

Template Version 1.1

REV: January 2023

**Interchange   
Justification Report Amendment for**

{Project Name}

{County, Iowa}

Project Number {IMN-XXX-X(XXX)XX—XX-XX}

Prepared for:





{Month Day, Year}

Instructions for Using Template

Use this template as a starting point for writing an Interchange Justification Report (IJR) Amendment related to an access change request. This template provides materials to be supplied in all IJR Amendments and in the order in which the materials are to be presented. The user is encouraged to follow this template as strictly as possible to provide consistency for documentation. The Iowa Department of Transportation recognizes that every project is unique, and modifications to template materials and organization of materials may be necessary to meet the unique characteristics of a project. This template should be used in conjunction with the [Iowa DOT User Guide for New or Revised Interchange Access](https://www.iowadot.gov/ijr). Sections 3.1.1 and 4.4.1 of the [Iowa DOT User Guide for New or Revised Interchange Access](https://www.iowadot.gov/ijr) provide guidance pertaining to the IJR Amendment.

The page layout for this template is generally 8 ½” x 11” portrait, and this should be maintained by the user. It may be appropriate to provide figures or tables on pages that are 11” x 17” landscape.

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* Text in **bold/orange** is instructional to help the user complete the document. This text should be deleted from the document once the user has followed the instructions provided by this text.
* Text that is **bold/red** is a reference to a table or figure. This format should be used for all references to tables and figures.
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Example tables and figures are provided in this template. These tables and figures should be populated, replaced or deleted as appropriate. Table and figure title numbers are set up to reference the appropriate section of the document and the appropriate table or figure number within each section. The reference to tables and figures within the body of the document is cross-referenced to the table or figure title. When adding tables or figures, the user should match the formatting of provided tables and figures (including table/figure titles and references within the body). When adding or removing tables or figures, the provided table and figure title numbers and references within the body should be updated.

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Double-click in the header and Word will automatically update the project name and date after filling out the cover page.

The lists for Contents, Tables and Figures on the following page(s) should be updated after completing the document.

**This page is to be deleted prior to submittal.**

**{Project Name}**

**{County, Iowa}**

**Project Number**

**{IMN-XXX-X(XXX)XX—XX-XX}**

**This document has been prepared to obtain Federal Highway Administration approval for new or revised interchange access on the Interstate System.**

**Interchange Justification Report Amendment**

**Prepared by**

**Agency or Company**

**For**

**The Iowa Department of Transportation and Federal Highway Administration**

**{Month Day, Year}**

|  |  |
| --- | --- |
| **Replace Seal** | I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.  **Add Signature** MM/DD/YYYY  **JOHN SMITH, P.E.** (date)  License No. **XXXXX**  My license renewal date is **December 31, YYYY**  Pages of sheets covered by this seal:  List Pages |

**District X Office/Highway Division**

Address l City, State Zip

Phone: XXX-XXX-XXXX l Email: Email@iowadot.us

**Following review and approval of the IJR Amendment by the Iowa DOT District Engineer, a letter of approval by the District Engineer for the IJR Amendment is sent via email to the FHWA, Iowa Division for approval. This email is sent to** [**Iowa.FHWA@DOT.gov**](mailto:Iowa.FHWA@DOT.gov)**. Typically for this action, a ProjectWise link to the final IJR Amendment is sent to FHWA with this letter of approval attached to the email. Once the FHWA has approved the IJR Amendment, the FHWA will submit a letter of approval for the IJR Amendment. The letters of approval by the Iowa DOT and FHWA should be filed with the final IJR Amendment that is signed and approved.**

**This page should be used as a guide when preparing the Iowa DOT letter of approval. Remove this page from the IJR Amendment document that is submitted for reviews.**

Month Day, Year

Program Delivery Team Leader

FHWA, Iowa Division

105 6th Street

Ames, Iowa 50010

Subject: Project Name Interchange Justification Report Amendment

Project Number IMN-XXX-X(XXX)XX—XX-XX

Dear Program DeliveryTeam Leader,

,

I have approved this Interchange Justification Report Amendment, dated Month Day, Year for Engineering Operations and I am submitting it to FHWA for approval.

Sincerely,

**Add Signature**

Name

District X Engineer

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# Executive Summary

This Interchange Justification Report (IJR) Amendment provides documentation of updates to a previously approved IJR to justify new or revised access on Interstate facility at crossroad (mile marker) in County, Iowa, in fulfillment of the Federal Highway Administration (FHWA) [Policy on Access to the Interstate System](https://www.fhwa.dot.gov/design/interstate/170522.cfm). The proposed access change would describe the changes that would be made by the proposed access change. The access change request is being made to state the goals and objectives of the proposed access change. This IJR Amendment was completed to address updates to summary of items being updated from the previously approved IJR.

Summary of existing, No-Build and Build conditions.

**Provide a summary of results for traffic forecasts, operational analysis and safety analysis completed for existing, No-Build and Build conditions. This summary should be similar to the summary provided in the** [**Conclusions**](#_Conclusions) **section of this IJR Amendment.**

The FHWA Policy requirements have been addressed through reviews and evaluations completed in this IJR Amendment. The Policy requirements and responses are provided in the [Conclusions and Recommendations](#_Conclusions_and_Recommendations) chapter of this IJR Amendment. A summary of the FHWA Policy responses is provided below:

* FHWA Policy (2017) Requirement 1 response: Response.
* FHWA Policy (2017) Requirement 2 response: Response.

**In the bullet list above, include a bullet for each of the requirement responses provided in the Conclusions section of the. For FHWA Policy requirements addressed in a NEPA or other approved planning study, such as a Location Study, or requirements that are not updated from the previously approved IJR, do not provide a bullet in the list above.**

Recommendations for the proposed access change.

**Provide recommendations for the proposed access change based on the evaluations and conclusions documented in the IJR Amendment. The recommendation text should be similar to the recommendations provided in the** [**Recommendations**](#_Recommendations) **section of this IJR Amendment.**

# Introduction

This Interchange Justification Report (IJR) Amendment provides documentation of updates to a previously approved IJR to justify new or revised access on Interstate facility at crossroad (mile marker) in County, Iowa, in fulfillment of the Federal Highway Administration (FHWA) [Policy on Access to the Interstate System](https://www.fhwa.dot.gov/design/interstate/170522.cfm). The proposed access change would describe the changes that would be made by the proposed access change. The access change request is being made to state the goals and objectives of the proposed access change. The engineering and operations documented in this IJR Amendment are provided through operational and safety evaluations, conclusions, and recommendations.

Project background.

**List the dates of any previously approved IJRs. Describe the changes that have occurred since approval of the previous IJR that have led to the need for an IJR Amendment. Provide reference to local, regional and statewide planning documents that include the project and have been updated or published since the previously approved IJR. Provide any update to identified funding sources for the proposed access change. For projects that are not in a planning document, describe the steps being taken to have the project added in local/regional/state planning documents.**

This IJR Amendment was completed to address updates to summary of items being updated from the previously approved IJR. The updates from the previously approved IJR that are included in this IJR Amendment are summarized in **Table 1‑1**.

Table ‑. IJR Amendment Updates

| Chapter/Materials | Updated from Previously Approved IJR | Summary of Updates |
| --- | --- | --- |
| Methodology | Yes or No | Describe the updates to methodology from the previously approved IJR. **If methodologies were not updated with the IJR Amendment, put “N/A” in this box.** |
| Existing Conditions | Yes or No | Describe the updates to existing conditions from the previously approved IJR. **If existing conditions were not updated with the IJR Amendment, put “N/A” in this box.** |
| Future Year No-Build Conditions | Yes or No | Describe the updates to future year No-Build conditions from the previously approved IJR. **If future year No-Build conditions were not updated with the IJR Amendment, put “N/A” in this box.** |
| Problem Definition | Yes or No | Describe the updates to problem definition from the previously approved IJR. **If problem definition were not updated with the IJR Amendment, put “N/A” in this box.** |
| Alternatives | Yes or No | Describe the updates to alternatives from the previously approved IJR. **If alternatives were not updated with the IJR Amendment, put “N/A” in this box.** |
| Alternatives Analysis | Yes or No | Describe the updates to alternatives analysis from the previously approved IJR. |
| Social, Economic and Environmental Reviews | Yes or No | Describe the updates to social, economic and environmental reviews from the previously approved IJR. **If social, economic and environmental reviews were not updated with the IJR Amendment, put “N/A” in this box.** |

# Methodology

The following methodologies are updated from the previously approved IJR for this IJR Amendment:

* Area of Influence.
* Analysis Years/Scenarios and Periods.
* Traffic Forecasting Methodologies.
* Operational Analysis Methodologies.
* Safety Analysis Methodologies.
* Geometric Design Criteria.

