

**Request for Interstate Design Exception No. #**

This form is to be completed and submitted for approval when nominal design value limits for controlling criteria, as identified in the [TxDOT Roadway Design Manual](https://onlinemanuals.txdot.gov/TxDOTOnlineManuals/txdotmanuals/rdw/index.htm) (RDM), on an Interstate cannot be met. Requests for Design Exceptions (DEs) on the Interstate system must be submitted to the TxDOT Design Division’s Project Delivery Section (DES-PDS) for review and approval, per the current Design Exception Request TxDOT SOP for Interstate Highways (IH DE SOP). Interstate DEs for projects identified in the FHWA Texas Division Involved Projects (TxDIP) list may require FHWA review and/or approval as identified by the TxDIP project’s individual Stewardship and Oversight (S&O) plan (TxDIP Plan). DEs involving design loading structural capacity, bridge class culvert protection, and/or bridge rails shall be sent to the TxDOT Bridge Division for review, per the current IH DE SOP. Complete this form for the Controlling CSJ and list all CSJs associated with this Request. The DE Number must be unique for each CSJ listed on the request and must correspond to the DE number listed on Form 1002. (Complete all blanks; state N/A if necessary. Suggested/informational text on this form is shaded in **gray** and should be removed and replaced with applicable text in final submittal.) The complete documentation for a roadway design exception is to be retained permanently in the District project files.

--------------------------------------------------------------------------------------------------------------------------------------------------------------------------

 Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ District: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ County: \_\_\_\_\_\_\_\_\_\_\_\_\_ Letting Date: \_\_\_\_\_\_\_\_\_\_\_\_

Select date

 Highway: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Limits: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 CCSJ: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Subordinate CSJs Associated with DE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Project No.: \_\_\_\_\_\_\_\_\_\_\_\_ Proposed Work: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-----------------------------------------------------------------------------------------------------------------------------------------------------------

1. **Type and Location of Design Exception:** *In Table 1.1, select boxes for all DE elements that are dependent upon one another and/or have the same justification for the need for the design exception and will be analyzed together in this design exception request. Use a separate Request for Design Exception form for each independent DE. In Table 1.2, list the information for each design exception location, the nominal design value limits of the 4R design criteria from the RDM, and reference the applicable design criteria page(s), chapter(s), section(s), table(s) and/or figure(s). List one design exception location per row. Each direction of travel is considered a unique design exception location and should be listed separately. Add additional lines as needed.*

**Table 1.1 –Design Exception Element(s)**

| [ ] Design Speed | [ ] Stopping Sight Distance (SSD)(1) | [ ] Bridge Class Culvert Protection |
| --- | --- | --- |
| [ ] Lane Width | [ ] Maximum Grade | [ ] Bridge Rail |
| [ ] Shoulder Width | [ ] Cross Slope | [ ] Bike Lane(2) |
| [ ] Horizontal Curve Radius | [ ] Vertical Clearance | [ ] Shared Lane (Wide Outside Lane)(2) |
| [ ] Superelevation Rate | [ ] Design Loading Structural Capacity | [ ] Bridge Deck Clear Space(2) |

(1) SSD applies to horizontal alignments, and crest vertical curves for the purposes of a Design Exception. SSD for crest vertical curves is a direct correlation with the K-Value. If the minimum K-Value is satisfied for a crest vertical curve (RDM Fig. 2-6), then the vertical SSD is satisfied under usual conditions.

(2) Bicycle Facilities only.

