STP/SNK Roadway Projects

Project Name	WAR-CR 282-0.97 (King Avenue Bridge over the Little Miami River)
Applicant Name	Neil F. Tunison, P.E., P.S.
Applicant Title	County Engineer
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Phone	(513)695-3308

Project Information	Warren County respectfully requests OKIâ€™s consideration of our King Avenue/Grandin Road bridge replacement project for Funding Year 22. EXISTING CONDITIONS: King Avenue (as named in Deerfield Township) and Grandin Road (Hamilton Township) is one continuous road that provides a direct connection from SR 48 in the South Lebanon/Maineville area to the I71/SR 741 interchange and essentially a direct connection to the I75/SR 63 interchange. King Avenue/Grandin Road crosses the Little Miami River with a 24-foot wide, 450-foot long, six-span structure that is typically referred to as the King Avenue Bridge. The existing roadway approaches to the bridge crossing include a sharp, nearly 180-degree, hairpin curve with a better than 10% grade for a portion on the King Avenue (northwest) approach, and a 90-degree S-curve on the Grandin Road (southeast) approach. Historically, the King Avenue Bridge has been inaccessible to trucks, school buses, RVâ€™s, etc. due to the substandard roadway geometrics mentioned above. Currently though, the structural condition of the bridge is the greater consideration. The Warren County Engineerâ€™s Office (WCEO) estimates that the remaining service life for the bridge is five years. Other safety concerns for motorists and pedestrians alike exist most notably in a high accident area that includes a pair of 90-degree curves on the Grandin Road approach and an at-grade ODNR Little Miami Scenic Trail crossing of Grandin Road. REQUESTED IMPROVEMENTS: The proposed bridge improvements include a new two-span, 48-foot wide (two-lane), 550-foot long structure with shoulders and an 11-foot wide dedicated pedestrian/bike way and concrete barrier to separate vehicular traffic from pedestrian traffic. The associated roadway improvements will consist of a greatly improved horizontal realignment along both approaches and a new vertical profile that will moderate the existing steep vertical grades on the King Avenue approach and will also allow for a tunnel crossing of the ODNR path under Grandin Road. Other improvements include turn lanes for an improved access that will be shared by both a brownsfield development and the relocated parking area for ODNRâ€™s Little Miami Scenic Trail hub. The proposed work limits begin 1,050-feet south and end 800-feet north of the King Avenue Bridge. PRIMARY GOALS: â€¢ IMPROVE MOTORIST AND PEDESTRIAN SAFETY. The proposed improvements will eliminate both the hairpin curve north of the bridge AND the pair of 90-degree curves that bookend a high accident area (nearly 1600 accidents/HMVM). The improvements

Upload Project Location Map	1
design FY	
designrequested	
design local match	
Design Total	$0.00
Design Match Percent	0%
PE fiscal Year	
perequested	
pematch	
PE Total	$0.00
PE Match Percent	0%
Right-of-Way FY	
rowrequested	(Please see the attached
rowmatch	spreadsheet.)
Rowtltal	$0.00
Row Match Percent	0%
utilitesFY	

utilitiesrequested	(Please see the attached
utilitiesmatch	spreadsheet.)
Utilities Total	$0.00
Utilities Match Percent	0%
constructionfiscalyear	FY 22
constructionrequested	(Please see the attached
constructionmatch	spreadsheet.)
Construction Total	$0.00
Construction Match Percent	0%
All Requested Totals	$0.00
All Match Totals	$0.00
All Project Total	$0.00
All Match Percent	0%
Bike Fiscal Year	

bicyclerequested	
Bike Total Match	
All bike Total	0.00
Add KYTC â€œState Forcesâ€• oversight charge of 10% of design cost or minimum $5000 to total design amount. Attach a certified cost estimate.	1
An adopted ADA Transition Plan is in place for our jurisdiction.	yes
Date of Adoption, if applicable	5/20/2016
An adopted Title VI Plan is in place.	yes
Date of Adoption, if applicable Copy	10/20/2015
I understand that non-federal match is required as a condition of receiving federal funds and hereby pledge those funds for this project.	yes
I understand that as the applicant, I am responsible for providing funds for cost overruns. If additional federal funds are received our jurisdiction will provide non-federal funds as match.	yes