**For any of the items listed above that are not being updated from the previously approved IJR, delete the item from the list above and delete the corresponding subsection in this chapter. If no items listed above are being updated as part of the IJR Amendment, replace the above highlighted text with a statement similar to, “Evaluation methodologies are unchanged from the previously approved IJR.”, and delete all subsections and headings in this chapter.**

## Area of Influence

The area of influence for operational and safety analyses is shown in **Figure 2‑1**. The area of influence includes freeway mainline, ramps, ramp terminal intersections and crossroad intersections within the following boundaries:

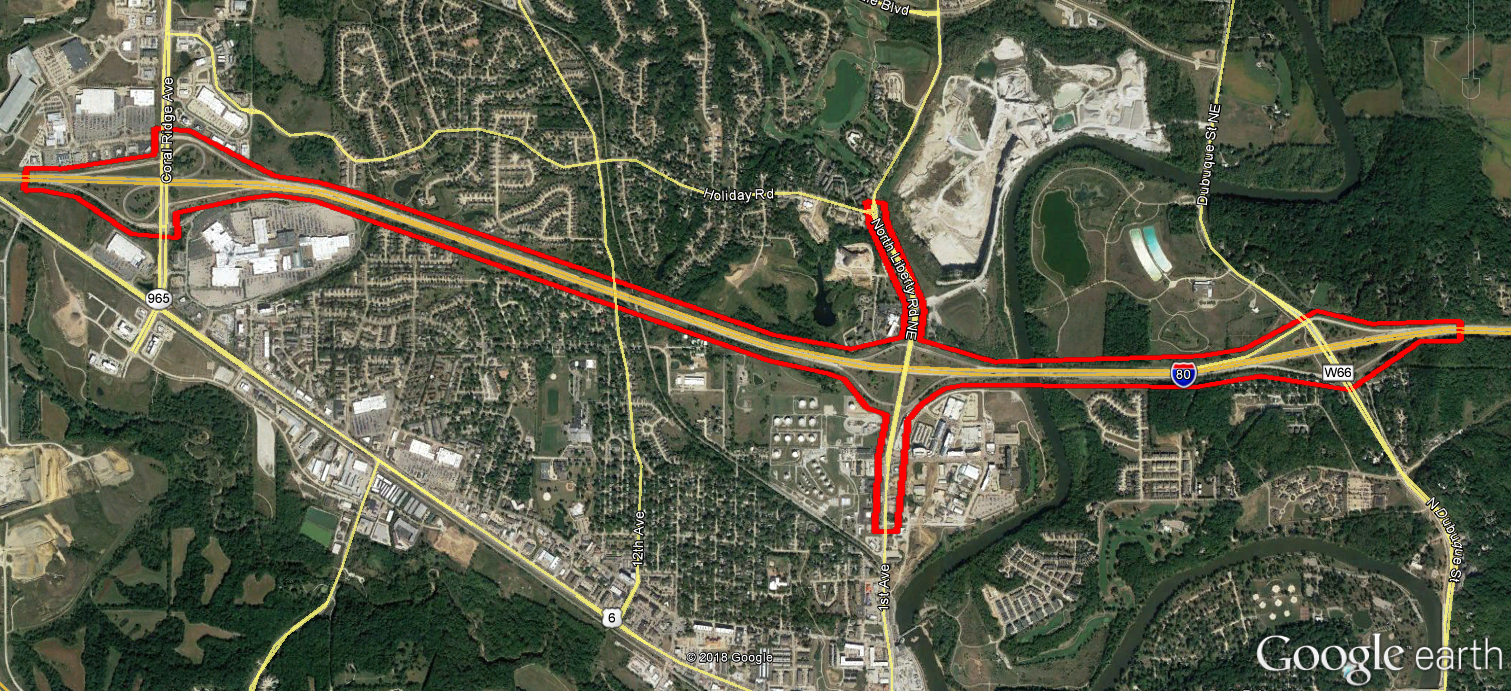
* West limits: XXXXX.
* East limits: XXXXX.
* South limits: XXXXX.
* North limits: XXXXX.

**Example of boundary summary for example graphic in Figure 2-1:**

* **West limits: West ramp junctions of the I-80 / Coral Ridge Avenue interchange (Exit 240).**
* **East limits: East ramp junctions of the I-80 / Dubuque Street interchange (Exit 244).**
* **South limits: 1st Avenue / E 7th Street intersection.**
* **North limits: 1st Avenue / Holiday Road intersection.**

**Provide additional details to clearly define the area of influence as appropriate. Describe how the area of influence changed from the previously approved IJR.**

Figure ‑. Area of Influence



N

Area of Influence

**(Replace this example graphic with project area of influence graphic)**

## Analysis Years/Scenarios and Periods

### Operational Analysis Years/Scenarios and Periods

The operational analysis scenarios updated with the IJR Amendment are outlined in **Table 2‑1**. **Provide any additional description needed to describe the need for updated analysis.**

Table ‑. Operational Analysis Years/Scenarios Updates

| Scenario | Updated from Previously Approved IJR | **Previous Year** | Updated Year | Reason for Updated Analysis |
| --- | --- | --- | --- | --- |
| Existing (base) year | Yes or No | 20XX | 20XX | Change in year/volumes or geometry |
| Design year No-Build | Yes or No | 20XX | 20XX | Change in year/volumes or geometry |
| Design year Build | Yes or No | 20XX | 20XX | Change in year/volumes or geometry |
| Opening year Build | Yes or No | 20XX | 20XX | Change in year/volumes or geometry |
| Interim year Build  **Remove this row if not included in previous IJR or IJR Amendment** | Yes or No  **Replace with “New Evaluation” if part of IJR Amendment but not included in previous IJR** | 20XX | 20XX | Change in year/volumes or geometry |

**(Replace Updated Year with “N/A” for any scenario not updated with the IJR Amendment)**

Operational analysis was completed for periods of each scenario. **(e.g., AM and PM peak hours). If the periods are unchanged from the previously approved IJR, provide a statement similar to, “The periods are unchanged from the previously approved IJR.” If the periods are different from the previously approved IJR, describe how the periods changed from the previously approved IJR. It may be necessary or beneficial to show existing data to support determination of the period durations, such as ATR or INRIX speed data.**

### Safety Analysis Scenarios

The following scenarios for traffic safety analysis were updated from the previously approved IJR:

* Existing crash analysis for the most recent number of years years of crash data (years 20XX-20XX) (the previous IJR evaluated crashes for years 20XX-20XX). **Number of years is typically a minimum of five years. Remove this bullet if not updated from previous IJR.**
* Predictive crash analysis for design year 20XX No-Build. **If conducted for the previously approved IJR, state the year of the No-Build predictive crash analysis for the previous IJR. Remove this bullet if not updated from the previous IJR.**
* Predictive crash analysis for design year 20XX Build Alternative Name. **Provide a separate bullet for each Alternative evaluated for the design year. If conducted for the previously approved IJR, state the year of the Build predictive crash analysis for the previous IJR. Remove this bullet if not updated from the previous IJR.**

## Traffic Forecasting Methodologies

**For the template materials below, remove any forecasting methodology discussion that is unchanged from the previously approved IJR. For any forecasting methodologies that are updated with the IJR Amendment, provide a brief description on how the methodologies compare/contrast to that used for the previously approved IJR.**

Existing conditions traffic volumes were developed from traffic counts, vehicle classification data and origin-destination data obtained for this project. Existing conditions traffic data was obtained from state the sources and methodologies for obtaining existing conditions data. **Modify or add to the methodology for developing existing conditions traffic volumes as appropriate.** **It may be necessary or beneficial to provide the existing conditions data sources in a bullet list or table.**

Traffic forecasts for design year No-Build and Build conditions were provided by source. Forecasts were based on state the Travel Demand Model(s) to be used and the horizon year for the Travel Demand Model(s), and utilized existing turning patterns, vehicle classification data and origin-destination data as appropriate. **Modify or add to the methodology for developing design year forecasts as appropriate.**

Traffic forecasts for opening year Build conditions were provided by source. State the methodology for developing opening year forecasts.

Traffic forecasts for interim year Build conditions were provided by source. State the methodology for developing interim year forecasts. **Remove this paragraph if not included for the traffic operational analysis.**

Traffic forecasts are provided in tables and/or figures later in this IJR Amendment in conjunction with traffic operational analyses.

