



SECTION 3: PRIORITIZATION OF PROPOSED IMPROVEMENTS

To prioritize the proposed improvements, a matrix was developed to score projects and to determine in which order they should be completed. Proposed improvements were evaluated based on how well each improvement met the goals of UDOT. UDOT's *final four* was used as the basis for evaluation criteria. These criteria were prioritized by level of importance, which was based on a scale of zero to five: zero having small importance and five having great importance. The following is a list of the final four and the level of importance score assigned for each category:

- ♦ Take Care of What We Have: 4
- ♦ Make the System Work Better: 3
- ♦ Improve Safety: 5
- ♦ Increase Capacity: 4

A value was then assigned to each proposed improvement based on its ability to achieve the evaluation criteria. These values were determined based on time (i.e., when is the improvement needed), the improvement's level of importance, or the improvement's level of effectiveness in meeting the criteria.

The time-based scoring system evaluated capacity and pavement; the values were given based on when the roadway would no longer meet capacity needs and when the pavement would need to be replaced. If the replacement was needed in the next two years, a value of five was assigned. This time-based scoring system analyzed each improvement in relation to the *increase capacity* and *take care of what we have* criteria. These time-based values can be seen in Table 3-1.

The importance-based values prioritized improvements by evaluating which were critical for geometric corrections or for safety. This system helped to evaluate each improvement in relation to the *take care of what we have* criterion. These importance-based values can be seen in Table 3-2.

The effectiveness-based values were determined by evaluating an improvement's effect on accident clusters. If the proposed improvement corrected a geometric deficiency at an accident cluster location, then the improvement was given a value of five. This system helped to evaluate each improvement in relation to the *improve safety* and *make the system work better* criteria. These effectiveness-based values can be seen in Tables 3-3 and 3-4.



Table 3-1: Time-Based Values

Take Care Of What We Have And Increase Capacity		
From	To	Value
2008	2010	5
2011	2013	4.5
2014	2016	4
2017	2020	3.5
2021	2025	3
2026	2030	2.5
2031	2035	2
2036	2040	1.5

Table 3-2: Importance-Based Values

Take Care of What We Have	
Value	Description
5	Maintenance of Project Is Critical
4	Maintenance of Project Is Important
3	Maintenance of Project Is Average
2	Maintenance of Project Is Helpful
1	Maintenance of Project Is Minor
0	Project Does Not Address Any Maintenance Concern

Table 3-3: Effectiveness-Based Values

Make the System Work Better	
Value	Description
5	Critical System Needs (Structural Maintenance)
4	Important System Needs (Vertical Clearance)
3	Average System Needs (Improve Ramp Acceleration and Deceleration Lengths)
2	Helpful System Needs (Climbing Lanes, Chain-up Area)
1	Minor System Needs
0	Project Does Not Address Any System Concerns

Table 3-4: Effectiveness-Based Values

Improve Safety	
Value	Description
5	Documented Geometric Deficiency Associated with an Accident Cluster
4	Roadside Deficiencies with Safety Index Score of Four or Greater
3	Roadside Deficiencies with Safety Index Score of Three or Less
2	Low Level of Safety Concern Such As Deer Traffic Areas
1	Minimal Safety Concerns
0	Project Does Not Address Any Safety Concerns

Once values were assigned to each proposed improvement, the improvement was then given a total score. This score was calculated for each improvement by first multiplying the evaluation criteria’s level of importance score with the improvement’s time-based, importance-based, and effectiveness-based values; this resulted in a subtotal for each evaluation criteria. The improvement’s subtotals for each evaluation criteria were then added together, which resulted in a total score. Figure 3-1 shows the values assigned for each proposed improvement and their total score.



Once total scores had been calculated, all improvements were sorted by their recommended completion years and put into three phases, which correlate with the Long Range Transportation Plan (LRTP). If the recommended completion year occurred between 2010 to 2015, the improvement was placed into Phase I. If the recommended completion year occurred between 2016 to 2025, the improvement was placed into Phase II. If the recommended completion year occurred between 2026 to 2040, the improvement was placed into Phase III. After the improvements had been sorted into the three phases, they were then sorted by their total scores from high to low. Those with the highest scores are considered the highest priority improvements for the corridor.

Once these improvements were organized into the three phases and sorted by total score, it was evident that each phase addressed a different aspect of the corridor's needs. Phase I projects are mostly in the rural area from MP 19 to 42. These projects consist of fixing geometrics (especially those related to crash clusters), providing pavement rehabilitation, fixing guardrails, improving clear zones, providing structural maintenance, extending ramp acceleration and deceleration lengths, constructing passing lanes, and providing preliminary design for Phase II capacity projects. Phase II projects are capacity improvement projects in the urban area from Bloomington to Hurricane (MP 4 to 16). The Phase II projects also include realigning the NB on-ramp and providing a chain-up area at the Browse interchange (MP 30). Phase III projects are scattered over the corridor with the most notable being capacity improvements from the stateline to Bloomington (MP 0 to 4).

Figure 3-2 shows the prioritized project matrix. This matrix includes the projects in order according to their ranking. The five projects highlighted in yellow at the top of the matrix are projects in the corridor that are already funded. The total score for each of these projects shows that these projects should be completed in the next five years. The figure also lists the recommended construction year and environmental/design year for the proposed improvement. The environmental or design year notes what year the environmental or design process will need to start so that the actual construction of the project is not delayed.

Project costs have been included for a present 2008 cost and for a future construction-year cost. Future construction-year costs were determined by adding seven percent per year to the 2008 cost. Completing Phase I, Phase II, and Phase III projects at one time should be considered to save overall costs due to inflation (the \$364,791,000 present 2008 cost versus the \$928,908,000 construction-year cost). Also, completing these projects within a few years of construction, as opposed to several years of construction, would minimize impacts to the traveling public.

Figure 3-2 includes information regarding potential impacts to environmental recourses or environmentally sensitive sites.