I understand that if we accept federal funds and cancel or delay the project that future applications to OKI may be subject to penalty as described in the application.	yes
I understand that as a condition of receiving federal funds, I hereby pledge to maintain the federal investment in a reasonable and prudent manner through its useful life.	yes
Name	Neil F. Tunison, P.E., P.S.
Title	County Engineer
Organization	Warren County
Date	June 1, 2018
What is the existing safety crash rate for the project area?	500-to-750-crashes-per-hmvm
Improvement Type	Grade Separation (ODNR Bikepath tunnel under Grandin Road), Modernize Roadway (improved horizontal and vertical profiles)
With a Crash Reduction Factor:	40, 20 (The accident rate near the double S curve is 1600/HMVM; WCEO anticipates
ADT	10,025

Source of ADT Data	Raw 24 hour count, November 09, 2017
What is the Travel Time Index?	1-2-and-2-0
What is the impact of your project on Travel Time?	medium
What are the truck traffic volumes in the project area? Trucks/day.	Currently zero (0) due to large vehicle restrictions. Estimate more than 300 trucks/day upon completion.
% of ADT	3%
Source	OKI model run utilizing 2015 base traffic data with and without truck restrictions on the King Ave bridge (Stantec memo dated 07/31/2017).
Pavement Condition	See bridge condition below.
Bridge Condition	The PAA indicates a bridge sufficiency rating = 12.5. In 2017, the sufficiency rating was recalculated to be 4.0.
Complete Streets: Which modes will be accommodated in the completed project? Check all that apply.	four, pedestrian-facility, motor-vehicle
What is the current status of the project?	Request for construction and ROW funding
Will your project have any impact(s) on any of the following OKI identified Environmental Justice groups? Check all that apply.	

Describe any direct or indirect permanent benefits of your project on the identified EJ groups?	The project area includes a well-utilized hub/parking area for a multi-use pathway (ODNRâ€™s Little Miami Scenic Bike Trail) that is accessible as a destination for EJ group members along with the general public. The ODNR hub is located in a high accident area (nearly 1600 accidents/HMVM) adjacent to and crossing the existing 90-degree S-curve on Grandin Road. The existing public parking area is gravel, uneven, and not easily accessible for some disabled users. The existing bridge over the Little Miami cannot safely accommodate pedestrians, particularly pedestrians with visual, hearing, and mobility concerns. And the at-grade multi-use path crossing on Grandin Road, while well marked, can only marginally accommodate persons with disabilities. The proposed infrastructure will include a tunnel crossing under Grandin Road, a new paved parking area for the ODNR bike path hub that will include handicap parking spaces and an unloading area with an ADA compliant connection to the ODNR multi-use path, and a new 2-lane (48-feet wide) bridge on King Ave/Grandin Rd over the Little Miami River with shoulders and a shared pedestrian/bike path connection to the Kings Mills area. This modern and safer vertical and horizontal road profile along both approaches will replace the unsafe, structurally-deficient and functionally-obsolete bridge. The closest OKI's TAZ (1432) that includes an OKI identified EJ group (Low-income and Disabled in TAZ 1432) is located approximately two miles north of the project area as measured along the Little Miami Bike Trail. This TAZ is also located within the Kings Local School District, and while it is not an especially short trip by bike and/or by foot from TAZ 1432 to the Kings elementary, junior high, and high schools, the new multi-use path connection proposed with this project across the Little Miami River would be a viable option for some students and other members of the community to travel to/from the schools by a mode other than vehicular transport where no viable options exist currently. This option may be more likely considered for sporting events or other extracurricular activities where school bus service is unavailable.