## Operational Analysis Methodologies

Operational analysis of locations within the area of influence was completed using list software and software version used for the operational analysis for the scenarios/periods outlined in [Section 2.2.1](#_Operational_Analysis_Years/Scenario). **(For IJR Amendments where the operational analysis methodologies are updated but the scenarios/periods are not, include a summary of the scenarios/periods in this section, since the operational scenarios/periods section will be removed.)** Operational analysis methodologies updated with this IJR Amendment are outlined in the following section or sections.

### Software Input Assumptions and Methodologies

**If software input assumptions and methodologies are unchanged from the previously approved IJR, delete this section (including the section heading).**

Data, forecasts and conceptual layouts were used for inputs of geometry, traffic control, traffic volumes and travel speeds. Detailed assumptions on software input assumptions and methodologies are provided in the project Methods and Assumptions (M&A) document located in the appendix. **(If the M&A document was not updated as part of the IJR Amendment, delete the previous sentence.)**

**Provide additional details to summarize the software input assumptions and methodologies as appropriate. Provide a brief description on how the assumptions and methodologies compare/contrast to those used for the previously approved IJR.**

### Performance Measures

**If performance measures are unchanged from the previously approved IJR, delete this section (including the section heading).**

Summarize the performance measures used to report operational analysis results.

**The outline of operational software results and performance measures provided in the M&A document should be used to populate this section. Level of service (LOS) is typically the primary performance measure reported from the operational analysis in an IJR. Document the change in performance measures from the previously approved IJR to the IJR Amendment.**

### Microsimulation Model Calibration and Number of Runs

**This section is only applicable for projects that include microsimulation modeling. For projects that do not include microsimulation modeling, delete this section (including the section heading). If microsimulation model calibration is not updated from the previously approved IJR, delete this section (including the section heading).**

Data and field observations were used to calibrate the existing conditions microsimulation models. The procedures outlined in the [Iowa DOT Microsimulation Guidance](https://www.iowadot.gov/ijr) document were used for model calibration and to determine the number of model runs to complete for each model. Ten model runs were completed for each model to produce a 95% confidence of achieving results within a maximum tolerable error of 10% of the average for a given performance measure. **(Describe the process for completing simulation to produce results within a desired confidence and tolerable error.)** Details of the microsimulation model calibration and determination for number of model runs are provided in the Calibration Memo located in the appendix.

**Document the change in microsimulation model calibration and number of runs from the previously approved IJR to the IJR Amendment in the Calibration Memo.**

## Safety Analysis Methodologies

Safety analysis of locations within the area of influence was completed for the scenarios outlined in [Section 2.2.2](#_Safety_Analysis_Scenarios). **(For IJR Amendments where the safety analysis methodologies are updated but the scenarios are not, include a summary of the scenarios in this section, since the safety scenario section will be removed.)** The methodologies and procedures outlined in the [Iowa DOT Data Driven Safety Guidance](https://www.iowadot.gov/ijr) document were used to complete the safety analysis. Existing crash analysis was completed by comparing recent historical crashes obtained from source to statewide averages and summarizing crash trends. Predictive crash analysis was completed using state the tool(s) or resource(s) used to predict the expected change in crashes between design year scenarios.

**Provide additional details to describe the safety analysis methodologies as appropriate. Provide a brief description on how the safety analysis methodologies compare/contrast to those used for the previously approved IJR.**

## Geometric Design Criteria

Geometric design criteria were documented using the electronic form from the [Iowa DOT Design Manual, Section 1C-1](https://iowadot.gov/design/dmanual/01c-01.pdf) for each roadway type within the area of influence.

**List additional resources that were used in the development of design criteria, such as the Iowa DOT adopted versions of the American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets or AASHTO Policy on Design Standards Interstate System, Highway Capacity Manual, or local City/County design standards. Provide any guiding principles or key features that supported development of the design criteria. Describe how geometric design criteria compare/contrast to those used for the previously approved IJR.**

### Anticipated Design Exceptions

Description of anticipated design exceptions

**Provide descriptions of anticipated design exceptions. Note if anticipated design exceptions were documented in the previously approved IJR. If no design exceptions are anticipated, provide a statement similar to, “No design exceptions are anticipated at this time based on current information.”**

# Existing Conditions

The following existing conditions reviews/evaluations are updated from the previously approved IJR for this IJR Amendment:

* Existing Roadway Network.
* Existing Alternative Travel Modes.
* Existing Traffic Volumes.
* Existing Operational Analysis.
* Existing Crash Analysis.

**For any of the items listed above that are not being updated from the previously approved IJR, delete the item from the list above and delete the corresponding subsection in this chapter. If no items listed above are being updated as part of the IJR Amendment, replace the above highlighted text with a statement similar to, “Evaluation of existing conditions is unchanged from the previously approved IJR.”, and delete all subsections and headings in this chapter.**

## Existing Roadway Network

**Provide an update to the existing roadway network from the previously approved IJR. List geometric features, safety features or facilities that are relevant to the project goals and objectives. The discussion of existing roadway network should typically be limited to one or two paragraphs. Provide graphics such as maps or photos to illustrate geometric features as appropriate. Describe how the existing roadway network compares/contrasts to that documented in the previously approved IJR. A sample description for existing roadway network is provided below.**

The existing roadway network is largely unchanged from the previously approved IJR. Since approval of the previous IJR, a second left-turn lane has been added to the westbound approach at the westbound ramp terminal intersection to accommodate high traffic demand at this movement.

## Existing Alternative Travel Modes

**Provide an update to the existing alternative travel modes from the previously approved IJR. Describe the existing modes of transportation related to the project that are alternatives to passenger cars. These modes may include managed lanes (carpool or tolling lanes), park and ride facilities, bus transit, airports, ports, and forms of non‑motorized transportation facilities. Provide graphics such as maps or photos to illustrate locations of alternative travel modes as appropriate. Describe how the existing alternative travel modes compare/contrast to those documented in the previously approved IJR. A sample summary of existing alternative modes is provided below.**

The existing alternative travel modes are similar to those documented in the previously approved IJR. Since the approval of the previous IJR, the Iowa River Corridor trail has been expanded to travel under I-80 along the Iowa River just east of the 1st Avenue interchange.

## Existing Traffic Volumes

The existing (year 20XX) traffic volumes within the area of influence are provided in **Figure 3‑1**.

**Provide additional details to describe the existing traffic volumes within the area of influence as appropriate. Describe how the existing volumes compare/contrast to those in the previously approved IJR. A table comparing volumes from the previously approved IJR and the IJR Amendment throughout the area of influence may be appropriate.**

**If existing conditions operational analysis results are displayed on a figure that also illustrates existing traffic volumes, it may be appropriate to move materials from this section into the Existing Conditions Operational Analysis section (a separate figure for existing conditions traffic volumes may then not be necessary). If existing traffic volumes details are provided in the Existing Conditions Operational Analysis section, delete this section (including the section heading).**

Figure ‑. Existing Conditions Traffic Volumes

Insert graphic for existing conditions traffic volumes

**Provide a figure that shows existing traffic volumes throughout the area of influence, including daily volumes, peak hour/period movement volumes, weaving volumes and truck percentages as appropriate. It may be necessary to provide this figure as a standalone page depending on the size of the area of influence.**

## Existing Conditions Operational Analysis

Operational analysis was performed for existing (year 20XX) conditions for the state the periods (e.g., AM and PM peak hours) to determine the current operations within the area of influence. The results for existing conditions operational analysis are shown in list tables and figures, with comparison to analysis results from the previously approved IJR. **Duplicate the previous sentence if more than one tool is used for the operational analysis and specify the tool for each series of tables/figures.**

**Provide tables and/or figures to report results of the existing conditions operational analysis as appropriate (show comparison of results for previously approved IJR and the IJR Amendment). An example table and figure is provided below to illustrate example formatting (these examples are not meant to provide a full summary of what should be provided). Provide a summary of the results in paragraphs or bullets to supplement tables and figures, highlighting the overall operations within the area of influence, and noting locations with poor operations or other operational concerns. Describe how the results compare/contrast to those in the previously approved IJR.**

