

11.0 **ALTERNATIVES COMPARISON**

11.1 **Cost Summary**

A general cost estimate is provided for preliminary planning purposes. The total estimated conceptual construction cost is a sum of the costs associated with roadway improvements, right-of-way acquisition, new bridge structure, retaining walls traffic control and utility impacts. The cost estimate will vary depending on conceptual solutions for each alternative between Riverview Avenue and SR 110. Preliminary cost estimates indicate a cost of approximately \$15 million for the Industrial Drive Alternative and \$19 million for the Enterprise Avenue Alternative, as presented in *Appendix E*.

11.2 **Constructability**

Constructability, sometimes referred to synonymously as Buildability, refers to the extent to which the design of a facility provides for ease of construction yet meets the overall requirements of that facility.

Aspects of constructability that should be considered include complexities that could negatively affect the duration of construction, traffic maintenance and possible complicated construction methods. Methods/activities which reduce project complexity related to construction of the project are what is sought in terms of the following:

- Construction methods required
- Maintenance of traffic (MOT)
- Construction materials including availability
- Access to construction site
- Weather concerns during time project will be constructed
- Environmental issues and permitting
- Utility relocation
- Right-of-way acquisition
- Project phasing
- Geotechnical constraints
- Foundation construction in channel
- Land use

A review of the Industrial Drive and Enterprise Avenue alternatives found no unusual constructability issues related to either alternative when compared against the above constructability criteria. The major constructability issue will be constructing the bridge pier foundations in the Maumee River. However, due to the relatively shallow depth of the river at the location of both alternatives (typically less than ten feet), standard construction methods can be employed by qualified contractors which will control costs by allowing for a better competitive environment when the project is bid.

11.3 **Alternatives Evaluation Matrix**

An updated Alternatives Evaluation Matrix (see *Table 11.1*) was developed to provide a comparison between the three alternatives in regards to how each one satisfied the Purpose and Need Elements; the Environmental Elements; Community Elements, project costs and constructability. These various elements are listed in the table along with a general assessment of how each alternative satisfies or impacts each individual element. A summary of the factors which caused an alternative to be eliminated or to be recommended for further study follows.

Purpose and Need Elements – The No-Build alternative provided no benefits when measured against the P & N Elements. On the other hand, the Industrial Drive alternative best met the P & N Elements over the Enterprise Avenue alternative.

Environmental Elements – The No-Build alternative had, of course, no impacts to any Environmental Elements, whereas, the Industrial Drive alternative had less significant impacts as compared to the Enterprise Avenue alternative. Probably the most significant difference between the two Build alternatives is the impact to the 100 year floodplain by the Enterprise Avenue alternative.

Community Elements – The No-Build alternative has negative community impacts in that safety and traffic congestion are not addressed. The Industrial Drive alternative provides increased safety and congestion reduction while also providing the most direct access to the Industrial Drive/US 6&24 interchange. The Enterprise Avenue alternative also provides access to the interchange but via a more circuitous and longer route. Both Build alternatives provide direct access to the industrial sites and undeveloped land south of the river.

Construction Elements – The No-Build alternative has no cost or constructability issues. Both the Build alternatives have only moderate constructability issues due to the need to construct the bridge from river barges. However, due to the significant project length differences and electric power transmission relocation over the Maumee River required by the Enterprise Avenue alternative, the construction cost estimate for the Industrial Drive alternative comes in considerably less than the Enterprise Avenue alternative (\$15 million versus \$19 million).


Based upon the Alternatives Comparisons Analysis as summarized above, **it is concluded that the Industrial Drive alternative provides the best overall option** as it was found to be superior over the Enterprise Avenue Build alternative in all categories and the No-Build alternative does not meet the Purpose & Need for the project.


