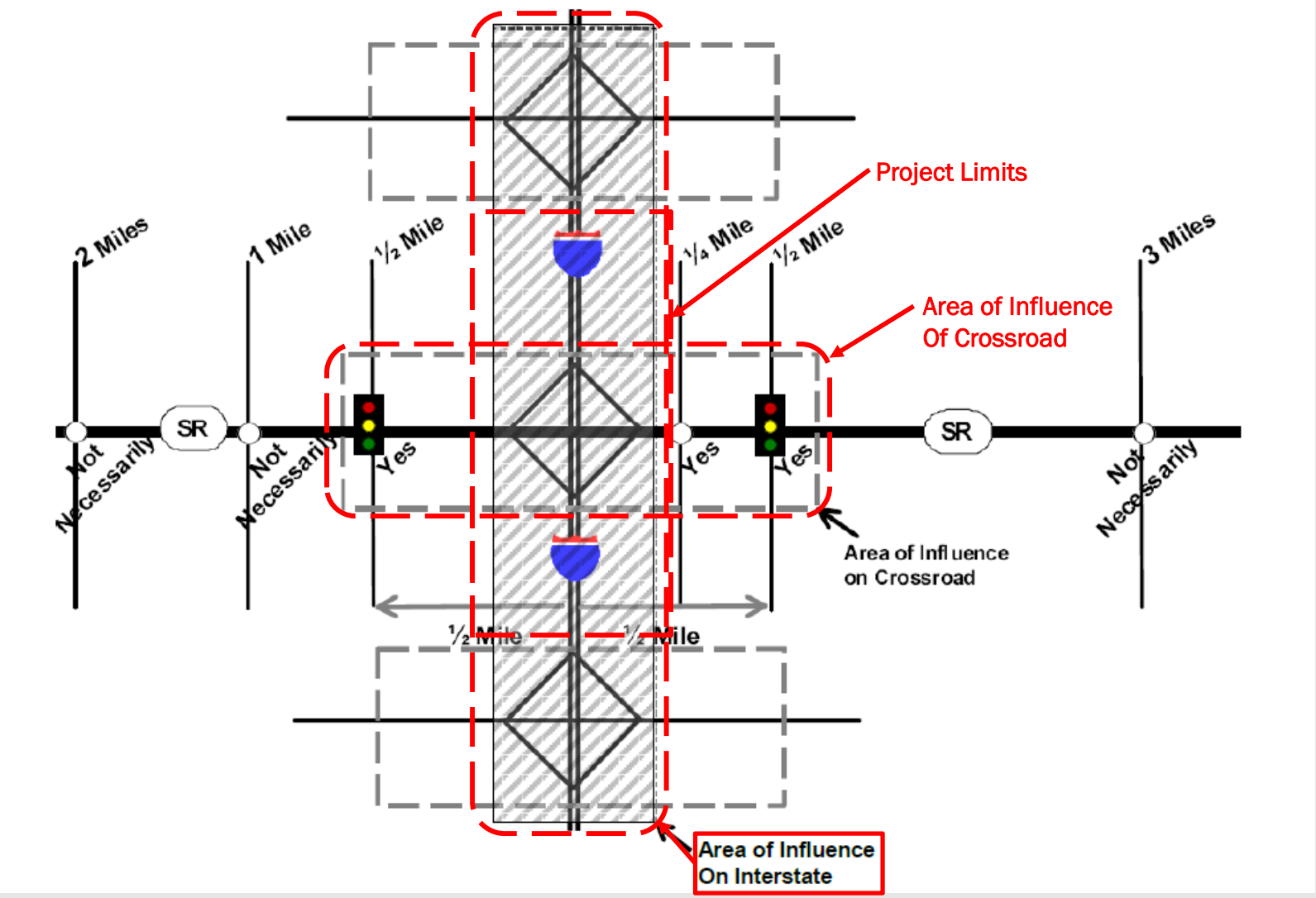
Methodology – Alternatives

- Alternatives
  - Operational and safety analysis will be based on selected build alt
  - The selected build alt best meets the need and purpose
  - The selected build alt should result in safety and operations equal to or better than the no-build alt
  - A sensitivity analysis may be required to evaluate operational performance by varying traffic demand 5-15%