Table ‑. Existing Conditions Freeway Operations

**(Specify software in table title if using more than one software tool)**

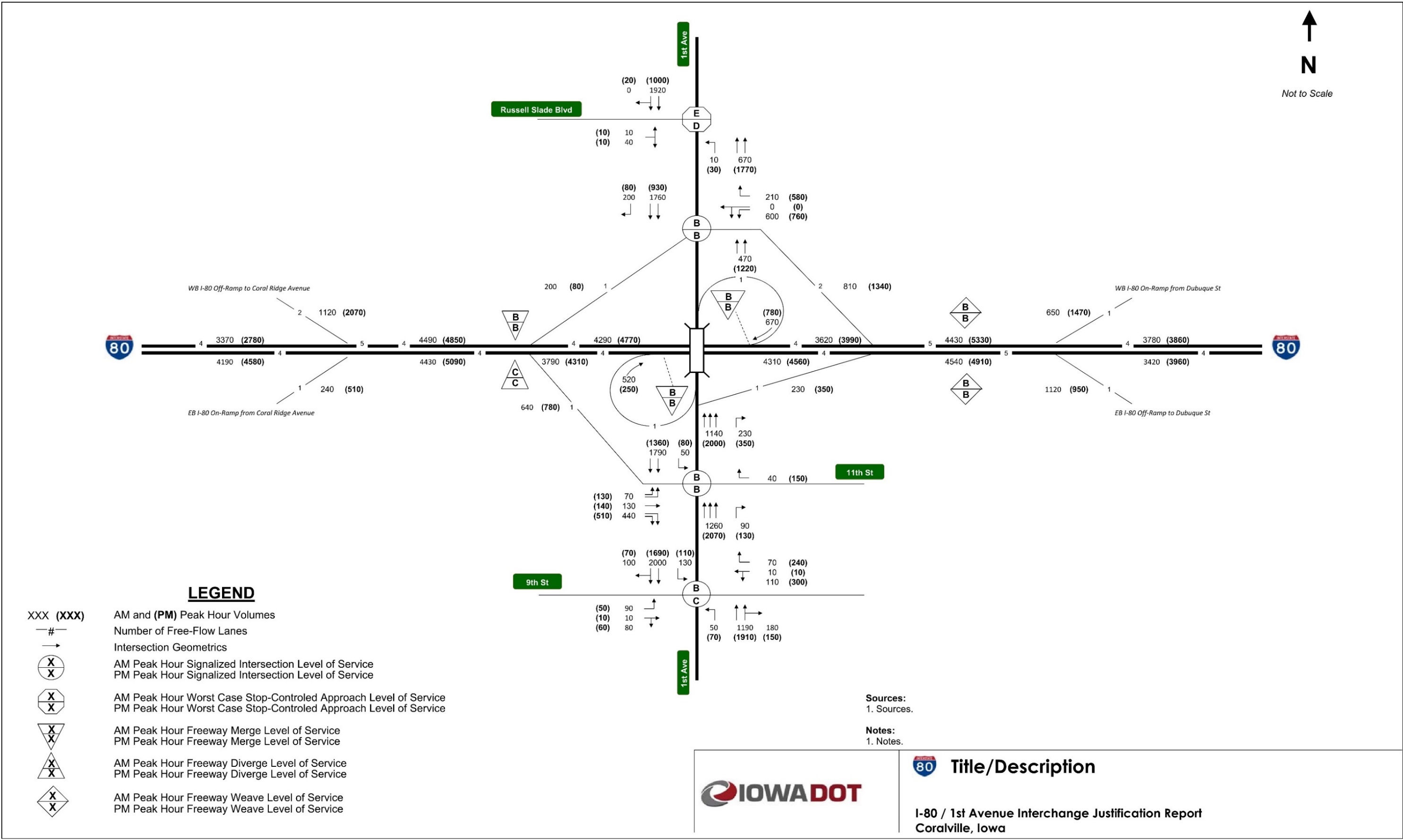
| Location | Segment Type | Density (pc/mi/ln) / LOS | | Previous IJR  Density (pc/mi/ln) / LOS | |
| --- | --- | --- | --- | --- | --- |
| AM Peak Hour | PM Peak Hour | AM Peak Hour | PM Peak Hour |
| I-80 Eastbound | | | | | |
| At Coral Ridge Ave NB Entry | Ramp Junction | 18.6 / B | 20.1 / C | 17.4 / B | 19.3 / B |
| Coral Ridge Ave to 1st Ave | Basic Freeway | 17.0 / B | 18.1 / C | 16.3 / B | 17.7 / B |
| At 1st Ave Exit | Ramp Junction | 23.2 / C | 24.3 / C | 21.8 / C | 23.6 / C |
| 1st Ave Exit to Entry | Basic Freeway | 14.8 / B | 15.2 / B | 14.1 / B | 14.6 / B |
| 1st Ave to Dubuque Street | Weave | 17.5 / B | 18.9 / B | 16.7 / B | 17.4 / B |
| **I-80 Westbound** | | | | | |
| Dubuque Street to 1st Ave | Weave | 12.9 / B | 16.7 / B | 12.3 / B | 15.9 / B |
| 1st Ave Exit to Entry | Basic Freeway | 11.6 / B | 13.5 / B | 11.1 / B | 12.9 / B |
| At 1st Ave Entry | Ramp Junction | 16.5 / B | 18.0 / C | 15.8 / B | 17.2 / B |
| 1st Ave to Coral Ridge Ave | Basic Freeway | 15.9 / B | 17.4 / B | 15.2 / B | 16.6 / B |
| At Coral Ridge Ave Exit | Ramp Junction | 17.9 / B | 25.1 / C | 17.1 / B | 23.9 / C |

Source: HCS 7 Analysis, Agency or Company that conducted the analysis, Date.

**(Remove or modify the table above as appropriate)**

Figure ‑. Existing Conditions Operations

**(Specify software in figure title if using more than one software tool)**



**(Replace or delete the above figure as appropriate)**

## Existing Conditions Crash Analysis

Existing crash analysis was performed to determine current crash trends and/or concerns within the area of influence. Existing crash analysis was performed for Interstate facility mainline segments and intersections within the area of influence. Crashes were analyzed for the five-year period 20XX-20XX, using the crash data obtained from source.

**Provide a summary of overall crashes within the area of influence, noting the number of total crashes and those resulting in injuries or fatalities. Describe how the results compare/contrast to those in the previously approved IJR.**

A summary of mainline segment total crashes and crash rates for the study period compared to those from the previously approved IJR is provided in **Table 3‑2**.

**Provide additional narrative to summarize the comparison of calculated crash rates to statewide averages as appropriate. Describe how the results compare/contrast to those in the previously approved IJR.**

A summary of the manner of crash for mainline segments within the area of influence compared to those from the previously approved IJR is provided in **Table 3‑3**. A summary of the cause of mainline segment crashes within the area of influence compared to those from the previously approved IJR is provided in **Table 3‑4**.

**Provide additional narrative to summarize the manner of crash and cause of crash results as appropriate. Describe how the results compare/contrast to those in the previously approved IJR.**

**Create additional tables and narrative as needed, such as those needed to summarize intersections within the area of influence. Provide a summary of any crashes resulting in a fatality. It may also be appropriate to provide a summary of crashes resulting in serious injury. Provide any additional details regarding the existing crash analysis as it relates to the project goals and objectives.**

Table ‑. Existing Conditions Mainline Segment Crash Rates

| Location | Length (miles) | ADT1 | Number of Crashes (20XX-20XX) | Crashes/  100 MVM2 | Statewide Average Crashes/100 MVM3 | Previous IJR | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Number of Crashes (20XX-20XX) | Crashes/  100 MVM2 |
| I-80 Eastbound | | | | | | | |
| Coral Ridge Ave to 1st Ave | 1.78 | 26,400 | 52 | 60.63 | 100 | 54 | 62.97 |
| 1st Ave Exit to Entry | 0.47 | 21,600 | 12 | 64.77 | 100 | 10 | 53.97 |
| 1st Ave to Dubuque Street | 0.83 | 27,900 | 37 | 87.55 | 100 | 38 | 89.92 |
| **I-80 Westbound** | | | | | | | |
| 1st Ave to Dubuque Street | 0.58 | 28,300 | 37 | **123.52** | 100 | 34 | **113.50** |
| 1st Ave Exit to Entry | 0.47 | 22,000 | 15 | 79.49 | 100 | 11 | 58.29 |
| Coral Ridge Ave to 1st Ave | 1.80 | 26,500 | 68 | 78.11 | 100 | 63 | 73.37 |

Source: Agency or Company that conducted the analysis, based on crash data within the project area of influence from 20XX-20XX provided by source, Date.

1 Year 20XX Annual Daily Traffic, Source, Date.

2 MVM – Million Vehicle Miles. Cells highlighted pink indicate calculated crash rate exceeding the statewide average.

3 Iowa DOT Office of Traffic and Safety, Date, Crash Rates and Crash Densities in Iowa by Road System 20XX-20XX (State the range of years for the averages, such as: 5-year Averages: 2012-2016, and state the category, such as: Municipal Interstate).

