

To: Members of Dublin City Council
From: Dana L. McDaniel, City Manager 
Date: July 1, 2016
Initiated By: Terry Foegler, Director of Strategic Initiatives
Megan O'Callaghan, PE, Director of Public Works
Mandy K. Bishop, PE, Bridge Street District Program Management Consultant
Re: June 20, 2016 Council Workshop: Scioto River Pedestrian Bridge Follow-Up

Context

City Council held a public workshop on June 20, 2016, a portion of which included an update and extensive discussion regarding the 30% detailed design-engineering effort associated with the proposed Scioto River pedestrian-bicycle bridge. 30% design is a customary plan submission and review stage for major engineering projects and is when pier types and locations, alignment, abutment type and locations (landing points), bridge width and depth are established. The purpose of this memorandum is to provide additional follow-up information related to that discussion, and to provide the Administration's recommendations for moving forward. The memorandum will provide:

- Additional historical context for some of the key actions and decisions related to the pedestrian bridge, as well as the identification of the financial investments made or contracted for to date;
- An assessment of the likely cost and schedule implications for the design and construction of a taller main tower element within the suspension bridge portion of the bridge;
- Clarifications and recommendation regarding the bridge lighting;
- An identification and request for affirmation of key decisions associated with the pedestrian bridge and other recently finalized planning efforts for several Bridge Street District public improvement projects.

Background

As described in the staff report distributed for the June 20 work session, the concept of the planned pedestrian bridge formally emerged from the Scioto River Corridor Framework planning efforts in 2013. Council had previously expressed interest in such a bridge after its visit to Greenville, South Carolina in 2009. EndreStudios was engaged as a sub-consultant to MKSK Studios to explore this bridge idea as part of a comprehensive Bridge Street District river corridor planning effort, and produced the first concept for the pedestrian bridge. The initial MKSK River Corridor Framework plans also provided the first concept for the proposed location for this bridge, connecting the east side of the river at a plaza within a new riverfront park, and tying it into the west of the river by some type of new landing area along North Riverview Street, just east of its intersection with North Street, as depicted below in an early concept from a Spring 2013 presentation.



From the concepts produced in this initial Scioto River Corridor Framework planning effort, the City quickly advanced to the preparation of preliminary engineering in Spring-Summer of 2013 for all of the key public projects identified in that planning effort, including the SR 161/Riverside Drive Roundabout, Riverside Drive realignment, the Dale-Tuller connector, and the riverfront parks and pedestrian bridge. The goal of the preliminary engineering was to advance the planning for these projects to their next stage, prepare preliminary cost estimates, and position the projects to move forward to design once programmed within the City's 5-year Capital Improvement Program (CIP). The projects were first programmed in the 2014-18 CIP, which was approved by Council in September 2013. Preliminary engineering efforts were still in their early stage at this time, so cost estimates were very conceptual, especially for the pedestrian bridge which had a total cost allocation of \$14.345M programmed in the 2014-2018 CIP adopted by Council on September 9, 2013. On September 16, 2013 Council held a workshop on the River Corridor Framework Plan, during which the meeting minutes reflect Darren Meyer, lead project planner and urban designer for the River Corridor Framework Plan with MSKS, relayed:

"The bridge will be an approximately 700-foot span suspension bridge with a single tower and an S-shaped deck. Architecturally, it will appear to be a light, open bridge, but it actually needs to be a light bridge in terms of materials and cost in order to span 700 feet. Their architectural team is working through various 3D iterations of the bridge, all of which include the cost. There are international firms that have a lot of experience with this bridge type, including the San Francisco-based architect/engineer on their team. When their core engineering team has developed the model for the bridge, it will be handed off for a peer review by one of the international groups that has substantial experience with these bridge types. There are several layers in the process, and because it is a very unique structure, this is one of the more challenging parts of the project. However, they have several excellent people on board to guide it."

The message from Mr. Meyer emphasized the amount of analysis and testing yet to be undertaken in order to fully validate the concept, and meaningfully project its cost. A team was assembled in late 2013 to further analyze the pedestrian bridge, its constructability, performance, and its likely costs, and included EndreStudio, Burgess & Niple, Messer Construction, and Schlaich Bergermann & Partner, in addition to ongoing engagement of the River Corridor Planning team (MKSK, EMH&T, etc.).