During the implementation phase, will the project have a temporary or permanent negative impact on any of the OKI identified EJ groups listed above? If yes, please describe the impact and how it will be mitigated:	Traffic will be maintained on the existing bridge during construction. The single exception to this would be if the structural condition of the existing bridge necessitates itâ€™s permanent closure until the new bridge is constructed. Local traffic will also be maintained at all times. The existing gravel parking area will likely be closed for a period during construction for safety reasons. Warren County will post the locations of other nearby facilities. At some point prior to project completion, the adjacent Peters Cartridge Plant will be repurposed for apartments, restaurant/brewery, or other commercial/retail. Warren County will continue to consider the potential for EJ group members to be represented within the future Peters Cartridge redevelopment area as the development moves forward, and will work to identify any potential need for mitigating negative impacts to EJ community members while responding accordingly to address the mitigation needs.
Will the completed project have a negative impact on any of the OKI identified EJ groups? If yes, please describe the permanent negative impact(s) and how it will be mitigated:	The design team has not identified any potentially negative impacts (permanent impacts) to EJ group members.
Please outline your communication plan with any of the OKI identified EJ groups related to the project. (i.e. public meetings, bilingual information, develop community liaisons):	The project will include a Public Involvement process. All advertising and informational materials, included posted materials on-site during construction, will include a number and email address available so that we can provide improved service to persons with special needs.

Employment, Employment Bonus and Investment Bonus: How does the project provide economic vitality in the project area?	A historic and brownsfield (Superfund) property - site of the former Peters Cartridge Plant - is included within the project limits as shown on the attached exhibit (Alternate #3). The Peters Cartridge Factory was constructed between 1916 and 1919 and was used for the manufacturing of ammunition for WWI, WWII and sport. The company ceased operations after WWII and is vacant today. Six of the original buildings still remain, and developers Bloomfield/Schon and Associates plan to convert the property into 128 residential lofts, creative office space and a brewery/restaurant. (Please also see the attached letter of endorsement from the developer, Bloomfield/Schon.) This $25,366,000 rehabilitation project was granted a $2,400,000 tax credit by the Ohio Development Services Agency, and the United States Department of Interior National Park Service approved the developer's Historic Preservation Certificate Application. The estimated hard infrastructure cost is over $20-million ($23,645,000, developer's Ohio Development Services Application) with added employment of up to 50 employees (total payroll $800,000 to $1,000,000/year). A traffic analysis was completed for the Peters Cartridge development, and the approved final report indicated that both a left and right turn lane is warranted for the development access (shared with the relocated ODNR parking lot access). Two of the old Peters Cartridge Plant buildings are located within the public right-of-way meaning that constructing the necessary improvements along the current roadway alignment is in conflict with the developer, county, and US Dept of Interior goal of salvaging and repurposing these historically significant buildings. (This is apparent in the attached google earth street view image showing the proximity of the building fronts to Grandin Road.) Warren County plans to remedy the encroachment of the historic structures in the public right-of-way by vacating the right-of-way area made unnecessary with the proposed road/bridge realignment away from the buildings. Notably, the improvements necessary to accommodate future traffic for the development can only be made by moving the road away from the historic structures. This cannot be reasonably done except in conjunction with the otherwise needed public road and bridge improvements that are included with this funding request.

Air Quality/Energy: Will the project reduce Vehicle Miles Traveled (VMT), Vehicle Hours Traveled (VHT) or both?	vht-reduced, vmt-reduced

Please explain:	As mentioned previously, large vehicles have historically been prohibited from using the King Avenue bridge due to poor roadway geometrics on both approaches. In 2016, Stantec coordinated with OKI for a model run with and without the truck restriction on the bridge. The percentage of trucks without the restriction was estimated at 3% due in part to the existing and anticipated future light industrial zoning on Grandin Road east of the bridge. FIELD OBSERVATION/TEST EXISTING FREE FLOW vs PROPOSED for PASSENGER VEHICLES: EXISTING: from a point just beyond the hairpin curve to 540-ft south of the Grandin Rd crosswalk = 2067-ft. Average travel time was determined to be 55.1-seconds (weekday, 12:30 to 1:00 pm, light traffic). PROPOSED: The proposed realigned length between these two points is 1500-ft. Free flow speed on the adjacent section south is approximately 43 mph (63 ft/s). At 63ft/s, the anticipated travel time between these two points for a free flow condition is 23.8-seconds for a theoretical reduction of up to 31.3 seconds/vehicle x 10025 current ADT = 87 hours/day savings with the improvements for passenger vehicles alone. SCHOOL BUSES: Utilizing their school bus routing software, Kings Local Schools Transportation estimates that 13 of their bus routes will reduce their run times by a combined total of 4.5 hours/day and 8 more routes will reduce their run times by a combined 0.5 hours/day for a total reduction of 5.0 hours/school day by opening up the King Avenue bridge to large vehicles. TRUCKS: With truck prohibition lifted. The following is a summary of travel time improvements from Grandin Road just west of SR 48 with the truck restriction lifted on the King Avenue bridge utilizing Google Map runs at 11 am, Monday, April 23: 22% improved travel time to I71/Montgomery Rd 18% improved travel time to I75/275 12% improved travel time to I75/SR 63, and 12% less VMT (-1.6 miles) To highlight the effects of the longtime truck restriction on the bridge, it is worth mentioning as an example that the design team is considering the cost of moving 35,000 cy of material that may be removed on the south side of the bridge for needed embankment on the north side. The contractor is likely to be required to truck the material to the north side via Grandin Rd, Mason-Morrow-Millgrove, Columbia to King Avenue depending on the bridge condition at the time of construction. To deliver 35,000 cy of material to the north side of the bridge with standard tandem dump trucks, the total mileage and time traveled is approximately 2800 trucks x 6.75 mile detour = 18,900 miles total; 2800 trucks x 16 min/route = 750 hours.