**(Modify the table above as appropriate)**

Table ‑. Manner of Crash for Mainline Crashes

| Manner of Crash | Number of Crashes | Previous IJR  Number of Crashes |
| --- | --- | --- |
| Rear-end | 48 | 46 |
| Sideswipe - same direction | 53 | 51 |
| Broadside | 1 | 1 |
| Angle - oncoming left turn | 2 | 1 |
| Head-on | 1 | 1 |
| Not reported | 12 | 11 |
| Non-collision | 99 | 95 |
| Unknown | 5 | 4 |
| **Total Crashes** | **210** | **210** |

Source: Agency or Company that conducted the analysis, based on crash data within the project area of influence from 20XX-20XX provided by source, Date.

**(Modify the table above as appropriate)**

Table ‑. Cause of Crash for Mainline Crashes

| Cause of Crash | Number of Crashes | Previous IJR  Number of Crashes |
| --- | --- | --- |
| Animal | 20 | 18 |
| Operating vehicle in an erratic/reckless/careless/negligent/aggressive manner | 8 | 7 |
| Lost control | 16 | 15 |
| Driving too fast for conditions | 48 | 47 |
| Followed too close | 16 | 17 |
| Swerving/evasive action | 35 | 33 |
| Ran off road – right | 19 | 21 |
| FTYROW: Other (explain in narrative) | 26 | 23 |
| Other (explain in narrative): Other improper action | 17 | 15 |
| Other (explain in narrative): No improper action | 10 | 9 |
| Unknown | 6 | 5 |
| **Total Crashes** | **210** | **210** |

Source: Agency or Company that conducted the analysis, based on crash data within the project area of influence from 20XX-20XX provided by source, Date.

**(Modify the table above as appropriate)**

# Future Year No-Build Conditions

The following future year No-Build conditions reviews/evaluations are updated from the previously approved IJR for this IJR Amendment:

* Adjacent Planned Roadway Improvements.
* Design Year 20XX No-Build Conditions Traffic Forecasts.
* Design Year 20XX No-Build Conditions Operational Analysis.

**For any of the items listed above that are not being updated from the previously approved IJR, delete the item from the list above and delete the corresponding subsection in this chapter. If no items listed above are being updated as part of the IJR Amendment, replace the above highlighted text with a statement similar to, “Evaluation of No-Build conditions is unchanged from the previously approved IJR.”, and delete all subsections and headings in this chapter.**

## Adjacent Planned Roadway Improvements

Description of adjacent planned roadway improvements.

**Provide an update to the adjacent planned roadway improvements from the previously approved IJR. Describe planned roadway and interchange improvements adjacent to the proposed access change that are likely to have an influence on traffic patterns within the area of influence. For these planned improvements, describe the status of these projects. Provide a figure (or figures) to show the locations of planned improvements as appropriate. If there are no adjacent planned roadway improvements, provide a statement similar to: “No roadway improvements are planned adjacent to the proposed access change.” Describe how the adjacent planned roadway improvements compare/contrast to those documented in the previously approved IJR.**

## Design Year 20XX No-Build Conditions Traffic Forecasts

Future year No-Build conditions were evaluated for the project design year 20XX. The design year 20XX No-Build conditions traffic forecasts within the area of influence are provided in **Figure 4‑1**.

**Provide additional details to describe the design year No-Build conditions traffic forecasts within the area of influence as appropriate. Describe how the design year No-Build conditions traffic forecasts compare/contrast to those in the previously approved IJR. A table comparing volumes from the previously approved IJR and the IJR Amendment throughout the area of influence may be appropriate.**

**If design year No-Build conditions operational analysis results are displayed on a figure that also illustrates design year No-Build conditions traffic forecasts, it may be appropriate to move materials from this section into the Design Year No-Build Conditions Operational Analysis section (a separate figure for design year No-Build conditions traffic forecasts may then not be necessary). If design year No-Build conditions traffic forecasts details are provided in the Design Year No-Build Conditions Operational Analysis section, delete this section (including the section heading).**

Figure ‑. Design Year 20XX No-Build Conditions Traffic Forecasts

Insert graphic for future year No-Build conditions traffic forecasts

**Provide a figure that shows design year No-Build conditions traffic forecasts throughout the area of influence, including daily volumes, peak hour/period movement volumes, weaving volumes and truck percentages as appropriate. It may be necessary to provide this figure as a standalone page depending on the size of the area of influence.**

## Design Year 20XX No-Build Conditions Operational Analysis

Operational analysis was performed for design year 20XX No-Build conditions for the state the periods (e.g., AM and PM peak hours) to determine the expected future operations within the area of influence without the proposed access change. The results for design year 20XX No-Build conditions operational analysis are shown in list tables and figures, with comparison to analysis results from the previously approved IJR. **Duplicate the previous sentence if more than one tool is used for the operational analysis and specify the tool for each series of tables/figures.**

**Provide tables and/or figures to report results of the design year No-Build conditions operational analysis as appropriate (show comparison of results for previously approved IJR and the IJR Amendment). Formatting of these tables and figures should match those used to report results for the existing conditions. Provide a summary of the results in paragraphs or bullets to supplement tables and figures, highlighting the overall operations within the area of influence, and noting locations with poor operations or other operational concerns. Describe how the results compare/contrast to those in the previously approved IJR.**

# Problem Definition

Problem definition.

**For IJR Amendments where the problem definition has changed from the previously approved IJR, define the problem being addressed by the proposed access change, with reference to the evaluations of existing and future No-Build conditions provided in this IJR Amendment. State specific goals and objectives to be achieved by the proposed access change. Describe how the problem definition compares/contrasts to that in the previously approved IJR.**

**For IJR Amendments where the problem definition is unchanged from the previously approved IJR, provide a statement similar to, “The problem definition is unchanged from the previously approved IJR.”**

# Alternatives

The following Alternative considerations are updated from the previously approved IJR for this IJR Amendment:

* Reasonable and Feasible Alternatives.
* Build Alternatives.

**For any of the items listed above that are not being updated from the previously approved IJR, delete the item from the list above and delete the corresponding subsection in this chapter. If no items listed above are being updated as part of the IJR Amendment, replace the above highlighted text with a statement similar to, “Alternatives considered are unchanged from the previously approved IJR.”, and delete all subsections and headings in this chapter.**

## Reasonable and Feasible Alternatives

Description of reasonable and feasible alternatives considered.

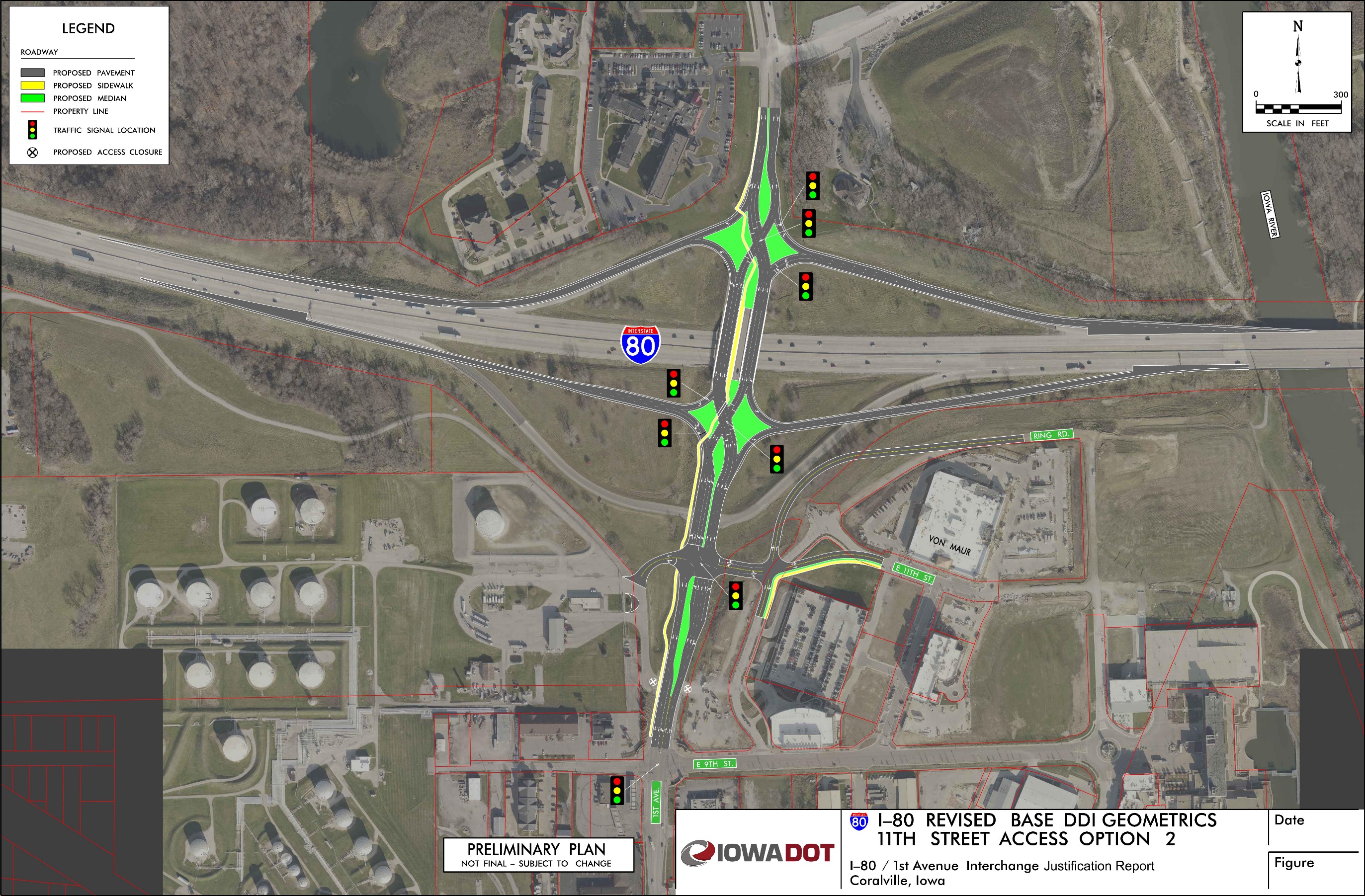
**Provide an update to the reasonable and feasible alternatives considered from the previously approved IJR. Provide a description of reasonable and feasible alternatives to the Build alternatives that were considered to meet the goals and objectives of the project, including** **local system improvements, alternative modal solutions and transportation system management strategies. List any planning documents that include these alternatives. Reference any past studies that evaluated these alternatives. If these alternatives do not meet the goals and objectives of the project or are impractical for consideration, describe why. Describe how the reasonable and feasible alternatives reviewed compare/contrast to those in the previously approved IJR.**