As this more in depth analysis of the pedestrian bridge piece of the River Corridor projects moved forward, it became clear in early 2014 that the costs associated with building such a unique “s” curve suspension bridge, over such a wide span, were becoming prohibitive. Similarly, as planning efforts along the west side of the River advanced (including in depth studies of North Riverview Street), it also became increasingly clear that a landing plaza along the east side of North Riverview, at its intersection with North Street, was very problematic and would have many undesirable attributes. These included:

- the lack of ADA accessibility due to the grade separation from North Riverview to North High Street (12 feet),
- the possible impacts of and upon future redevelopment of private land along these roadways, and to the future roadway design itself,
- the lack of good pedestrian connections to, and visibility from the landing plaza to High Street,
- the presence of numerous vehicular ways and access points adjacent to this plaza location,
- and the negative park impacts of protruding such a landing plaza and its support structure over the steep hillside condition within the river park at this location.

Council was provided an in-depth update of all Bridge Street District projects at its 2014 Goal Setting Session on February 28, 2014. At the Goal Setting Session, the Administration recommended six “next steps” relating to those key public improvements within the Corridor which needed to move forward in order for the River Corridor projects to proceed to implementation as Council desired, as follows:

Recommended 2014 Next Steps Bridge Street District Public Improvements

- 1. Tuller Ridge-Dale Drive Connector: Design, ROW Acquisition & Construction**
 - Critical Path for all major River Corridor Public Improvements
- 2. *Relocated Riverside Drive: Final Design**
- 3. *Riverside Drive - SR 161 Roundabout: Final design**
 - Continue public education on future operations
 - Prepare MOT plan, review with Council, prepare public communication and mitigation strategy
- 4. *River Park, East Side of Scioto River: Grading Plan & Utilities Plan**
- 5. Scioto River Pedestrian Bridge: Explore cost savings options**
 - Maintain Goal of an Iconic Pedestrian Bridge element
- 6. Streetscape and Furnishings Standards: Establish standards for Bridge Street District Street elements, including related furnishings**

*Construction timing to be assessed throughout the final design process...explore opportunities for coordination efficiencies with adjacent private developments, primarily from mass excavation

Next Step number “5” was in recognition of the ongoing budget and design challenges still facing the bridge, which the Administration summarized in its presentation.

The Administration recommended at this Goal Setting Session a resolution seeking among other items, an affirmation by Council to continue to explore cost savings options for Scioto River Pedestrian Bridge design, while maintaining the goal of preserving the iconic bridge elements. On March 10, 2014 (and as an outgrowth of its 2014 Goal Setting session), City Council approved Resolution 17-14 (Attachment A), which affirmed Council's direction to move forward as staff had requested with the key catalytic public projects within the River Corridor, including the Pedestrian Bridge. In this Resolution Council reaffirmed its approval of the Pedestrian Bridge concept and directed the Administration:

"Continue to evaluate and refine final design, costs and landing options for the Scioto River pedestrian bridge, and develop alternatives for consideration as soon as possible."

The challenges still facing the City with establishing a yet-to-be determined acceptable west side landing location, and to reduce project costs were acknowledged within the language of this resolution.

In mid-March 2014, staff tasked the bridge team (including Paul Endres and additional team members) with finalizing its assessment of the pedestrian bridge, and defining the cost saving alternatives that could move toward a more reasonable construction cost while maintaining the iconic appearance of the bridge that had been presented. Among the key cost saving elements explored in this effort were the reduction of suspended bridge span length, tower height, girder depth, bridge materials, and other design and construction assumptions. It had been confirmed by this point, however, that the bridge span length was one of the most significant cost drivers and that the span would need to be reduced to about 500 feet in order to achieve meaningful cost reductions. Some amount of elevated pedestrian walkway would then be used to complete the span of crossing the river valley. The project architect (Paul Endres), the City's planning and urban design consultant (Darren Meyer with MKSK), as well as City staff, were all very supportive of this approach.

