

Slide 1 - Opening

- Welcome to the I-57 at US Route 45/52 interchange public involvement presentation. The purpose of this presentation is to introduce the proposed design alternatives for reconstruction of the I-57 at US 45/52 interchange. This presentation should cover most questions you may have, but at the end will direct you where to send any additional comments or questions.

Slide 2- Location and Study Area

- This project addresses a section of I-57 to the north and south of the structure carrying US Route 45/52 over I-57. It also includes a section of US 45/52 from Riverstone Parkway to the north to the Loves travel Stop to the south.

Slide 3 - Purpose and Need

- The need for the proposed project is to improve the safety and mobility of the I-57 and US Route 45/52 interchange. It was initiated as a result of a 2017 bridge condition report and a 2007 feasibility study. The structure carrying US Route 45/52 over I-57 was initially constructed in 1962 and the current structural deficiencies require attention. In 2018 a geometric review of the interchange was conducted and found that the existing interchange does not meet current design standards. The 2007 feasibility study determined in order to meet the safety and mobility needs of the corridor that a future expansion of I-57 from a 4 lane to a 6-lane facility will be needed in the future.

Slides 4-5 - Timeline

- Currently, we are in the Preliminary Engineering Study phase and this phase is expected to be completed in the Summer/Fall of 2022. This phase considers multiple alignments and designs of the interchange. The improvements are then evaluated on their ability to improve the safety and mobility of the region as well as their environmental, residential, and commercial impacts. After consideration of feedback from the public, an alternative may be further developed in Phase I. Phase I will include the preliminary design plans for the selected and preferred alternative. Following completion of Phase I, Phase II will include the detailed project Design and will take approximately 2 years to complete. Phase II will include land acquisition and contract plan preparation. The final phase is the physical construction of the project based on the final design plans.

Slides 6-7 - Existing Conditions

- The current I-57 facility includes 2 northbound lanes and 2 southbound lanes separated by a depressed median and cable barrier. The four lanes are spanned by the US Route 45/52 structure carrying the 4-lane roadway. The interchange of I-57 and US Route 45/52 is currently a 2-quadrant partial cloverleaf type interchange. In the 2-quadrant design, only the northwest and southeast quadrants have ramps for those entering and exiting I-57 and US Route 45/52.

Slide 8 - ADT

- The map for Average daily traffic depicts the current traffic volumes on I-57, the entrance and exit ramps of the interchange, and US Route 45/52. Shown in red text is the projected 2045 traffic volumes for those same locations.

Slides 9-12 - Crash Analysis

- **Slide 9** - A history of crash data was analyzed from years 2015 to 2019 within the project limits. Each slide shows a segment of the project, notes the number and type of crashes as well as the injury type. There are 5 Injury Crash Types, Fatality, Type A, Type B, Type C and Property Damage Only. A crash is considered fatal if at least one person involved dies from their injuries within 30 days of the crash. Type A injuries are serious injuries. Type B injuries are minor injuries, and Type C injuries are any injury reported but not evident. Twenty percent of the crashes that occurred within the study time frame resulted in injury. Sixty-two percent of the total crashes from 2015 to 2019 were either fixed object, sideswipe, or rear end crashes. Rear end crashes are potentially occurring on both I-57 and US 45/52 due to vehicles making abrupt changes in speeds to enter or exit the ramp terminals and the interchange area. Sideswipe crashes are likely occurring when vehicles are entering the I-57 mainline lanes in a short distance and are unable to find an appropriate gap in the traffic to pull out into the mainline lanes.
- **Slide 9** - On interstate 57, a total of 334 crashes occurred from 2015 to 2019. Two of them were fatal crashes, 16 Type A crashes, 41 Type B crashes, 6 Type C crashes, and 269 crashes resulted in property damage only. The predominant crash type on I-57 is Fixed Object at 39% of the total crashes.
- **Slide 10** - On the interchange ramps, a total of 19 crashes occurred between 2015 and 2019. These crashes included 2 Type A injury crashes, and 2 Type B injury crashes. There were no fatalities reported on the interchange ramps from 2015 to 2019, and the predominant crash types are fixed object at 32% and overturning at 26%.
- **Slide 11** - On US Route 45/52 93 crashes occurred from 2015 to 2019, and 2 of them were fatal crashes. The 93 crashes also included 8 type A injury crashes, 7 Type B injury crashes, and 8 Type C injury crashes. 68 of the 93 total crashes were property damage only.
- **Slide 12** - On US Route 45/52 at Riverstone Parkway, the intersection has been designated as a Critical Safety Tier, where 44 crashes occurred from 2015 to 2019. These crashes included 5 Type A injury crashes, 5 Type B injury crashes, and 4 Type C injury crashes. Of those crashes, there were 27 individual injuries reported. The predominant crash type on US Route 45/52 and at the intersection with Riverstone Parkway are turning and rear end crashes.