## Build Alternatives

Description of Build alternative(s).

**Provide an update to the Build alternatives considered from the previously approved IJR. Provide details of the Build alternative(s) considered and evaluated in the IJR Amendment. Describe the configurations of the Interstate, crossroad and other transportation elements within the area of influence. Provide figures to illustrate the Build alternatives. An example figure to illustrate the conceptual layout of a Build alternative is provided below. It may be appropriate to provide a separate subsection in the Build Alternatives section for each Build alternative. Describe how the build alternatives compare/contrast to those in the previously approved IJR.**

Figure ‑. Build Alternative Conceptual Layout



**(Replace this example graphic with project conceptual layout graphic)**

# Alternatives Analysis

The following alternatives analyses are updated from the previously approved IJR for this IJR Amendment:

* Design Year 20XX Build Conditions Traffic Forecasts.
* Design Year 20XX Build Conditions Operational Analysis.
* Design Year 20XX Build Conditions Predictive Crash Analysis.
* Alternatives Evaluation Summary and Selection of Preferred Alternative.
* Preferred Alternative and Guide Sign Layout.
* Opening Year 20XX Build Conditions Operational Analysis.
* Interim Year 20XX Build Conditions Operational Analysis.

**For any of the items listed above that are not being updated from the previously approved IJR, delete the item from the list above and delete the corresponding subsection in this chapter. The title for the subsection “Alternatives Evaluation Summary and Selection of Preferred Alternative” may be modified, as instructed in that section. If so, update the bullet above if included in the IJR Amendment.**

## Design Year 20XX Build Conditions Traffic Forecasts

Design year Build conditions traffic forecasts.

**For projects where the design year Build conditions traffic forecasts are the same as the design year No-Build conditions traffic forecasts, provide a statement similar to, “Design year 20XX Build conditions traffic forecasts are the same as those for the No-Build conditions.”, and provide any additional narrative to document why they are the same.**

**For projects where the design year Build conditions traffic forecasts are different from the design year No-Build conditions traffic forecasts, provide comparison of the Build conditions forecasts to No-Build conditions forecasts and existing volumes. The comparison of traffic forecasts should be provided via table(s) and narrative as appropriate. A sample table for comparing traffic forecasts is provided below. Describe how the design year Build conditions traffic forecasts compare/contrast to those in the previously approved IJR. Include the Build forecasts from the previously approved IJR in the comparison table.**

Table ‑. Daily Volume Comparison between Existing and Design Year Conditions

| Location | Daily Traffic Volumes | | | |
| --- | --- | --- | --- | --- |
| Existing | Design Year 20XX No-Build | Design Year 20XX Build | Previous IJR Design Year 20XX Build |
| Interstate mainline location 1 | XX,XXX | XX,XXX | XX,XXX | XX,XXX |
| Interstate mainline location 2 | XX,XXX | XX,XXX | XX,XXX | XX,XXX |
| Interstate mainline location 3 | XX,XXX | XX,XXX | XX,XXX | XX,XXX |
| Interstate mainline location 4 | XX,XXX | XX,XXX | XX,XXX | XX,XXX |
| Crossroad A north of Interstate | XX,XXX | XX,XXX | XX,XXX | XX,XXX |
| Crossroad A south of Interstate | XX,XXX | XX,XXX | XX,XXX | XX,XXX |
| Crossroad B north of Interstate | XX,XXX | XX,XXX | XX,XXX | XX,XXX |
| Crossroad B south of Interstate | XX,XXX | XX,XXX | XX,XXX | XX,XXX |
| Crossroad C north of Interstate | XX,XXX | XX,XXX | XX,XXX | XX,XXX |
| Crossroad C south of Interstate | XX,XXX | XX,XXX | XX,XXX | XX,XXX |

Source: Source, Date.

**For projects where the design year Build conditions traffic forecasts are different from the design year No-Build conditions traffic forecasts, provide a figure to illustrate design year Build conditions traffic forecasts within the area of influence (similar to those provided for the existing volumes and design year No-Build conditions forecasts). Provide additional details to describe the design year Build conditions traffic forecasts within the area of influence as appropriate. It may be necessary to provide multiple figures if multiple Build alternatives were evaluated. If design year Build conditions operational analysis results are displayed on a figure that also illustrates design year Build conditions traffic forecasts, it may be appropriate to move materials from this section into the Design Year Build Conditions Operational Analysis section (a separate figure for design year Build conditions traffic forecasts may then not be necessary). If design year Build conditions traffic forecasts details are provided in the Design Year Build Conditions Operational Analysis section, delete this section (including the section heading).**

## Design Year 20XX Build Conditions Operational Analysis

Operational analysis was performed for design year 20XX Build conditions for the periods (e.g., AM and PM peak hours) to determine the expected future operations within the area of influence with the proposed access change. The results for design year 20XX Build conditions operational analysis are shown in list tables and figures, with comparison to analysis results from the previously approved IJR. **Modify or duplicate the previous sentence to account for projects that include analysis with more than one tool and/or have multiple Build alternatives and specify the tool for each series of tables/figures.**

**Provide tables and/or figures to report results of the design year Build conditions operational analysis as appropriate (show comparison of results for previously approved IJR and the IJR Amendment). Formatting of these tables and figures should match those used to report results for the existing conditions and design year No‑Build conditions. Provide a summary of the results in paragraphs or bullets to supplement tables and figures, highlighting the overall operations within the area of influence, and noting locations with poor operations or other operational concerns. Describe how the results compare/contrast to those in the previously approved IJR.**

## Design Year 20XX Build Conditions Predictive Crash Analysis

Design year 20XX predictive crash analysis was performed to determine the expected change to crashes within the area of influence resulting from the proposed access change. Predictive crash analysis was completed using state the method or tool used. The analysis was performed for state locations within the area of influence (e.g., Interstate mainline segments, ramps and ramp terminal intersections) within the area of influence.