The cost saving analysis for the suspension bridge portion of the pedestrian bridge was completed in July 2014, and staff discussions and refinements extended into Fall 2014. The total potential savings identified by the bridge team at the time were estimated to be in excess of \$4 million, but the team affirmed it had preserved the desired original character of the iconic pedestrian bridge. The most significant recommendations included a reduction in the length of suspension bridge span from a total length of 632 feet to 500 feet. In conjunction with this span reduction, a tower height of 83 feet was recommended by the project architect as being appropriately scaled, and consistent with the iconic images that had been previously shared. At this point in time, however, the west side bridge landing was still being examined, and its final location would of course impact the final design and cost of the bridge. City Council approved its 2015-2019 CIP on September 8, 2014 in Ordinance 78-14, in which the total cost of the pedestrian bridge was then programmed at \$18.225M. Given the submission, preparation and review times associated with the Five-Year CIP, the most current estimates generated by the review team at the time for the pedestrian bridge were likely not fully reflected in the 2015-19 CIP.

The west side bridge landing locations continued to be studied while the City was advancing and expanding its overall west side planning efforts with assistance from the MKSK team (the landing location being one of the key goals of that planning effort). These west side efforts also related to studies associated with the new Dublin branch of the Columbus Metropolitan Library, the Bridge Park West project, needed roadway enhancements in the area, and the on-going west side River Park planning. These comprehensive planning efforts continued to move forward through the remainder of 2014 and early 2015 in tandem with the ongoing refinement of the estimating and cost savings efforts associated with the pedestrian bridge.

Fortunately, the west side planning efforts did identify what eventually became the best and clearly preferred west side plaza location which would serve as the landing area for the pedestrian bridge. The preferred west side plaza location for the bridge landing, located just east of the intersection of Rock Cress Parkway and North High Street;

- is fully aligned with the proposed Rock Cress Parkway (and its cycle track) to provide seamless continuity to the Bridge Street District signature street system,
- provides a fully accessible pedestrian approach, at grade with North High Street ,
- would have great visibility from, and interface with High Street, the new Library, its parking garage and Rock Cress Parkway,
- is framed by active mixed-use developments including upper story residential units and ground floor restaurants and outdoor seating,
- would not protrude into or negatively impact the sensitive river park areas,
- is sized and detailed to merge seamlessly with the fine-grained scale and quality of Historic Dublin while allowing for open views to the pedestrian bridge, park and river.

At a City Council Work Session on May 11, 2015 the Administration and consulting team provided Council its most comprehensive update on the outcomes from these west side planning efforts, with the primary focus of the session being on the planned improvements associated with the library and the relationship of those improvements to other City projects on the west side of the River, including the pedestrian bridge and its landing plaza.



The above slide from the May 11, 2015 presentation depicted the new location for the landing area, showing the bridge's shift north, and the slide below began illustrating the concept of the 500 feet long suspension bridge connecting to the new west side plaza via an elevated walkway.



The results of the cost saving analysis and the finalization of the landing points helped facilitate the most informed projected cost estimates to date and were used as the basis for the City's most recently approved Five-Year CIP presented in August of 2015. This current approved 2016-20 CIP includes a total project cost estimate for the pedestrian bridge of \$22.438M, with an estimated construction cost of \$19.21M. These budget figures provide the basis upon which the current design efforts of the TY Lin final design team have been authorized to move forward.

The west side landing area plaza location was further confirmed in the final version of the Bridge Park Development Agreement, authorized in Ordinance 44-15 in August of 2015, wherein provisions were added to specifically include an obligation of the developer to provide the new plaza location to the City of Dublin at no cost. This location was also presented as part of Council's 2016 Goal Setting session on March 11, 2016 as part of a BSD update, during which staff reconfirmed that this location decision had been finalized. The plaza and bridge landing location were most recently affirmed as part of Council's formal approval of the Scioto River Master Park plan on May 23, 2016.

There was also some discussion at the June 20, 2016 Work Session regarding the pedestrian experience while crossing the bridge. The project's lead planner and urban designer, Darren Meyer with MKSK, described it as follows:

The pedestrian bridge experience is comprised partly of the bridge architecture and largely of the river and surrounding park. The scale and natural beauty of the Scioto River corridor is a defining feature of the experience of crossing the pedestrian bridge. Given the significant role of the river and park environment in the experience of the pedestrian bridge, the views from the bridge will be dynamic – always changing with season, time of day and atmosphere.