**Table 1.2 - Design Exception Element Location and Values**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Interstate No., Direction of Travel, Rd Part** | **Design Exception Element** | **Location(s) (DFO/MP and Station)** | **Nominal Design Value Limit** | **Proposed Value** | **Existing Value** | **Design Value Reference(s)** |
|  |  | Begin DFO/MP, Sta. | End DFO/MP, Sta. |  |  |  |  |
| I-635 EB GPL | Lane Width | X.XXX, XXX+XX | X.XXX, XXX+XX | 12 ft. | 11.5 ft. | 12 ft. | RDM Ch. 3, Sec 6, Tbl 3-18 |
| I-35 NB Exit Ramp  | SSD | X.XXX, XXX+XX | X.XXX, XXX+XX | 425 ft. | 385 ft. | 385 ft. | RDM Ch. 2, Sec 4, Tbl 2-1 |
|   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |
|  |

1. **Brief Project Description:** *Include a brief project description with any applicable project information to assist the reader in becoming familiar with the project, its purpose, and proposed improvements. Include a regional vicinity map and a project location map clearly identifying the project limits and design exception locations (using distance from origin (DFO)* ***and*** *station). Provide existing and proposed typical sections and plan views for ALL locations shown in Table 1.2, with stations and design exception locations labeled. If the request includes cross section and/or profile modifications, include existing and proposed cross section(s) and profile(s).*
2. **Why Nominal Design Value Limit(s) Cannot Be Met:** *Include a detailed description of true constraints and explanation of why nominal controlling criteria values for each design exception element and location listed in Table 1.2 cannot be met.*
3. **Future Projects Programmed to Remove Design Exception:** *Describe any future projects that are planned to remove the design exception condition(s) described within this request and bring the design up to standard. Describe any commitment(s) made that those projects will be completed in the next few years (e.g., programmed in the STIP, etc.), and describe the length of time this design exception is anticipated to be in place. If no projects are programmed or planned to bring the design values up to standard and the design exception will be permanent, state this in the response.*
4. **Compatibility of Proposed Design with Adjacent Sections of Roadway:** *Describe adjacent roadway sections and the corridor and whether or not they are compatible/consistent with the proposed design exception condition. Describe how the corridor and proposed design exception condition relate to driver expectancy. If adjacent roadway sections are not compatible/consistent with the corridor and the proposed design exception condition, mitigation measures at a minimum should be taken and described in Section 8****.***
5. **Design Exception Condition Traffic and Safety Analysis:**
6. **Crash History**

*Summarize* ***and analyze*** *the crash history within the limits of the design exception location and the design exception’s area of influence. Describe the limits of the study area/area of influence, how they were determined, and the approach taken for the analysis of the historical crash data. The limits of analysis must encompass all design exception limits, extend at least 0.25-mile beyond all limits specified in Table 1.2, and should not be less than one mile. The analysis approach and analysis tools used should be similar to the analysis for the overall project and match the complexity of the project. Reference the* *TxDOT Traffic and Safety Analysis Procedures Manual (TSAP)* *for additional guidance.*

*Complete at a minimum the three tables below for at least the three most recent full years of available data. “N” values should be replaced with specific years of analysis. Identical limits and years of analysis for project data and statewide averages must be used for all tables. Crash history and Statewide Crash Rates are available through TxDOT’s Traffic Safety Division. If the design exception element includes vertical clearance, information on bridge strikes from the applicable district office and information on other bridge vertical clearances along the corridor and alternative routes may be included in lieu of the three crash history tables, as appropriate, for a more meaningful analysis. Reference all data sources used.*

*Analyze and discuss the crash history data and crash rates in each table as they relate to existing roadway conditions, current traffic operations, and the design exception location(s) and element(s). Include as part of the discussion any identified traffic or safety issues related to crash data trends, patterns, and rates. Crash diagrams such as heat maps, bar charts or other figures graphically depicting high crash locations or other historical crash data within the study area can also be used to further analyze the historical data and support discussion.*

**Tables 6.1 and 6.2** summarize the number of crashes by severity and the number of crashes by manner of collision along [Interstate No.] from [Begin STA] to [End STA]. Crash data history was collected from TxDOT’s Crash Records Information System (CRIS) and is included in **Appendix F**...