**Provide a summary of the expected change to crashes resulting from the proposed access change. It may be appropriate to provide tables and/or figures to illustrate these results. An example table for reporting the results of predictive crash analysis is provided below. Additional reporting examples are provided in the Iowa DOT Data Driven Safety Guidance document. Describe how the results compare/contrast to those in the previously approved IJR. Include the predicted crash results for the preferred alternative from the previously approved IJR in the comparison table.**

Table ‑: Predictive Crash Alternative Comparison

| Segment ID | Design Year 20XX Predicted Crashes1 | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No Build | | Build Alternative 1 | | Build Alternative 2 | | Previous IJR Preferred Alternative | |
| Total Crashes | Crashes/100 MVM | Total Crashes | Crashes/100 MVM | Total Crashes | Crashes/100 MVM | Total Crashes | Crashes/100 MVM |
| Seg 1 | 10.4 | 88 | 9.6 | 67 | 10.5 | 68 | 10.1 | 70 |
| Seg 2 | 9.3 | 67 | 9.0 | 51 | 9.8 | 50 | 9.2 | 53 |
| Seg 3 | 9.1 | 66 | 8.9 | 52 | 8.8 | 51 | 8.8 | 51 |
| Seg 4 | 8.5 | 70 | 10.9 | 72 | 11.4 | 76 | 11.2 | 74 |
| Seg 5 | 2.9 | 62 | 2.7 | 56 | 3.2 | 50 | 2.6 | 54 |

Source: Tool, Agency or Company that conducted the analysis, Date

1 Green highlighted cells indicate predicted crash frequency or rate for a Build alternative below the predicted frequency/rate for the No Build alternative. Pink highlighted cells indicate predicted crash frequency or rate for a Build alternative above the predicted frequency/rate for the No Build alternative.

## Alternatives Evaluation Summary and Selection of Preferred Alternative

Alternatives evaluation summary and selection of preferred alternative.

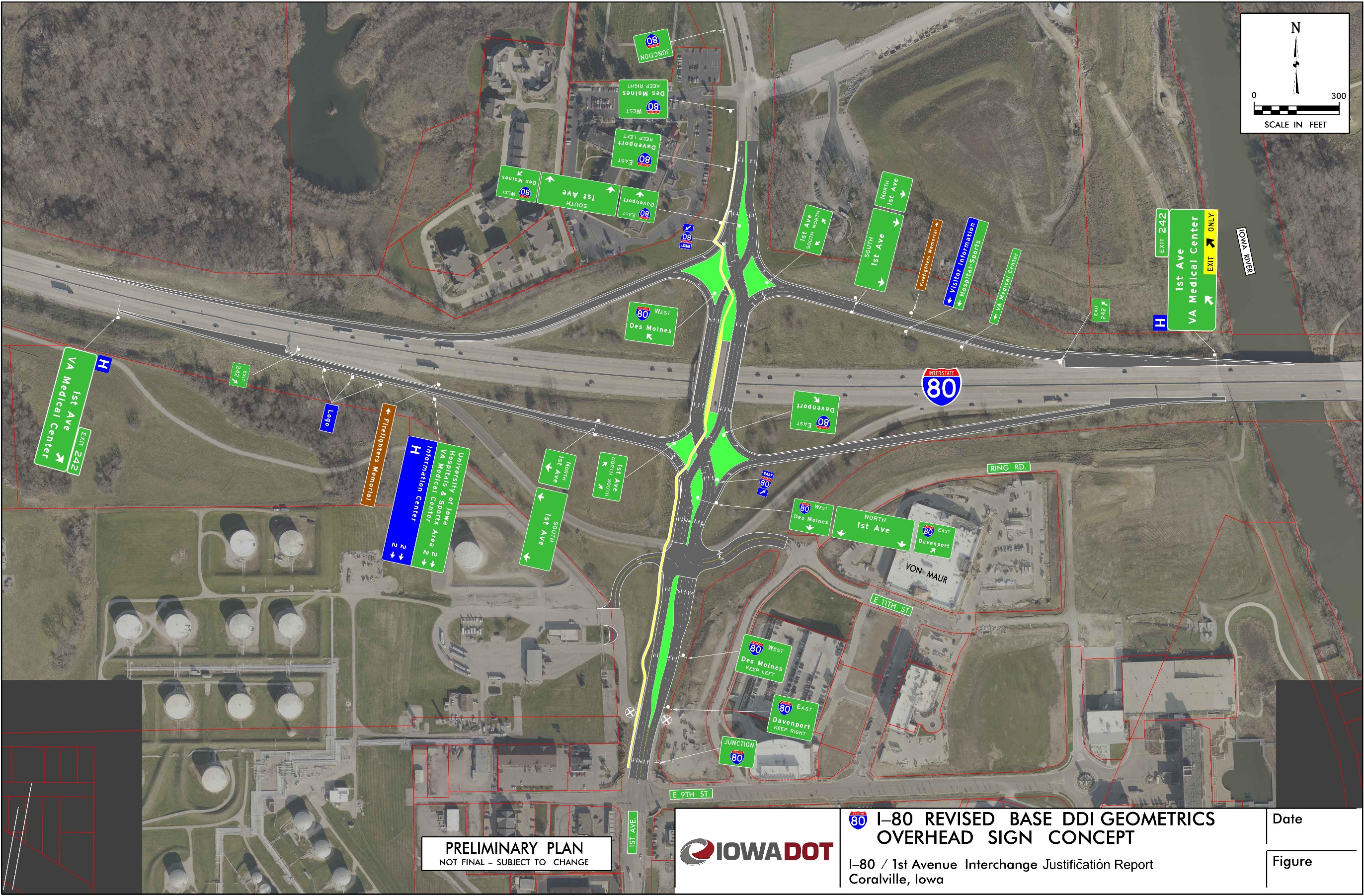
**Provide a summary of the design year Build conditions operations and safety analysis results. Provide any other evaluations completed, including comparison of costs, impacts, constructability, multi-modal accommodations, stakeholder/public support, etc. Describe how these evaluations compare/contrast to those of the preferred alternative in the previously approved IJR. Identify a preferred alternative. If refined conceptual drawings are developed for the preferred alternative, it may be appropriate to provide an additional figure (or series of figures). If only one Build alternative was evaluated, update the section heading to “Alternative Evaluation Summary”.**

## Preferred Alternative Guide Sign Layout

Preferred alternative guide sign layout.

**Provide a guide sign layout for the preferred alternative. An example guide sign layout is provided in the figure below.**

Figure ‑. Preferred Build Alternative Guide Sign Layout



**(Replace this example graphic with project conceptual layout graphic)**

## Opening Year 20XX Build Conditions Operational Analysis

The expected opening year for the proposed access change is year 20XX. Traffic forecasts developed for opening year conditions of the preferred Build alternative are provided in **Figure 7‑2**.

**Provide additional details to describe the opening year Build conditions traffic forecasts within the area of influence as appropriate. If opening year Build conditions operational analysis results are displayed on a figure that also illustrates opening year Build conditions traffic forecasts, it may be appropriate to mention that the forecasts are provided on a figure in conjunction with the opening year Build conditions operational analysis results.**

Figure ‑. Opening Year 20XX Build Conditions Traffic Forecasts

Insert graphic for opening year Build conditions traffic forecasts

**Provide a figure to illustrate opening year Build conditions traffic forecasts within the area of influence (similar to forecast figures used for other scenarios). Delete this figure if opening year Build conditions traffic forecasts are provided on a figure in conjunction with the opening year Build conditions operational analysis results.**

Operational analysis was performed for opening year 20XX Build conditions for the periods (e.g., AM and PM peak hours) to determine the expected operations within the area of influence during the first year of operations with the proposed access change. The results for opening year 20XX Build conditions operational analysis are shown in list tables and figures. **Duplicate the previous sentence if more than one tool is used for the operational analysis and specify the tool for each series of tables/figures.**

**Provide tables and/or figures to report results of the opening year Build conditions operational analysis as appropriate. Formatting of these tables and figures should match those used to report operational results for other scenarios. Provide a summary of the results in paragraphs or bullets to supplement tables and figures, highlighting the overall operations within the area of influence, and noting locations with poor operations or other operational concerns.**

## Interim Year 20XX Build Conditions Operational Analysis

**This section is only applicable for projects that include an interim year evaluation. Evaluation of conditions during an interim year is typically only required for a phased project, where the interchange is planned to operate for a period of time beyond the original phase’s opening year before additional phases of the project are constructed. For projects that do not include interim year evaluation, delete this section (including the section heading).**

Describe interim year conditions.

**Describe the improvements in the first phase(s) of the project that represent the interim conditions. Provide a timeline for phasing of improvements. Provide a figure showing interim year Build conditions traffic forecasts (this may be combined with an operational analysis results figure depending on the format used to display forecasts for other project scenarios).**

**Provide tables and/or figures to report results of the interim year Build conditions operational analysis as appropriate. Formatting of these tables and figures should match those used to report operational results for other scenarios. Provide a summary of the results in paragraphs or bullets to supplement tables and figures, highlighting the overall operations within the area of influence, and noting locations with poor operations or other operational concerns.**

**For projects where multiple interim years/phases were evaluated, provide description and evaluation for each interim year/phase.**

# Social, Economic and Environmental Reviews

The following social, economic and environmental reviews are updated from the previously approved IJR for this IJR Amendment:

* Land Use and Transportation Plan Consistency.
* Coordination for Local System Improvements.