The western side of the river is largely a flat floodplain meadow several hundred feet in width that climbs quickly as you approach North Riverview and High Street. This area was formerly agricultural land through the mid-20th century and has since reverted to a naturalized environment, though one

with a significant presence of invasive plant species. The proposed park design, and the views from the pedestrian bridge as you move eastward from Historic Dublin, will be defined by naturalized plantings: taller meadow grasses, selective understory trees and shrubs and the perseveration and re-establishment of a wooded floodplain. Views across the river along the pedestrian bridge length will be selectively cleared and maintained to allow dramatic vistas while preserving, where feasible, legacy trees and mature vegetation. Trails and park amenities in the floodplain meadow will be sensitively placed to allow access to the river and natural areas without significantly disturbing the pastoral effect.

The architecture of the pedestrian bridge itself - deck, railing, and substructure – will be consistent from west landing to east landing, accented around the river channel by the suspension cables and main tower. The location of the main tower was designed to sit as near the river channel as possible to maximize views of this iconic element from all vantage points. The landings at either end of the pedestrian bridge will provide a transition from the largely linear movement of bridge users to a wider community gathering space and continue the high architectural quality of the bridge and adjacent built environment.

The graphic below depicts the current extent of the suspension bridge, the section of elevated walkway, and the plaza locations.



Council also requested staff provide cost information related to pedestrian bridge planning, design and land acquisition to date. That summary is provided as Attachment B.

Providing a Taller Tower Element-Cost and Schedule Implications

At the June 20, 2016 Work Session there was extensive discussion regarding the potential desirability of increasing the height of the main tower element on the proposed pedestrian bridge. One point of clarification at this point; the tower heights being referred to during that discussion actually refer to the height from the top of the bridge's walking deck to the top of the tower (not to the height of the tower as measured from the ground). So, for the 30% design summary presented to Council at the meeting, the height from the bridge deck to the top of tower was 83 feet, and the height of the tower from the ground was actually 132 feet.

As noted earlier, the most meaningful cost saving element identified as part of the 2014 bridge cost saving efforts was the reduction in the length of suspension bridge span, wherein the final reduction had gone from a total suspended length of 632 feet to 500 feet. The total bridge length (suspension bridge and elevated walkway) is 760 feet. In conjunction with this span reduction, the project's architect, Paul Endres recommended a corresponding tower height of 83 feet as being appropriately scaled and preserving the iconic nature of the overall design. The bridge team and the Administration concurred with the project architect's recommendations at that time and all agreed the 2014 cost saving efforts had met the objectives of maintaining the unique and iconic design of the bridge while resulting in a more refined and acceptable cost estimate. These efforts had been completed by the time the Administration provided its comprehensive update at Council May 11, 2015 Work Session, as noted in the minutes:

"The pedestrian bridge analysis was done previously, and the City is initiating negotiations for the final design of that facility."

The estimates resulting from the cost saving efforts were used in establishing the cost estimates set forth in the 2016-2020 CIP, and helped frame the parameters that were provided as part of the scope for the design and permitting phase services. Staff eventually conducted a formal, competitive, selection process in the fall of 2015 to select the team for the design and permitting phase services for this project. As a result of this process, the team led by TY Lin International (TY Lin) was engaged. Paul Endres is continuing in the role as project architect, to help ensure continuity of the design concept. As was noted during our presentation at the June 20, 2016 Work Session, staff believes that the City has an extraordinarily talented, experienced and well equipped design team to carry out the design and permitting of this critical project.

During the initial stages of recent final design (the 30% design effort recently reviewed by Council), the project architect began to develop some concerns with his previous height recommendation as the impacts of all of the planning and design parameters were becoming increasingly evident. Among those concerns was a determination that the actual walking deck was, by necessity, becoming more elevated within the "keyhole" of the main tower, thereby resulting in a more compressed appearance for the above-deck tower height of 83 feet. Council shared some of those same concerns at the June 20, 2016 Work Session and requested staff assess the cost and schedule impacts of including the tower element at an above-deck height of 110 feet consistent with the original concept.