|  |
| --- |
| **Table 6.1 - Crashes by Severity** |
| Hwy / Limits: **[Interstate No.]**, from **[Begin** **STA] to [End STA] ([Begin DFO] to [End DFO])** |
| **Year** | **Non-Injury or Property Damage Only (PDO)** | **Possible Injury (C)** | **Suspected Minor Injury(B)** | **Suspected Serious Injury(A)** | **Fatal Injury (K)** | **Unknown** | **Total** |
| *N-3* |  |  |  |  |  |  |  |
| *N-2* |  |  |  |  |  |  |  |
| *N-1* |  |  |  |  |  |  |  |
| *N* |  |  |  |  |  |  |  |
| **Total** |  |  |  |  |  |  |  |
| **% of Total** |  |  |  |  |  |  |  |
| **Statewide Crashes by Severity for Similar Interstate Type** -Choose an item. |
| *N-3* |  |  |  |  |  |  |  |
| *N-2* |  |  |  |  |  |  |  |
| *N-1* |  |  |  |  |  |  |  |
| *N* |  |  |  |  |  |  |  |
| **Total** |  |  |  |  |  |  |  |
| **% of Total** |  |  |  |  |  |  |  |

***Suggested* Figure 6.1 – Crashes by Severity**

***[Insert Figure representing data from Table 6.1]***

|  |
| --- |
| **Table 6.2 - Crashes by Manner of Collision** |
| Hwy / Limits: **[Interstate No.]**, from **[Begin** **STA] to [End STA] ([Begin DFO] to [End DFO])** |
| **Year** | **One Motor Vehicle** | **Angle** | **Rear End** | **Sideswipe** | **Vehicles in Same Direction** | **Head On** | **Vehicles in Opposite Direction** | **Other** | **Total** |
| *N-3* |  |  |  |  |  |  |  |  |  |
| *N-2* |  |  |  |  |  |  |  |  |  |
| *N-1* |  |  |  |  |  |  |  |  |  |
| *N* |  |  |  |  |  |  |  |  |  |
| **Total** |  |  |  |  |  |  |  |  |  |
| **% of Total** |  |  |  |  |  |  |  |  |  |

***Suggested* Figure 6.2 – Crashes by Manner of Collision**

***[Insert Figure representing data from Table 6.2]***

**Table 6.3** shows the crash rates on [Interstate No.] for the same study limits and years reported in **Tables 6.1** and **6.2**. AADT from [reference source of AADT data (e.g., TxDOT’s STARS, Statewide Planning Map, etc.)] was used……

|  |
| --- |
| **Table 6.3 – Crash Rate** |
| Hwy / Limits: **[Interstate No.]**, from **[Begin** **STA] to [End STA] ([Begin DFO] to [End DFO])** | Roadway Segment Length (mi.): #.### |
| **Year** | **Crashes** | **AADT** | **Crash Rate (HMVMT)** | **Average Statewide Crash Rate (HMVMT) for Similar Interstate Type -** Choose an item. |
| *N-3* |  |  |  |  |
| *N-2* |  |  |  |  |
| *N-1* |  |  |  |  |
| *N* |  |  |  |  |

*In the above table, crash rates for road segments are determined using the following formula:*

***R = 108 x C / (365 x N x V x L)***

*Where,*

***R*** *= Crash rate for the road segment expressed as crashes per 100 million vehicle-miles of travel
 (HMVMT).*

***C*** *= Total number of crashes in the study period.*

***N*** *= Number of years of data.*

***V*** *= Number of vehicles per day (both directions).*

***L*** *= Length of roadway segment in miles.*

***Suggested* Figure 6.3 – Crash Rate**

***[Insert Figure representing data from Table 6.3]***

*Include historical data analysis discussion.*

1. **Anticipated Changes to Crashes with the Proposed Design Exception**

*Discuss* ***and analyze*** *the predicted safety outcomes of the proposed design exception condition and how they compare to the predicted safety outcomes of existing conditions. Describe the limits and approach taken for the predictive safety analysis. The limits of the predictive safety analysis should be identical to those used for the historical crash analysis. The analysis approach and analysis tools used should be similar to those used for the overall project and match the complexity of the project. Reference the* *TxDOT Traffic and Safety Analysis Procedures Manual (TSAP)* *for additional guidance.*