Methodology – Area of Influence

- Area of Influence is the area impacted by the proposed change
- Factors to be considered
  - Area type
  - Interchange spacing
  - Extent of congestion
  - Anticipated traffic impacts
- Along Mainlane
  - In urban area, at least one adjacent interchange in either direction
  - In rural area, depends upon the interchange spacing
- Along Crossroad
  - ½ mile in either direction of proposed change
  - Crossroad of adjacent interchange usually not included
- A figure showing Area of Influence will be included in the report

Methodology – Area of Influence (FHWA Guide)



Methodology – Analysis Years

- Existing, Opening and Design Years required for each project.
  - Existing year analysis will only include existing conditions.
  - Opening and Design years will include both no-build and build conditions.
- Existing Year
  - Should be start of IAJR Analysis or
  - Preferably within 1 to 3 years from IAJR approval
- Design Year
  - Minimum 20 years after approval of final plans
  - Preferably, Opening + 20 years
- Opening Year
  - First year at which project is opened to traffic
    - For Phase construction, opening year of first phase
- Interim Year
  - Opening year of different phases
  - when design year shows failure

Methodology – Analysis Periods

- 30th highest hourly volume (design hour volume) minimum
- AM and PM peak hour may be required
- Existing 24-hr volumes should be evaluated to verify
  - Peak periods versus peak hours
  - Design Hour or K-factor
  - Peak hour selection
- For oversaturated conditions
  - Multi-hour peak period may be needed
  - 24-hr volume profile shall be evaluated

Methodology –Data Collection

- Data Collection
  - Roadway Geometry, Traffic Control
  - Traffic Count, Travel Time, etc
  - Crash Data
  - Summary of data collection
- Traffic Count
  - Weekday min. 48-hr
  - Classification count
  - Weekend (if required)
  - Where Microsimulation is used, one week or more for calibration
  - Actual traffic counts within 1 to 3 yrs of IAJR approval

Traffic Forecasting

- Traffic forecasting is complex and requires understanding of
  - Land use
  - Demographics
  - Project location
- TxDOT Transportation Planning & Programming Division (TP&P) provides guidance and approval requirements
- TP&P-Traffic Analysis Section (TPP-T) SOP
- Three approaches to develop traffic forecasts
  - Pivot/Trend Line/Growth Method
    - Based on historic growth
  - Travel Demand Model (TDM)
    - Utilizing MPO TDM
    - Comparing TDM output with traffic counts, land use
  - Hybrid Approach
    - Combination of TDM and Growth Factor
    - Start with TDM and adjust with growth factor

Traffic Forecasting Approval

TP&P provides three options for approval

- Option A: TPP-T Development
  - TPP-T develops and signs & seals
- Option B: District and TPP-T Joint Development
  - District/Consultant develop
  - TPP reviews and signs & seals
- Option C: District Development
  - District/Consultants develop
  - District reviews and signs & seals

A traffic projections/forecast memo is required

Traffic Operational Analysis

Scope and Approach depend on

- Area Type
  - Urban/Suburban/Rural
- Traffic conditions
  - Congested/un-congested
- Complexity of Project/Analysis Tools
  - Isolated /System interchange
- Selection of Analysis Tools
  - Measures of Effectiveness (MOEs)
  - Cost Effectiveness
  - FHWA Traffic Analysis Toolbox

Traffic Operational Analysis

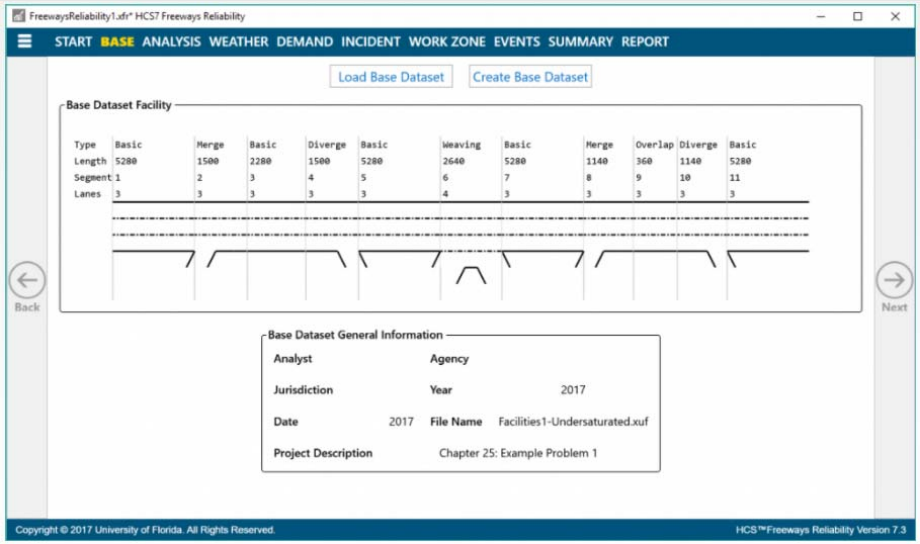
Analysis Tools – TxDOT supports the following