Staff has worked with the TY Lin design team and concur with the team's findings that the primary tower height can be increased from its currently designed above-deck height of 83 feet (overall total tower height is 132 feet) to an above-deck height of 110 feet (total height is 169 feet) for approximately \$500,000, inclusive of all design (\$150,000) and construction (\$350,000) costs. The suspended span length would remain unchanged at 500 feet. Staff also concurs the pedestrian bridge will be enhanced visually by such a height adjustment, both in terms of the pedestrian experience on and near the bridge, as well as when being viewed from a distance.

So long as the design change process is initiated immediately, the schedule is anticipated to result in an additional three (3) months of design and review time, extending the projected design completion from late November 2016 to February 2017. Team members will endeavor to compress this time frame, if possible.

The exact impacts of the increased design time on construction timing is less clear. The team believes the increased tower height could result in an additional 2 months of construction time, subjecting the project to an additional winter season, and extending the completion date from the currently planned October 2018 to May 2019. Substantial completion of the bridge could potentially be feasible by the end of 2018 but is very much dependent on many factors.

As was emphasized at the June 20 Work Session, as the design efforts progress, so does the environmental coordination and permitting – primarily with the United States Army Corps of Engineers (USACE), Ohio Department of Natural Resources (ODNR) and Federal Emergency Management Association (FEMA). The two major permits associated with this project are federal permits that must be obtained from the USACE for work in wetlands and the river and from FEMA for potential impacts to flood elevations. Regardless of the proposed tower height change, the permitting will likely be the controlling factor driving the critical path schedule for the beginning of construction. Other factors that will likely impact the schedule include weather, steel availability, and adjacent construction activities in the area such as the plazas and other private development projects. As we continue to advance toward 60% design, and more details are included in the plans, we will gain additional information that will further inform our permitting and construction schedule.

Clarifications and Recommendation Regarding Bridge Lighting

City Council has previously expressed interest in the manner in which the new pedestrian bridge will be lit. Although not schedule sensitive at this point, Council did receive an overview of current lighting level options for the new pedestrian bridge at its June 20, 2016 Work Session. Three lighting options are summarized as follows:

Lighting Level	Illumination Focus	Cost
Primary	Walkway, Pylon-Eye of the Needle/Keyhole, Pylon-Base uplighting	\$178,000
Intermediate	Primary Lighting plus Hanger cable lighting w/color (RGB) ability and underside of bridge girder	\$728,000 (\$550,000 more than Primary)
Digital	All of the Intermediate Lighting plus a Low Resolution Video solution on hanger cables	\$1,300,000 (\$1,122,000 more than Primary)

The design team has provide additional detailed information regarding those lighting levels and that memorandum is provided as Attachment C.

Staff has reviewed the options and concurs with the TY Lin team’s recommendation that Council authorize the **Intermediate** option. This level of lighting will add visual interest to the entire bridge structure. For the hanger cables the Intermediate level of lighting gives the City the flexibility to program custom color

changing lighting sequences. The ability to program basic color shows provides more than enough lighting to highlight the bridge at night and further provide flexibility during select special events.

Budget Implications and Moving Forward

Based on the 30% design of the pedestrian bridge with an above-deck tower height of 83 feet, Base Lighting Option, 18 month schedule and concrete piers, the estimated construction cost is \$19,600,000. Increasing the above-deck tower height to 110 feet and incorporating the Intermediate lighting option the estimated additional construction cost is approximately \$900,000, for a total estimated construction cost of \$20,500,000. This compares to the current CIP construction estimate of \$19,210,000. In addition to the increased construction costs summarized above, the TY Lin team estimates additional design fees for the increased tower height to be approximately \$150,000.