Does this project create new or enhance existing intermodal connections?	yes
If yes, please describe:	New intermodal connections include the lifting of a decades long restriction on truck traffic over King Avenue bridge and connecting Deerfield's Carter Park trails in Kings Mill's (adjacent to Kings Elementary School) and ODNR's soft path along the northwest side of the Little Miami River with the Little Miami Bike Trial on the southeast side of the river. The proposed multi-use path extension over the Little Miami River is a long sought after connection outlined in the Miami to Miami Connection Feasibility Plan as well as the Deerfield Township and Warren County Comprehensive Plans and Deerfield Township Master Plan of Paths. Enhanced intermodal connections include a tunnel crossing for the Little Miami Bike Trail under Grandin Road and a paved parking area for the bike trail hub adjacent to the Peters Cartridge Plant site.
% replacement	100%
% expansion	0%
Please Explain	The STP portion of the project consists of replacing an existing two lane road and bridge with a new two lane road and bridge. 100% replacement. The Transportation Alternative portion - the bike path extension and enhancements - make up 22% of the total project cost.
Please indicate all that apply	Is the project located in an area that is experiencing strong growth pressures and expected and/or planned to develop into a mixed use/multi modal center?

Explain:	Bloomfield/Schon and Associates plans to repurpose the former Peters Cartridge Plant buildings for 128 residential lofts, creative office space and a brewery/restaurant. Please see the attached Preferred Alternate Exhibit (Alternate #3) for a visual representation and the explanation with the brownsfield property description below (next item).
Will this project serve brownfield or greyfield properties, or areas where infrastructure is underutilized?	yes
Explain:	A "brownsfield" (Superfund) property, site of the historic Peters Cartridge Plant, is included within the project limits as shown on the attached exhibit (Alternate #3). The Peters Cartridge Factory was constructed between 1916 and 1919 and was used for the manufacturing of ammunition for WWI, WWII and sport. Prior to the Peters Cartridge Plant, the site was used for the manufacture of powder dating back to the mid-1800's. The company ceased operations after WWII and is vacant today. Additional historical information can be found at https://en.wikipedia.org/wiki/Peters_Cartridge_Company. Six of the original buildings still remain, and developers Bloomfield/Schon and Associates plan to convert the property into 128 residential lofts, creative office space and a brewery/restaurant. The project includes constructing a modified entrance with turn lanes for the Peters Cartridge redevelopment area. The environmental cleanup is complete but for the continued monitoring.
Are efforts to avoid, minimize or offset/compensate for environmental impacts planned as part of this project (e.g. wetlands, forests, streams, noise)?	yes