Table 11.1 Alternatives Evaluation Matrix

Evaluation Criteria		No-Build Alternative	Build Alternative - Industrial Drive River Crossing Corridor	Build Alternative - Enterprise Avenue (Road 12) River Crossing Corridor	Comments
Purpose and Need Elements	Improve Traffic Operations on SR108 Bridge & Corridor	No Benefit – Traffic on existing bridge is currently at LOS D, and is projected to be borderline LOS D/E in 2035 if no other river crossing is constructed nearby.	Substantial Benefit – This location provides most draw of traffic from the existing SR108 bridge. Improves existing bridge to LOS C in 2015 and reduces delays in 2035. Industrial Drive bridge operates at LOS C through design year 2035.	Some Benefit – This location draws some traffic from the existing SR108 bridge, but not as much as Industrial Drive. Enterprise Avenue (Road 12) operates at LOS C through design year 2035.	No-Build does not satisfy P&N Element; Industrial Drive satisfies P&N Element the best of the two build alternatives as it draws most traffic from existing bridge.
	Improve Safety by Decreasing Crashes on the Corridor	No Benefit – The No-Build would not reduce traffic and congestion on existing corridors.	Substantial Benefit – Draws most truck and vehicular traffic off existing bridge and corridors leading to the bridge, which will reduce crash frequency due to lower traffic & congestion.	Some Benefit – Draws some traffic from existing bridge and corridors leading to bridge, but not as much as Industrial Drive location. Also requires traffic to negotiate on local roads since no direct access to US 6/US 24 interchange like Industrial Drive Corridor.	No-Build does not satisfy P&N Element; Industrial Drive satisfies P&N Element the best, as it reduces traffic the most on existing corridors which will reduce crash frequencies and enhance safety.
	Improve Access to Future and Planned Development on Both Sides of Maumee River	No Benefit – The No-Build does not provide a link between Future and Planned Development Areas on both sides of the river.	Substantial Benefit – This is the most direct connection between SR 110 south of the river and industrial developments on both sides of Industrial Drive, which also connects to interchange.	Substantial Benefit – Connects industrial developments on both sides of the river. However, this location is not as a direct link as Industrial Drive location.	No-Build does not satisfy P&N Element; Both Industrial Drive and Enterprise Avenue provide substantial benefit
	Consistency with Local Comprehensive Plans	No Consistency – The No-Build does not satisfy local Comprehensive Plans as it does not provide a new river crossing to connect development areas.	Substantial Consistency – This is the preferred location per local plans and government officials as it provides the most benefit as it provides most direct connection between future development areas on both sides of the river and the US 6/24 interchange	Some Consistency – This location does provide a new river crossing as cited in the Comprehensive Plan, however it does not provide best connection to developed areas and does not provide direct link to the US 6/24 interchange like the Industrial Drive corridor does.	No-Build does not satisfy P&N Element; Industrial Drive is the actual recommended location in the local Comprehensive Plan.
Environmental Elements	Cultural Resources	No Impacts – Since this is No-Build Option.	Potential Impacts – Further field studies needed to determine presence of archaeological sites and evaluate project impacts.	Potential Impacts – Further field studies needed to determine presence of archaeological sites and evaluate project impacts.	No impacts from No-Build; Potential impacts from both of the build alternatives.
	Parks/4(f)	No Impacts – Since this is No-Build Option.	Potential Impacts – Project could impact the Buckeye Trail.	Likely Impacts – Project likely impacts a public park found on northern banks of river that could be 4(f), as well as Buckeye Trail.	No impacts from No-Build; Potential impacts from both of the build alternatives.
	Farmland Impacts	No Impacts – Since this is No-Build Option.	Likely Impacts – Farmland on south side of river likely impacted.	Likely Impacts – Farmland on south side of river likely impacted.	No impacts from No-Build; Potential impacts from both of the build alternatives.
	FEMA 100-year Flood Plain	No Impacts – Since this is No-Build Option.	Potential Impacts – Project could impact the 100-Yr. Flood Plain, however bridge span may allow avoidance of impacts.	Likely Impacts – Project likely impacts the 100-Yr. Flood Plain as there is unavoidable area on south side of the river.	No impacts from No-Build; Potential impacts from both of the build alternatives.
	Endangered & Threatened Species	No Impacts – Since this is No-Build Option.	Potential Impacts – There are potential threatened/endangered mussels in river and possible Indiana Bat habitat. Mussel survey would be needed to determine if present & relocations required.	Potential Impacts – There are potential threatened/endangered mussels in river and possible Indiana Bat habitat. Mussel survey would be needed to determine if present & if so, relocations required.	No impacts from No-Build; Potential impacts from both of the build alternatives.