As we continue to advance toward 60% design, and more details are included in the plans, we will gain additional information that will further refine the construction cost estimate. A typical construction contingency assumption for a non-complex bridge is around 10% at this stage of design. The above-referenced construction estimates currently include 9% contingency. For this type of complex and unique bridge a higher contingency such as 20% may be reasonable at this stage of design which would result in a total estimated construction budget of \$22,750,000. This contingency could then be reduced to 15% at 60% design. There are many unforeseeable factors that could impact the cost including material price escalations, availability of unique bridge elements in the domestic market (main suspension cable, bearings, dampers, etc.), the competitive bidding environment, availability of local/regional contractors with the experience to build this complex bridge, etc. However, only the formal bidding process will address the accuracy of all assumptions and considerations made in the engineering estimates.

From the Administration's perspective, we believe the following summarizes the current project status and the Administration's recommendations for moving forward:

- The current location of the pedestrian bridge, and its recommended landing locations continue to represent the best available locations and should remain as planned and designed.
- The Intermediate lighting level provides an excellent, cost effective lighting option which will add visual interest to the entire iconic bridge structure and give the City the flexibility to program custom color changing lighting sequences.
- Increasing the tower height from the current above-deck height of 83 feet to the proposed above-deck height of 110 feet will improve the appearance of the bridge both when viewed in near proximity and when seen from a distance. Given the objective to create what will likely become Dublin's most iconic public project, and the relatively modest budget and time impacts of the change, the Administration recommends increasing the above-deck tower height to 110 feet.
- Council affirm these decisions on July 5, 2016 in order to minimize the impacts upon the project's schedule

Affirmation of Key River Corridor Public Improvements

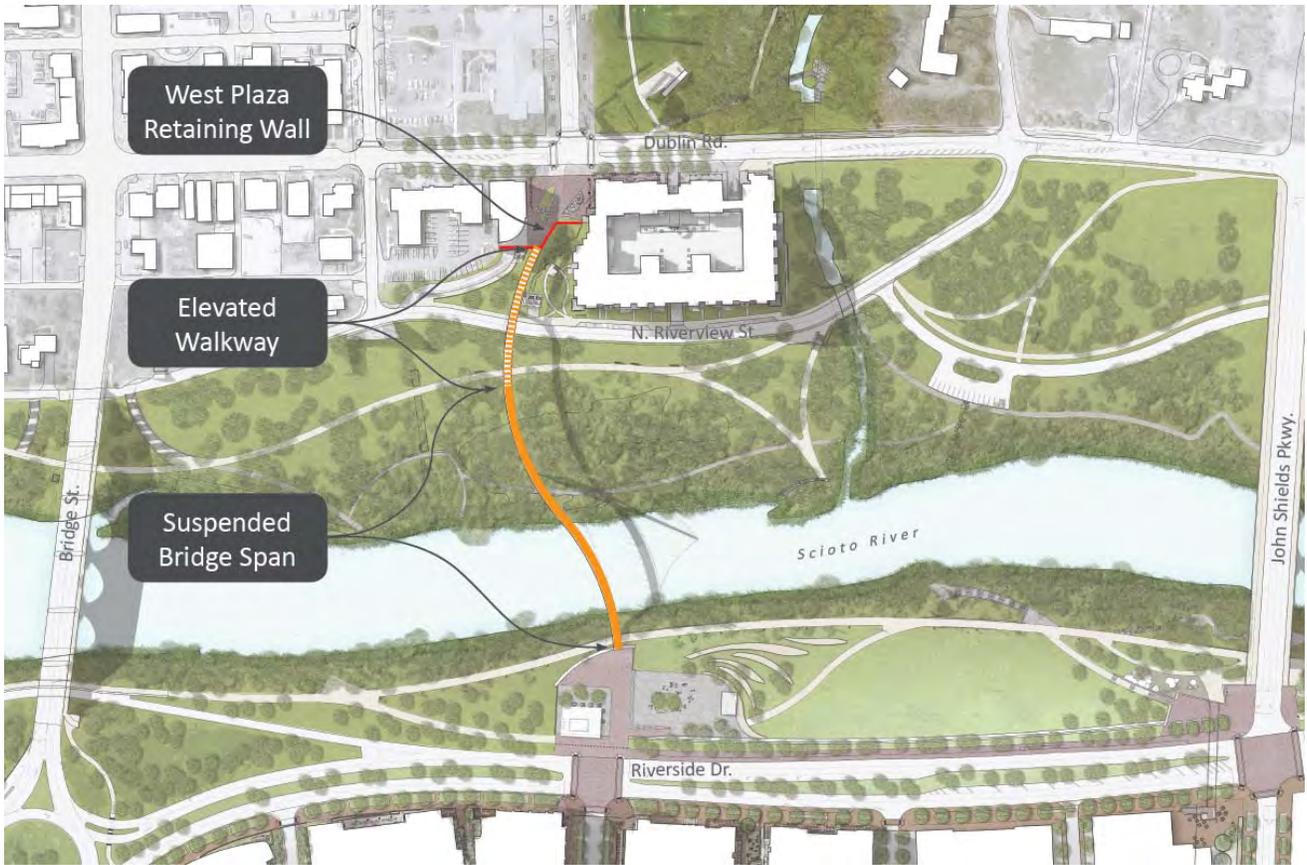
On a related matter, in March 10, 2014 Dublin City Council approved Resolution 17-14, entitled "**A Resolution Affirming Key Public Infrastructure Improvement Projects in the Scioto River Corridor Area of the Bridge Street District and Directing the Administration to Proceed with the Final Design of Various Public Improvements**" (Attachment A). The purpose of this resolution was to formalize and establish the clear intent of Council regarding a series of public improvements projects which had been extensively