Explain:	The project is following ODOTâ€™s Project Development Process (PDP). Under this process, potential environmental impacts of all types (ecological, cultural, socioeconomic, etc) are identified, assessed, and coordinated with appropriate state and federal resources agencies. Efforts to avoid, minimize, and mitigate impacts are built into the PDP at sequential stages of plan development. Since the Little Miami River is a State and National Scenic River, project construction plans (including plans for revegetating streambanks and adjacent riparian areas) will be coordinated with the Ohio Department of Natural Resources (ODNR) and the National Park Service (NPS). Impacts to wetlands and streams are expected to be minor, overall (the proposed relocated bridge will clear-span the Little Miami River). Proposed improvements in roadway geometry will result in a low speed/free flow condition that is expected to help mitigate traffic noise.
Are green infrastructure strategies planned as part of this project (e.g. contiguous corridors to reduce habitat fragmentation, innovative stormwater runoff techniques)?	yes
Explain:	The green infrastructure strategies already slated for inclusion into the final design include a â€œgreenâ€• retaining wall, riparian replanting/restoration, collection and filtration of bridge deck drain along with other storm water bioengineering techniques. Other opportunities for implementing green infrastructure strategies will be considered throughout the ODOT plan development process.
Does this project abut or directly impact any potentially sensitive environmental resources (as identified in state conservation plans, maps or inventories)?	yes

Explain:	The project area contains several sensitive environmental resources, including the Little Miami State and National Scenic River, the Little Miami Scenic Trail, the Peters Cartridge Factory site (Superfund and National Register of Historic Places), and Carter Park (public park and National Register of Historic Places). The project is following ODOTâ€™s Project Development Process (PDP) and has been developed to date to avoid or greatly minimize impacts to these and other environmental features. Warren County is already coordinating with ODNR and the USEPA, and the County Engineer's Office staff has reached out to Pickaway County to learn from their experiences with the Pickaway County Engineer's successful project to build a bridge over a scenic area and Big Darby Creek.
Comprehensive Plan (or other): Is the project consistent with the jurisdictionâ€™s comprehensive plan?	yes
Title of Plan:	Warren County Comprehensive Plan (Thoroughfare Plan Element)
Date Adopted:	Comprehensive Plan adopted 11/15/2011, recently amended April 24, 2018.
Contact Person:	Zachary Moore, Senior Planner, Warren County RPC
Page Number(s) where project is identified and/or referenced:	Thoroughfare Plan, Section 4, page 4-3
Planning Area: Please identify the planning area (location) in relation to the proposed transportation project.	Deerfield Township, Hamilton Township.

Public Participation: Generally describe the public participation process for the plan (Include page references to specific examples, where applicable).	The Warren County Comprehensive Planâ€™s public participation process involved steering committees, community meetings, and a public approval process. Since the planâ€™s adoption in 2011, subsequent amendments have been based on prior adopted township comprehensive plans, area plans and district plans, all of which utilize public input to develop recommendations and solutions to issues. Regarding the King Avenue bridge proposal, nearby property owners were notified of the project and a community meeting was held to gather input prior to initiating an amendment to the Thoroughfare Plan. The King Avenue bridge amendment was initiated alongside an amendment to address SR 63 improvements, based on recommendations from the Turtlecreek Crossroads Plan which involved a robust public participation strategy. THIS PROJECT SPECIFICALLY: A public involvement meeting was held April 25, 2017 at the Kings Junior High School to present three alternatives for consideration. Approximately 340 attended the meeting and 160 comments were received. One hundred twenty eight (128), 80%, provided comments favoring Alternative #3, the alignment chosen for this application.

Core Contents: Generally describe the contents of the applicable plan related to the following elements: transportation, land use, economic development, public facilities, housing, natural resources, recreation, intergovernmental coordination and capital improvements. For example, are each of these elements included in the plan? Was appropriate inventory and analysis completed for these elements? Were goals objectives and policies set for these elements? If not, why not (e.g., resource limitations, characteristics of the jurisdictions)?	The current Warren County Comprehensive Plan applies to all unincorporated areas and consists of several â€œelements,â€• each developed at different points in time, grouped together and adopted by the Warren County Commissioners in November 2011 as the Countyâ€™s Comprehensive Plan (last amended in April 2018). These elements include Land Use, Economic Development, Housing, Parks & Open Space, Capital Improvements Programming, and Transportation. Since that time, several township jurisdictions have adopted their own local level comprehensive plans, and it has been the policy of the RPC to adopt and incorporate these plansâ€™ recommendations into the Land Use and Transportation elements following adoption at the township level. The Comprehensive Plan does include Goals, Objectives, and Policies/Strategies for the Land Use, Transportation, Housing, and Parks & Recreation elements. Inventory and analysis was completed for these elements and used as a basis for the goals. The Economic Development element does not list specific goals/objectives, instead relying on an analysis of local resources to methodically select certain sites within the County to concentrate development for targeted industries. Intergovernmental coordination is not addressed in the County Comprehensive Plan but is addressed in the Deerfield Township Comprehensive Plan and Hamilton Township Comprehensive Plan, which have jurisdiction in the King Avenue Bridge area. The RPC has long contemplated performing an update to the County Comprehensive Plan to include additional elements/topics, yet the course for the past few years has been to conduct planning efforts at a more â€œgrassrootsâ€• level to address topics pertinent to each jurisdiction or area studied.