**For any of the items listed above that are not being updated from the previously approved IJR, delete the item from the list above and delete the corresponding subsection in this chapter. If no items listed above are being updated as part of the IJR Amendment, replace the above highlighted text with a statement similar to, “Social, economic and environmental reviews are unchanged from the previously approved IJR.”, and delete all subsections and headings in this chapter.**

**This chapter is only applicable for projects where any of the following are not included in a NEPA or other approved planning study, such as a Location Study:**

* **Land use and transportation plan consistency with the proposed access change.**
* **Coordination for local system improvements to accommodate the proposed access change.**

**Depending on the project, some or all of the items listed above may not be included in a NEPA or other approved planning study, and need to be documented in the IJR. For projects where all of the items listed above are included in a NEPA or other approved planning study, delete this chapter (including subsections and the chapter heading).**

## Land Use and Transportation Plan Consistency

**This section is only applicable for projects where land use and transportation plan consistency with the proposed access change is not discussed in a NEPA or other approved planning study. For projects where this is discussed in a NEPA or other approved planning study, delete this section (including the section heading).**

Land use and transportation plan consistency.

**Provide an update to the land use and transportation plan consistency from the previously approved IJR. List the local and regional planning documents that include the proposed access change, including the Metropolitan Planning Organization (MPO) or Regional Planning Agency (RPA) Long Range Transportation Plan (LRTP), local planning agency Transportation Improvement Program (TIP), and Statewide Transportation Improvement Program (STIP). List any other planned improvements on the Interstate or crossroad within proposed access change and describe how the proposed change is consistent with those planned improvements. Describe how the planning for the proposed access change and other planned improvements compare/contrast to those documented in the previously approved IJR.**

## Coordination for Local System Improvements

**This section is only applicable for projects where coordination for local system improvements to accommodate the proposed access change is not discussed in a NEPA or other approved planning study. For projects where this is discussed in a NEPA or other approved planning study, delete this section (including the section heading).**

Coordination for local system improvements.

**Provide an update to the coordination for local system improvements from the previously approved IJR. Describe any local system improvements that are necessary to accommodate the proposed access change and ensure traffic can be delivered to and from the proposed access. Describe the coordination with public or private entities to identify fiscal responsibilities and gain commitment for constructing local improvements needed to accommodate the proposed access change. Describe how local system improvement needs compare/contrast to those documented in the previously approved IJR.**

# Conclusions and Recommendations

The reviews and evaluations completed for this IJR Amendment are summarized below, including responses to the FHWA Policy on Access to the Interstate System requirements. A final recommendation for the proposed access change is provided based on the evaluations and conclusions documented in this IJR Amendment.

## Conclusions

**Provide a summary of results for traffic forecasts, operational analysis and safety analysis completed for existing, No-Build and Build conditions. Limit the discussion on analysis methodologies only to materials necessary to relate analysis results. Describe how the summaries compare/contrast to those documented in the previously approved IJR. This summary is typically on the order of one to three paragraphs. A sample summary of existing, No-Build and Build conditions is provided below.**

Existing conditions operational analysis show that all study area freeway segments and intersections operate at LOS C or better. Analysis of recent historical crash data concludes that the crash rates for intersections A and B are among the top 200 highest in the state, and have had an average of XX injury crashes per year over the past five years. These results are largely the same as those documented in the previously approved IJR.

Traffic volumes are expected to increase by 50% in the study area by design year 20XX. This is a slight increase over the design year traffic volumes reported in the previously approved IJR, mostly resulting from the design year being ten years later for this IJR Amendment than in the previous IJR. The design-year No-Build conditions are expected to experience operations at or over capacity during the AM and PM hours for the majority of freeway segments and intersections within the area of influence.

The improvements associated with the preferred Build alternative are expected to provide operations of LOS C or better operations within the area of influence for design year 20XX weekday peak period travel conditions. Additionally, the crash prediction analysis concluded that the preferred Build alternative is expected to yield a lower number of crashes for all crash severity than the No‑Build condition. The preferred alternative is expected to provide similar operations and safety than what was documented for the preferred alternative in the previously approved IJR.

The reviews and evaluations completed for this IJR Amendment are further summarized in the following section that reviews the FHWA Policy on Access to the Interstate System and provides responses to the FHWA Policy requirements.

### FHWA Policy Review and Response

The FHWA [Policy on Access to the Interstate System](https://www.fhwa.dot.gov/design/interstate/170522.cfm) includes the requirements for the justification and documentation necessary to substantiate any access change request on the Interstate System that is submitted to the FHWA for approval. FHWA’s decision to approve a request is dependent upon the information developed in support of fulfilling the requirements identified in the Policy.

The current FHWA Policy on Access to the Interstate System (effective May 22, 2017) includes two requirements, which focus on safety, operational and engineering considerations of the access change request. FHWA Policy requirements and responses to those requirements based on the reviews and evaluations completed for this IJR Amendment are provided in the following sections.

#### Operations and Safety (2017 FHWA Policy Requirement 1)

***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 revised ramps, and ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis should, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (Title 23, Code of Federal Regulations (CFR), paragraphs 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, should 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 should 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 should 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)).***

**Sample response and guidance is provided below.**

The traffic operational analyses conducted for the preferred Build alternative concluded that the proposed change in access would not have an adverse impact to operations of the Interstate System. The improvements associated with the preferred Build alternative are expected to provide operations of LOS C or better operations within the area of influence for design year 20XX weekday peak period travel conditions. Additionally, the crash prediction analysis concluded that the preferred Build alternative is expected to yield a lower number of crashes for all crash severity than the No-Build condition. A conceptual signing plan for the preferred Build alternative was completed to illustrate signing needs related to the preferred Build alternative. The criteria for the FHWA Policy Requirement 1 have been addressed through these operational and safety analyses.

* **Provide a summary of the operational analyses for opening year and design year traffic demands with the proposed access change to demonstrate adequate traffic operations on the Interstate System.**
* **Provide a summary of the safety analysis to demonstrate the proposed access change will not have adverse impacts to safety on the Interstate System.**
* **Reference the completed conceptual signing plan for the Interstate System with the proposed access change.**

#### Access Connections and Design (2017 FHWA Policy Requirement 2)

***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, such as managed lanes (e.g., transit or high occupancy vehicle and high occupancy toll 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)). In rare instances where all basic movements are not provided by the proposed design, the report should include a full-interchange option with a comparison of the operational and safety analyses to the partial-interchange option. The report should also include the mitigation proposed to compensate for the missing movements, including wayfinding signage, impacts on local intersections, mitigation of driver expectation leading to wrong-way movements on ramps, etc. The report should describe whether future provision of a full interchange is precluded by the proposed design.***

**Sample response and guidance is provided below.**

The proposed access change will provide full access to and from each roadway (no restricted turning movements). All roadways that are part of the proposed reconfiguration are public roadways. The proposed geometric design of the interchange conforms to current Iowa DOT and AASHTO design standards and policies. The criteria for the FHWA Policy Requirement 2 have been addressed through the review of access and design standards.

* **State if the proposed access change will provide full access to and from each roadway at the interchange (no restricted turning movements) and that the proposed Interstate access is to a public road.**
  + **If full access will not be provided, describe why full access will not be provided and summarize additional improvements needed to accommodate full access or mitigate the missing movements.**
* **State the design standards used for the proposed access change to demonstrate use of sufficient engineering for viability and constructability of the proposed access change.**

## Recommendations

**Provide recommendations for the proposed access change based on the evaluations and conclusions documented in the IJR. Describe how the recommendations compare/contrast to those in the previously approved IJR. A sample recommendation is provided below.**

The recommendations for the proposed access change are unchanged from the previously approved IJR based on the evaluations and conclusions documented in this IJR Amendment. It is recommended to modify the existing diamond interchange on I-80 at XX Street in XXXXX County, Iowa to a diverging diamond interchange, as illustrated in this report. It is recommended to construct the new southbound bridge over I-80 off alignment to minimize the impacts to traffic during construction. The interchange improvements should be closely coordinated with the local agency to ensure improvements needed at adjacent intersections, as identified and documented in this report, are constructed in coordination with the interchange improvements.

# Appendix

List of appendix items.

**Provide a list of items included in the appendix. It may be appropriate to include items in a digital appendix. Typical appendix items include:**

* **Design criteria worksheets**
* **Crash data**
* **Operational analysis output files**
* **M&A document**
* **Previously approved IJR**