planned and publicly reviewed over the previous months, so that the final engineering and design of the projects could move forward, as well as to make clear to all stakeholders that these location decisions for these projects had been finalized.

Since that time, the City has continued to advance its planning efforts along this corridor, most notably in connection with the library redevelopment and west side area planning, as well as the Scioto River Park planning. Many of these projects, and their time requirements for implementation, were reviewed with Council at its annual Council retreat on March 11, 2016, as well as in other forums. The Administration believes that in order to ensure that a series of pending public improvement projects in this area can confidently move forward in a timely and well-coordinated fashion, and that City Council is aligned with the Administration's actions in moving these forward, we request that City Council take a similar action for these more recently planned projects in order to affirm the appropriateness of, and need for these projects moving forward.

We would request that by motion, Council affirm:

- The current pedestrian bridge alignment, the landing plaza locations for the bridge, the Intermediate lighting package as presented, and the increase in the bridge's tower above-deck height to 110 feet are approved, and the design for all of these should move forward.
- The alignment and location of the North Riverview extension from North Street to North High Street (opposite Indian Run Drive), as depicted in the recently approved Scioto River Corridor Park Plan and page 7 of this memo, is affirmed and its construction should move forward immediately.
- The general alignment of the new roadway system which creates the new "block" where the new library facility and parking garage will be constructed (see Attachment D); consisting of Rock Cress, Franklin Street, North Street and North High Street; and the general location of the new library and the parking garage facilities on that block; with the timing of the design and construction of these facilities to be coordinated and advanced in tandem with the agreements and collaborative efforts finalized with the Columbus Metropolitan Library and the Dublin City School District.
- The need to advance the design and construction of a retaining wall for the new west side landing plaza (as depicted below) in order to better accommodate the future construction of the pedestrian bridge, the plaza itself, and the private projects being planned adjacent to the plaza.
 - As was discussed in Council's 2016 Goal Setting Session in March, there is, and will continue to be, a great deal of construction activity taking place in the northern portion of the Historic District over the next few years (pedestrian bridge/elevated walkway, plaza, Bridge Park west—north and south of plaza, North Riverview extension, North High Street reconstruction, and all the improvements associated with the redevelopment of the new library). This retaining wall (estimated to cost about \$500,000) will support both the eastern end of the new west side plaza and the western terminus of the elevated pedestrian walkway, and because of required construction sequencing and staging, will need to be constructed in the near future. The appropriation for this improvement (based on an estimate) is included in the supplemental appropriation being considered by Council on July 5, 2016.