*Describe the anticipated changes to crashes for the No-Build (existing) condition and the Build condition (with the design exception) for both the opening and design years as they relate to roadway conditions, anticipated traffic operations, and the design exception location(s) and element(s). Utilize HSM-based predictive safety analysis methods, if applicable, to quantify the anticipated changes in crashes due to the proposed design. In instances where the crash history does not adequately address the issue (e.g., new alignment, substantial changes are made, etc.), use relevant Crash Modification Factors (CMFs), if available, and/or a qualitative analysis to support conclusions related to anticipated changes in crashes for the proposed design. Safety Analysis resources and a TxDOT list of suggested CMFs can be found on the* [*DES Safety Analysis website*](https://crossroads/divisions/des/sections/project-delivery/highway-safety-operations/safety-analysis.html)*. Attach and reference all Native Predictive Safety Analysis Files, Predictive Safety Analysis Results and Summary Sheets, and CMF summaries used as part of the analysis and discussion.*

*Example Discussion:*

To analyze the safety impacts of this design exception, a predictive safety analysis was performed using AASHTO’s Enhanced Interchange Safety Analysis Tool (ISATe) to estimate expected crashes and cumulative CMFs for the proposed facility. For purposes of this analysis, existing and proposed conditions were evaluated to determine the change in crashes related to the implementation of this design exception for reduced widths of the GP lanes, inside shoulder, and outside shoulder and the modified weaving configuration. The ISATe spreadsheets showing the analyses of both the No-Build and Build conditions and summary sheets are included in **Appendices G and H.** The results of the Safety Prediction Worksheets are summarized in **Table 6.4.**

**Table 6.4** summarizes the total predicted number of crashes on[Interstate No.], from **Begin STA to End STA** for the No-Build Conditions compared to the Design Exception Build Condition for the anticipated YYYY opening year and the ZZZZ design year *(or over the life of the Design Exception Condition, if less)*.

|  |
| --- |
| ***Suggested* Table 6.4 – YYYYY Opening Year and ZZZZ Design Year Predicted Crashes** |
| Hwy / Limits: **[Interstate No.]**, from **[Begin STA] to [End STA]** |
| **Year** | **Condition** | **Predicted Crashes** | **Change in CrashesCompared to No-Build Conditions** | **Percent Change in Crashes Compared to No-Build Conditions** |
| YYYY | No-Build |  |  |  |
| YYYY | Build |  |  | % |
| ZZZZ | No-Build |  |  |  |
| ZZZZ | Build |  |  | % |

1. **Comparison of Design Alternatives Considered:**
2. **Description of Alternatives, and Alternative Quantitative Analysis**

*Describe and analyze the quantitative elements of the design alternatives considered (preferably in a table) showing which variables change from base conditions and costs associated with each alternative. Explain why each alternative was eliminated and why the proposed design was preferred over each alternative. At a minimum, an alternative for a No-Build alternative and an alternative for a Build alternative with no design exception should be included as part of the analysis. Attach and reference in the discussion the Design Alternative Cost Estimate Details used to determine the costs for each alternative.*

Several design alternatives were considered before this design exception design alternative was chosen. These design alternatives are summarized in **Table 7.1** and discussed in further detail below.

***Suggested* Table 7.1 - Design Alternatives**

| Hwy / Limits**: [Interstate No.]**, from **[Begin STA] to [End STA]** |
| --- |
| **Element of Comparison** | **Existing Conditions** | **Design Exception Condition** | **Alternative 1 -****No Build**  | **Alternative 2 -****Ex.-Widen to meet criteria** | **Alternative 3 -****Brief Description** |
| [IH XX] EB Lane Width | 12 ft. | 11 ft. | 12 ft. | 12 ft. | 11.5 ft. |
| [IH XX] EB Inside Shldr Width | 10 ft. | 10 ft.  | 10 ft.  | 12 ft.  | 4 ft.  |
| [IH XX] EB Stopping Sight Distance | 700 ft. | 690 ft. | 700 ft. | 730 ft. | 640 ft. |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Total Predicted Crashes YYYY-ZZZZ |  |  |  |  |  |
| Reduction in Total Crashes compared to Existing Conditions |  |  | 0 |  |  |
| Percent Change in Total Predicted Crashes Compared to Existing Conditions |  | % | 0% | % | % |
|  Design Alternative Cost |  | $ | $ | $ | $ |