- Highway Capacity Manual (HCM) based (HCS and Synchro)
  - For Isolated and Under-saturated traffic
  - HCS for freeway facilities
  - Synchro for intersections
- Microsimulation (VISSIM/CORSIM)
  - Urban freeway within business district of metro area
  - Congestion extended for multi-hour
  - Complex weaving or System Interchange
  - Non-traditional interchange/intersection
  - A calibration memo will be required
- Measures of Effectiveness (MOEs)
  - LOS, Travel Time, Speed, Delay, Queue Length

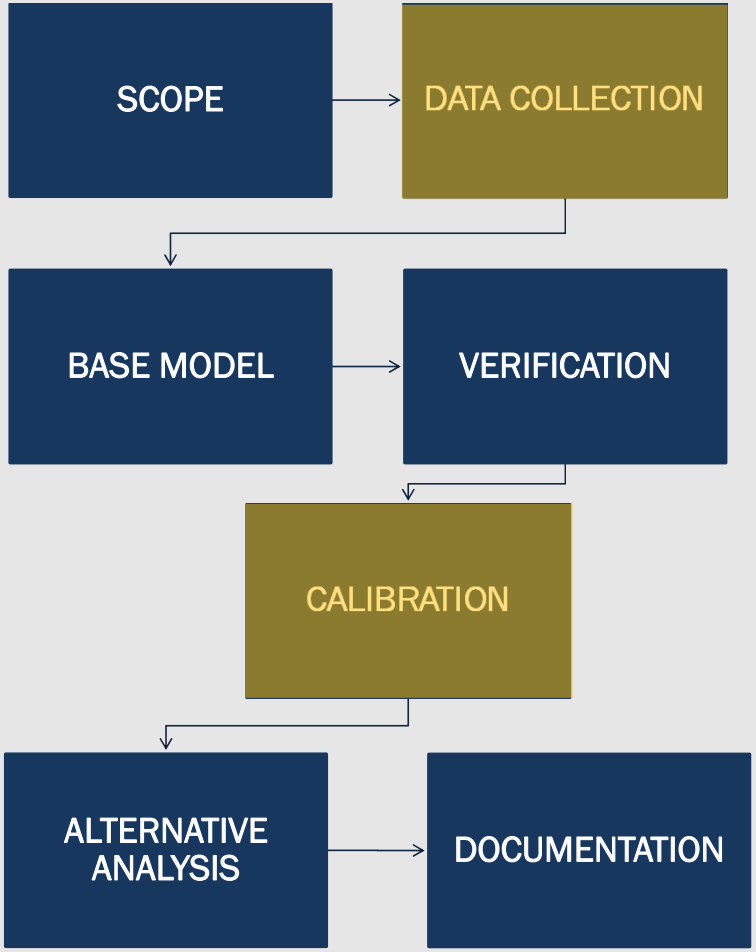
Traffic Operational Analysis

Analysis Tools

- HCM based (HCS, Synchro)
  - Quick & Reliable
  - Good for Isolated locations
  - Limitations
- Microsimulation (CORSIM, VISSIM)
  - Good for longer congestion
  - Good for system effect
  - Good for presentation
  - Data requirement
  - Time consuming



Traffic Modeling Process



Traffic Operational Analysis

- Analysis must be done for
  - Each scenario
  - All analysis periods
  - Each study area segment
- Analysis should Identify
  - Segments /intersections with unacceptable MOEs
  - Reasons for failing
  - Potential mitigating measures
  - Needed improvements within the study area
  - The effect of failure on Interstate Operation