	Ecological Resources	No Impacts – Since this is No-Build Option.	Likely Impacts – Any alignment in the corridor would involve in-stream work that would require a Section 404 permit from USACE, a Section 401 Water Quality Certification from Ohio EPA, and Scenic River coordination with ODNR. Two small wetlands also found within the corridor that may be impacted.	Likely Impacts – Any alignment in the corridor would involve in-stream work that would require a Section 404 permit from USACE, a Section 401 Water Quality Certification from Ohio EPA, and Scenic River coordination with ODNR. A potential regulated ditch is also found within the corridor along the western side of the corridor.	No impacts from No-Build; Likely impacts from both build alternatives given the scope of the project involving in-stream work and new bridge construction.
Environmental Site Assessments	No Impacts – Since this is No-Build Option.	Potential Impacts – There are two small potential ESA sites (#6 & #8) located between the former Miami-Erie Canal and the River.	Potential Impacts – There is a large potential ESA site (#11) within the corridor associated with the Campbell's Soup facility.	No impacts from No-Build; Potential impacts from both of the build alternatives.	
Community Elements	Connectivity to Highway System	No Improvement – The No-Build does not enhance highway connections.	Substantial Benefit – Provides direct connection to the US 6/24 interchange via Industrial Drive Corridor.	Some Benefit – Provides some benefit in connectivity, however there is no direct access to US 6/24 as Executive Avenue does not have interchange and several local roads would be used to access US 6/24.	No-Build provides no improvement while the Industrial Drive Corridor provides a substantial benefit given the direct connection to the US 6/24 interchange.
	Reduce Downtown Traffic Congestion & Enhance Safety	Negative Impact – The No-Build does nothing to reduce congestion and enhance safety, and no action will actually degrade conditions further in future.	Substantial Benefit – Provides largest capture of truck and vehicular traffic from the existing SR 108 Bridge and improves existing bridge LOS on Opening Day to a LOS C.	Some Benefit – Provides some benefit in capturing traffic from the existing SR 108 Bridge; however the lack of direct access to US 6/24 does not allow for as much of captured traffic as Industrial Drive.	No-Build provides negative impact as no action will actually degrade as traffic grows; Industrial Drive provides substantial benefit in reducing delays/traffic.
	Enhance Emergency Response and Hospital Access	No Improvement – The No-Build does not enhance emergency response and hospital access.	Some Benefit – Provides some benefit to enhancing emergency responses and hospital access, especially if existing bridge blocked.	Some Benefit – Provides some benefit to enhancing emergency responses and hospital access, especially if existing bridge blocked.	No-Build provides no improvement; both build alternatives provide some benefit.
	Right-of-Way and Property Impacts	No Impacts – The No-Build does not impact properties as no Right-of-Way is needed.	Likely Impacts – Corridor is new facility, and will require property acquisition. This alternative may require a total take of a residential parcel, however property owner has indicated desire to sell.	Likely Impacts – Corridor is new facility, and will require property acquisition.	No impact from No-Build; Impacts to properties will occur as roadway is a new facility on new alignment.
	Economic Development Benefits	Negative Impacts – The No-Build does not enhance highway connections.	Substantial Benefit – Provides direct link of south side of river at SR 110 northward to the US 6/24 interchange and corridors. This provides maximum transportation benefit for Campbell's Soup facility and other existing industrial sites and future development areas.	Some Benefit – Provides connection of developed areas on south side of river to those on north side of river. This alternative however does not have direct link to the US 6/24 interchange and corridors.	No-Build will lead to higher transportation costs to businesses and public as traffic congestion increases. Industrial Drive would provide substantial benefit given direct link to US 6/24 interchange and traffic reductions.
Construction	Costs	No Costs for this is a No-Build Option	\$15.0 Million	\$19.4 Million	Enterprise Avenue alternative is considerably higher cost than Industrial Drive alternative due to a significantly longer project length and a substantial cost to relocate an existing electric transmission line over the Maumee River.
	Constructability	No Constructability Issues as this is a No-Build Option	Moderate Constructability Issues – Maumee River is typically less than 10' deep at this location; minor utility impacts; barges will be required to construct bridge; borrow for embankments close to site; no fill required in river; well established bridge & road construction methods required; MOT will require one-way traffic maintenance	Moderate Constructability Issues – Maumee River is typically less than 10' deep at this location; major power utility relocation over river; barges will be required to construct bridge; borrow for embankments close to site; no fill required in river; well established bridge & road construction methods required; MOT will require one-way traffic maintenance	Enterprise Avenue Alternative somewhat more complex to build due to longer bridge and major power utility relocation over river required.