Land Use/Transportation Relationship: Generally describe the relationship between land use and the proposed transportation project as set forth in the plan? For example, is new development in the area creating need for the project? Is new development planned for/expected that the project will serve? (Include page references to specific examples).	The existing King Avenue Bridge provides a vital transportation connection between the Kings Mills and Mason communities and the Hamilton Township community. Hamilton Township continues to experience residential growth in its various subdivisions and commercial growth along the SR 48 and US 22/SR 3 corridors. Improving and realigning the bridge configuration will help improve safety, traffic flow and trips to and from existing destinations in these communities. Hamilton Township currently has a CRA in place along the Grandin Road corridor, and hopes to attract a commercial/industrial base to this area. In addition, the currently vacant Peters Cartridge Factory, a 19th century National Register site, is located immediately adjacent to the bridge with significant potential for redevelopment. A developer currently has plans to redevelop the property as mixed use, to include commercial space and apartments. The Little Miami Scenic bike trail also runs directly adjacent to the Peters Cartridge site, with an at-grade crossing at Grandin Road. The King Avenue bridge proposal re-routes the bike trail to tunnel underneath the bridge, which will greatly improve the safety of cyclists and promote effective alternative transportation.
Local Match: How much additional local match is being provided OVER the required match?	+ 10%
Project Delivery History: Has the applicant had any programmed projects miss their originally programmed date?	no
Specify projects: (see application instructions for negative points associated with this factor)	None.

Technology: Describe elements of your project that encourage the implementation of new technologies, automation, advance materials, etc, in transportation.	Vegetated Wall System: Warren County will utilize the FlexMSE Vegetated Wall system or approved equal. MSE bags are filled with sand and organics and are water and root permeable. The MSE plates are made from 100% recycled materials. The system is rated for a 120-year design life though it is also reasonable to suggest that the service life can extend well beyond 120-years. The current budget estimate is $1.3-million for retaining walls. Additional information is available at www.FlexMSE.com. Concrete Bridge Deck Mix Design: Warren County will utilize the ODOT CMS 511 concrete materials specification for the bridge deck construction except that the Class QC@ concrete mix will also include a micro-silica admixture (7% by weight) and polypropylene fibers. This mix has been well tested by Hamilton County and is designed to significantly increase bridge deck longevity. Cameras: Cameras and onsite data collection equipment are included with this proposal for the grade-separated bike path crossing under Grandin Road. Conduit: The bridge will include 2 ~ 4" conduits. Due to the length of the bridge, junction boxes will be installed on both ends and middle with round 32" pull boxes coming out of the parapet wall on either end per ODOT/ Drive Ohio details for use with future technology upgrades. Bike Path Counter Station: Will be added to the bridge to augment the ODNR and/or Friends of Little Miami State Park counter at Grandin Road. Automatic River Depth/Velocity Gauge: The Warren County Engineer's Office is coordinating with the National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS), and Warren County Emergency Management Agency (WCEMA) to add a new radar depth and velocity detection unit to the bridge with radio data transmit. There is a manual read river depth gauge (1932) located on the existing bridge. The process has been that a local volunteer drives onto the bridge in the early morning hours twice a week, parks and reads/records the river depth. Notably, the same volunteer has performed this task for many years (decades). Because of the influence of other tributaries upstream and downstream, NOAA /NWS indicated that they have a need to continue monitoring on the new bridge to avoid to the need to correlate their historic data to a different location.

Supplemental Information Provided by the Applicant Insert Links or supplemental information as appropriate (maximum 5 pages please)	1