Scope and Methodology

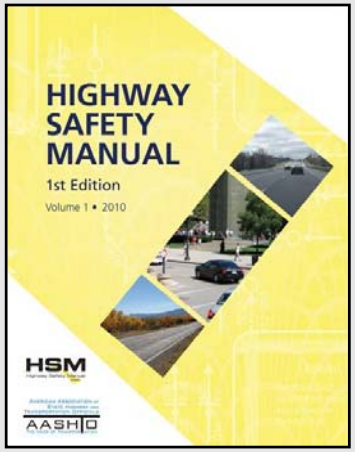
- Project type and Location
- Complexity
- Crash History
- Need and Purpose
- Safety Analysis Study Area
- Option A (Preferred)
  - Historical Crash Analysis and HSM Predictive Method
- Option B
  - Historical Crash Analysis and CMF Evaluation

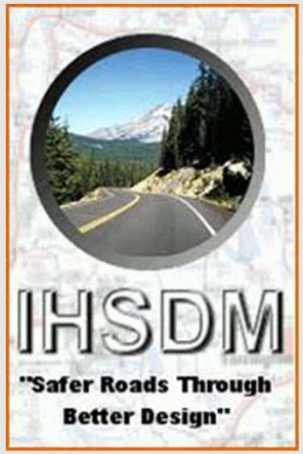
Historical Crash Analysis

- Latest 3 to 5 years (Determined during Coordination Meeting)
- To identify or confirm safety problems
- Analysis should include
  - Crash Frequency by facility type for each year
  - Crash Severity by facility type for each year
  - Crash rates (to be compared with Statewide Average)
  - Primary contributing factors
  - Manner of collision for each year by time of day
  - Crash Diagram/High Accident Location
    - Heat maps/Bar Charts/GIS

Predictive Crash Analysis

- Predictive or Quantitative analysis should be based on
  - Highway Safety Manual (HSM)
  - Safety Performance Equations (SPFs)
  - Crash Modification Factors (CMFs)
- Analysis will be done for no-build and build conditions of design year
- Tools
  - For Urban Interchange - ISATe/IHSDM
  - For Urban corridor - IHSDM
  - For Suburban/Rural area – Highway Safety Software (HSS)/IHSDM





CMF
CRASH MODIFICATION FACTORS CLEARINGHOUSE

HCS

Safety Analysis Study Area

- Area impacted by the proposed project
- Traffic analysis study area is a good starting point
- Depends upon the safety impacts of the proposed project
- Along Mainlane
  - Minimum One adjacent interchange on either side of proposed change
- Along Crossroad
  - One-half mile from the ramp terminal
- Sample Area of Influence

Design Consideration

Proposed Design should:

- Meet or exceed current design standards
- Not include partial interchange
- Only include access to public road

Design Exception (if required)

- Should be noted in the IAJR
- Request should be submitted separately

IAJR will include

- Design schematics i/c signing layout
- DSR showing design criteria

Agenda

- Introduction
- IAJR Process
- IAJR Methodology
- IAJR Report
- IAJR Re-evaluation
- Quality Control
- Questions/Comments?

IAJR Report

Interstate Access Justification Report
TxDOT Standard Operating Procedures (SOP)

Attachment E

IAJR Report Outline

1. Executive Summary
2. Introduction
   a. Background
   b. Purpose
   c. Project Location
3. Consideration and Requirements

   3.1 Purpose and Need (Policy Points 1 & 2):

   3.1.1 Existing Conditions and Consideration of Improvements That Do Not Require an Access Change.

   3.1.2 Transportation System Management Considerations

   3.1.3 Summary of Build Alternatives

   3.2 Operational and Safety Analysis (Policy Point 3)

   3.2.1 Traffic Operational Analysis
   a. Alternatives
   b. Traffic Volume
   c. Alternative Analysis

   3.2.2 Safety Analysis
   a. Historical Crash Analysis
   b. Crash Modification Estimation
   c. Predictive Crash Analysis

   3.3 Connects to Public Road and Provides for All Traffic Movements (Policy Point 4)

   3.4 Consistency with Local / Regional Plans (Policy Point 5)

   3.5 Long Range-System or Network Plan (Policy Point 6)

   3.6 Commitments and Coordination with Stakeholders (Policy Point 7)

   3.7 Environmental Status (Policy Point 8)
4. Conclusion

   4.1 Recommendations

   4.2 Funding

   4.3 Schedules

Appendix:

A	Schematic / Signing Plan
B	Alternatives Analysis Report
C	Methodology & Assumptions
D	Calibration Report
E	Traffic Count Data
F	Traffic Forecast
G	Traffic Operation Model Output
H	Crash Data / Analysis Output
I	Coordination Documentation

Agenda

- Introduction
- IAJR Process
- IAJR Methodology
- IAJR Report
- IAJR Re-evaluation
- Quality Control
- Questions/Comments?