Legend

 Provides Substantial Benefit Relative to Purpose and Need and/or Will Not Negatively Impact Environmental Resource

 Provides Some Benefit Relative to Purpose and Need and/or Has Potential to Negatively Impact Environmental Resource

 Provides No Benefit Relative to Purpose and Need and/or Will Likely Negative Impact to Environmental Resource

12.0 **RECOMMENDED PREFERRED ALTERNATIVE**

12.1 **Conclusion**

In summary, the *Final Planning Study Report* that was approved by ODOT on May 10, 2010 made recommendations that two of the four build alternatives be considered for more detailed analyses along with the No-Build. Upon the conclusion of this document, the project was placed on hold as there was no committed funding to move to Step 5 of the former 14-Step PDP for a Major Project. Several attempts were made to secure funding from TRAC, but no funding was secured given the economic crisis that occurred in 2008-2009 which fiscally constrained many government agency budgets.

In 2012 the Henry County Transportation Improvement District (TID) was formed to pursue critical transportation projects in Henry County. By the middle of 2012, the Henry County TID contracted a consultant to begin moving the Henry County New Maumee River Bridge project (HEN-New Maumee River Bridge PID 22984) forward and to take advantage of streamlined ODOT's PDP process. This Feasibility Study is the first step to transitioning this project into the new ODOT PDP.

12.2 **Identification of Preliminary Preferred Alternative**

Using updated environmental screenings, traffic/crash analyses, and the matrix comparison of the alternatives the following build alternative corridor is recommended as the Preferred Alternative for the project:

Recommended Preferred Alternative:

Industrial Drive Corridor – This alternative proposes a new river crossing by extending Industrial Drive southward across the Maumee River to connect with SR 110 on the south side of the river.

Summary of Basis for Selection of Preferred Alternative:

Based on the updated traffic/crash data findings; updated environmental screenings and field visits; and strong support for this conceptual build alternative from the public meeting held on February 24, 2004, the Industrial Drive Corridor is recommended as the Preferred Alternative based on the following key items:

- Meets the Purpose & Need elements.
- Provides a direct link to the US 6/US 24 facility via use of the Industrial Drive interchange.
- The Industrial Drive crossing is predicted to capture 56 percent more traffic than the Enterprise Avenue (Road 12) alternative.
- Traffic analysis of roadway network conditions, capacity analyses, and crash data demonstrates the alternative results in the highest reduction of traffic on the SR 108 bridge and adjacent corridors. This will reduce delays and reduce crash frequencies, and improve operations.
- The Industrial Drive Alternative is listed in the Henry County Comprehensive Plan as the preferred location and it is also listed in the City of Napoleon's Comprehensive Plan.
- Comments from the public meeting held on February 24, 2004 indicated that 93 percent believed a second river crossing was needed, and of the build corridor alternatives presented, the Industrial Drive corridor received 56 percent support and the Enterprise Avenue (Road 12) received 33.5 percent.
- Proposes fewer potential negative impacts on environmental resources than the Road 12 alternative.
- Exhibits more substantial benefits to the various community elements listed in the Alternatives Evaluation Matrix (*Table 11.1 or Appendix C*).

12.3 Next Steps/Schedule

A public meeting will be held to present the results of the Feasibility Study recommended Preferred Alternative to the public and solicit input on the recommendation. The Feasibility Study will then be finalized and the project will move into preliminary engineering and environmental study.

The anticipated schedule for key milestone dates of the project includes the following items:

- Finalization of Feasibility Study & Preferred Alternative Corridor – October 2013;
- Environmental Document Approved – April 2014
- Detailed Design Completed* – June 2015;
- ROW Acquisition Finalized* – October 2015;
- Final Plans Submitted to Central Office* – October 2015;
- Sale Date* – January 2016;
- Start Construction* – March 2016

*These steps/phases are pending available funding.