Slides 13-15 - Alternatives

- **Slide 13** - Three alternatives were presented to IDOT in an Interchange Type Study (ITS) this past summer. The ITS included advantages and disadvantages of each proposed alternative, gave them a ranking, and helped in deciding a preliminary preferred alternative.
- **Slide 13** - The first alternative developed is a conventional diamond type interchange. Some advantages to the conventional diamond alternative include reduced driver confusion due to the common design of this type of interchange, higher operating speeds, and increased sight distance. The disadvantages of this alternative include a greater number of traffic signals

compared to alternative 3, additional right of way would need to be acquired with potential impacts to commercial businesses, and a significant impact to the detention pond found in the northeast quadrant.

- **Slide 14** - The second alternative is a compressed diamond interchange. A compressed diamond is similar to a conventional diamond, except the ramps are closer to the US 45/52 structure and I-57, thus requiring a smaller footprint. The advantages of a compressed diamond mirror those of the conventional diamond with the added benefit of less right of way acquisition, considerably less impact to the detention pond, and could cost less than the conventional diamond interchange. Some disadvantages of this alternative include the greater number of traffic signals compared to the 3rd alternative, turn lane development and storage can be challenging, and more extensive access control along the crossroad may be necessary.
- **Slide 15** - The third alternative is the single point urban interchange. A Single Point urban interchange (SPUI) is less conventional and uniquely converges all through and left turning movements into a centralized location. Some advantages of this alternative include the utilization of a single intersection versus two intersections required by the other alternatives, less right of way required compared to the conventional diamond interchange, and it provides the opportunity for higher speed operations. The disadvantages of the SPUI include a longer amount of time needed to serve all of the traffic movements at the centralized interchange, pedestrian accommodations are difficult to include, a significantly larger structure is required and therefore higher cost, and additional right of way is required including impacts to the existing detention pond.

Slide 16 - Proposed Improvements

- The proposed improvements on I-57 include a 4-lane facility with wide shoulders and a closed median with barrier wall between the northbound and southbound traffic lanes. This facility will be planned so that in the future a 5th and 6th lane can be added when needed. The interchange will also be designed to incorporate these future additional lanes.
- Improvements on US Route 45/52, including the structure carrying the route over I-57, will include reconstruction of the highway on a shifted alignment parallel to the existing alignment. The new structure will be designed to span a future 6 lane interstate. The modified alignment will provide 2 intersections, one to the north and one to the south of the structure, and tie into the existing alignment to the north and south of the proposed interchanges. US Route 45/52 will remain a 4-lane facility with turn lanes provided to access the I-57 entrance ramps, as well as turn lanes to access the side roads when appropriate.
- The US 45/52 intersection with Riverstone Parkway will be analyzed and improved as needed.

Slides 17-25 - Preferred alternative

- **Slides 17, & 18** – A comparison matrix was used to determine the preferred alternative. This matrix compares costs, traffic capacity, geometrics, safety, and accessibility of the alternatives. It shows that Alternative 2 provides the highest rank and is therefore the preferred alternative.
- **Slide 19** - The recommended alternative at this stage is Alternative 2, the compressed diamond interchange. The compressed diamond interchange can improve structure adequacy, ramp geometrics, accessibility, and reduce costs. This alternative also has reduced impacts to right of way and the existing adjacent detention pond when compared to the other alternatives.

- **Slides 20, 21, & 22** - The next several slides show the current lane configurations on I-57, US Route 45/52 and the ramps at the interchange.
- **Slides 23, 24, & 25** - These slides now show the proposed lane configurations on I-57, US Route 45/52 and the ramps at the interchange. Please note that on I-57 there are two sections, the first depicts what the proposed construction will be, while the second section shows the Future 6-lane typical section. The intent is to construct a new 4-lane section but design for future growth along this corridor.

Slide 26 - Level of Service

- The level of service illustrations shows the performance measure used to compare potential changes in a roadway system. The LOS is assigned based on the traffic flow and delay and uses criteria with “A” being the best and “F” being the worst. The map on the left depicts the level of service of the existing conditions at or near the interchange. They are consistently a LOS A or B. In the middle map, the future 2045 projected traffic, no build conditions show that the level of service remain the same with expected LOS of A or B. The 2045 proposed conditions level of service based on the proposed alternative, the compressed diamond, consistently remains at level of service A or B. This means that the preferred design of the interchange should not alter the traffic flow or delay in the project area.

Slide 27 - Project Contact and Forms

To view project information and provide comments please visit the project website at <https://idot.illinois.gov/projects/i-57-at-us-45-52-interchange.html>

Slide 28 - Closing

- Comments and concerns can be added to the comment form and mailed or emailed back to Jacob Oyier of IDOT at Jacob.Oyier@illinois.gov. Additional contact information can be found on the comment form.