IAJR Re-evaluation

- Three primary conditions when IAJR Re-evaluation is required:
  - Change in approved IAJR design concepts
  - Significant changes in conditions
  - Time Lapse before construction
  - Change in approved IAJR design concepts
    - Due to NEPA/environmental impacts
      - Proposed design will be compared with no-build
    - During final design
      - Proposed design will be compared with approved IAJR/No-build
    - Due to Design-Build ATC
      - Proposed design will be compared with approved IAJR

IAJR Re-evaluation

- Significant changes in conditions
  - Traffic
  - Land Use
  - Environment
  - Project is justified under the new conditions
- Time Lapse before construction
  - If the construction doesn't start within 3 years after IAJR acceptance
- Update traffic & safety data and analysis as required

IAJR Re-evaluation

- Early Coordination with DES, FHWA, ENV & TP&P
  - To determine the scope of re-evaluation
  - Effect of re-evaluation on NEPA
  - Level of analysis required
- Scope of re-evaluation
  - Safety
  - Operation
  - Design criteria
  - Approved design concept becomes benchmark
  - Proposed design should operate better or at a minimum same

Agenda

- Introduction
- IAJR Process
- IAJR Methodology
- IAJR Report
- IAJR Re-evaluation
- Quality Control
- Questions/Comments?

IAJR Quality Control (QC)

- QC is a Critical Part of
  - Technical Analysis and
  - IAJR Report
- Detailed Review should be done prior to submittal
- District is responsible for QC review
- DES will perform Quality Assurance (QA)
- Tight schedule should not affect the quality of analysis and report
- Draft Tech Memo should be provided to DES for advance review
  - Methodology
  - Alternative Analysis Report
  - Traffic Forecasting
  - Model Calibration

IAJR Quality Control (QC)

- Review Schedule
  - Interim Reviews– DES: 1 to 2 weeks
  - Draft IAJR – DES: 3 to 4 weeks
  - FHWA TX Division: 30 days
  - FHWA HQ (if applicable): 60 days
  - These do not include revisions
  - Additional time will be required for subsequent reviews

IAJR QC Checklist

Interstate Access Justification Report
Engineering Operations and Safety Analysis
TxDOT Standard Operating Procedures (SOP)

Attachment F
Interstate Access Justification Report (IAJR)
Quality Control Checklist

No	ITEM	Review	
		Checked By	Date
	Methodology Coordination		
1	Methodology & Assumptions Coordination Meeting (M&A) conducted and meeting minutes documented		
2	M&A Memo includes a project description along with a project location map		
3	Need and Purpose supported by data and justifies the project		
4	Area of influence includes adjacent interchanges & intersections as per M&A		
5	Analysis years per M&A		
6	Project Implementation Phasing		
	Traffic Volume		
7	Existing traffic count data collected		
8	Traffic forecasts are developed per TPP guidelines and approved by TxDOT		
9	Traffic forecast methodology and assumptions memo is included		
10	If Travel demand model (TDM) used for traffic forecasting , TDM is latest/approved model		
11	Traffic forecasts are checked for reasonableness		
	Traffic Analysis		
12	Traffic analysis tools selected per M&A		
13	Latest guidelines/standards have been used		
14	Study area type is Central Business District		
15	Existing and/or expected future traffic conditions is saturated		
16	If microsimulation tool was used, the report includes the calibration memo		
17	Measure of Effectiveness (MOEs) are consistent with analysis tools and project settings		
18	The results of traffic analysis been reviewed for reasonableness		
19	The results of build year analysis show better or equal operational conditions		
20	The traffic analysis software files checked to verify input, and parameters		
	Safety Analysis		
21	The safety analysis study area selected per M&A		
22	The historical crash data and analysis conducted for latest 3 to 5 years		
23	The safety analysis includes predicted crash frequency or evaluation of CMF		
	Report		
24	Design schematic is included		
25	Signing plan is included		
26	The proposed project is consistent with State/MPO/local plan and documentation included		

Questions?
Feedback

Contact

Khalid Jamil, P.E.
(512)486-5171
Khalid.jamil@txdot.gov

Sharlotte Teague, P.E.
(512)416-2673
sharlotte.teague@txdot.gov