*Describe and discuss each alternative considered and why it was not selected.*

***Alternative No. 1*** *is to not build the project…*

***Alternative No. 2*** *is to widen to meet design criteria…*

***Alternative No. 3****…*

1. **Additional Discussion on the Proposed Design Exception’s Impact to Project to Justify Not Selecting an Alternative Design**

*Provide additional justification for the proposed design’s impact as it relates to such factors as project schedule, operations,* *constructability, traffic control, right-of-way, the community, the environment, cost, usability by all modes of transportation, incident management, storm drainage, and/or other considerations that are not easily quantifiable. Describe factors not yet discussed that will justify this design exception or were used to eliminate the other design alternatives discussed in Section 7a***.**

1. **Proposed Practical Mitigation Measures, Their Costs and Impacts to Safety:** *Describe and discuss practical mitigation measures (e.g., delineation, milled rumble strips, signing, lighting, etc.) proposed for this project to mitigate the design exception condition and the costs associated with each. (Reference* *[Design Decision Documentation and Mitigation Strategies for Design Exceptions (March 2024)](https://highways.dot.gov/sites/fhwa.dot.gov/files/Design%20Exceptions%20Mitigation_Strategies%20Guide_508.pdf?_gl=1*m3yiyl*_ga*MTg1OTk0NDg1NC4xNzExMTI2NjQ5*_ga_VW1SFWJKBB*MTcyMzIzMzY4Ny42LjAuMTcyMzIzMzY4Ny4wLjAuMA..) or other mitigation guidance.) Provide crash reduction factors (CRFs)/ crash modification factors (CMFs) such as those found in the* [*Crash Modification Factors Clearinghouse*](http://www.cmfclearinghouse.org/) *or other reference material, if available, for any of the proposed mitigation measures, and discuss how the proposed mitigation measures are anticipated to reduce crashes. If no mitigations measures are to be implemented, provide justification.*

**Attachments:** *Attach all exhibits (diagrams, tables, figures, analyses, reports, etc.), and label each attached document with the corresponding Appendix notation and title, as identified in this citation. Reference each Appendix within the narrative of the main document above, where applicable. Revise the list of appendix titles below, as necessary, to agree with the title on each appendix. At a minimum, the following should be included as appendices for most DEs:*

**Appendix A – Maps** ***(e.g., Regional Vicini******ty Map and Project Location Map/Title Sheet)*** *(showing DFO and station limits of project limits and general design exception locations))*

**Appendix B – Existing and Proposed Typical Sections** *(to include all design exception locations and study limits, with station limits and DE elements labeled)*

**Appendix C – Plan Views** *(of specific design exception locations and study limits, showing DFO/stations of limits and design values of the design exception elements)*

**Appendix D – Existing and Proposed Profiles** *(as applicable)*

**Appendix E – Existing and Proposed Cross Sections** *(as applicable)*

**Appendix F – Historical Crash Data** *(used for the historical crash analysis)*

**Appendix G – Native (Electronic) Predictive Safety Analysis Files** *(used to generate predictive crash results)*

**Appendix H – Predictive Safety Analysis Summary Sheets** *(showing predictive crash results; e.g., ISATe / IHSDM outputs)*

**Appendix I – CRF / CMF Summary** *(pdf copy, as applicable)*

**Appendix J – Design Alternative Cost Estimate Details** *(used to determine the alternative costs)*

**Appendix K – Completed Design Exception Checklist** *(used for QC / QA)*