RECORD OF RESOLUTIONS

Dayton Legal Blank, Inc., Form No. 30045

17-14

Resolution No. _____

Passed _____, 20____

**A RESOLUTION AFFIRMING KEY PUBLIC INFRASTRUCTURE
IMPROVEMENT PROJECTS IN THE SCIOTO RIVER CORRIDOR
AREA OF THE BRIDGE STREET DISTRICT AND DIRECTING
THE ADMINISTRATION TO PROCEED WITH THE FINAL
DESIGN OF VARIOUS PUBLIC IMPROVEMENTS**

WHEREAS, since 2010, the Dublin City Council has prioritized the implementation of the Bridge Street District plan through their annual goal setting to reinforce the City's competitiveness, create a vibrant and walkable environment with a dynamic mix of land uses and housing types, and enhance the City's long-term sustainability; and

WHEREAS, in late 2012, Dublin City Council determined the Scioto River Corridor area of the Bridge Street District would be the initial focus area for advancement of the City's implementation of the Bridge Street District due to the proximity to Dublin's vibrant Historic District, opportunities to expand access to and engage the riverfront, the significant number of important capital projects and needs being planned for this area, and the potential for exciting new mixed-use development projects proposed by private development interests to establish an expanded civic core at the heart of the Bridge Street District; and

WHEREAS, at a Joint Session of City Council and the Planning and Zoning Commission on January 17, 2013, initial concepts for an urban design framework were presented as a product of the Scioto River Corridor planning efforts; and

WHEREAS, the concepts for an urban design framework identified key public projects within the Scioto River Corridor, including the realignment of Riverside Drive, a new riverside park, a roundabout at the intersection of Riverside Drive and Bridge Street/State Route 161, and an iconic pedestrian bridge connecting the Historic District with the riverside park and new development opportunities on the east side of the Scioto River; and

WHEREAS, in the spring of 2013, the City of Dublin proceeded with the preliminary engineering and more advanced planning for these catalytic public improvements; and

WHEREAS, the urban design framework also identified a future vehicular bridge between the existing I-270 and Bridge Street bridges at the location of the new John Shields Parkway intersection with Riverside Drive; and

WHEREAS, these key public improvements and urban design concepts were reaffirmed by the Dublin City Council and incorporated into the Bridge Street District area plan and Thoroughfare Plan within the updated Dublin Community Plan as adopted on July 1, 2013; and

WHEREAS, the Dublin City Council approved the City's Five-Year Capital Improvements Program on September 9, 2013, which included funding for the key capital projects identified for the Scioto River Corridor, including the pedestrian bridge, the State Route 161/Riverside Drive roundabout, the realignment of Riverside Drive, and the initial development of parkland along the Scioto River; and

WHEREAS, the Scioto River Corridor planning and design efforts have indicated that the construction of a new north-south roadway connection from Tuller Ridge Drive to Dale Drive is necessary as a critical prerequisite to facilitate vehicular traffic flow during the construction of the State Route 161/Riverside Drive roundabout; and

WHEREAS, the products and outcomes of the preliminary engineering and urban design of the public improvements and private development concepts for the Scioto River Corridor were shared with the public at a Community Forum held on October 22, 2013 at the OCLC Conference Center; and

RECORD OF RESOLUTIONS

Dayton Legal Blank, Inc., Form No. 30045

17-14

Page 2 of 2

Resolution No. _____

Passed _____, 20____

WHEREAS, the Dublin City Council desires to advance these and other related capital projects to the preparation of final construction plans and drawings to continue implementation efforts toward realizing the plans for the Bridge Street District.

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Dublin, 4 of its elected members concurring, that:

Section 1. The Dublin City Council hereby affirms and approves the key Scioto River Corridor capital improvements, including:

- a. The location and general realignment of Riverside Drive as depicted in EXHIBIT A, generally located from Dale Drive to Tuller Road;
- b. The location and general alignment of the State Route 161/Riverside Drive roundabout as the preferred alternative for addressing the design and capacity issues associated with this important intersection, as depicted in EXHIBIT A;
- c. The conceptual design and general location of landing points for an iconic pedestrian bridge, subject to additional refinement in planning and design studies, as depicted in EXHIBIT A; and
- d. The location of a future vehicular bridge over the Scioto River as part of future phases of John Shields Parkway, in lieu of an additional vehicular bridge crossing adjacent to the pedestrian bridge, as depicted in EXHIBIT A.

Section 2. The Dublin City Council further directs the City's Administration to:

- a. Proceed with the final design of the following Bridge Street District Scioto River Corridor public improvement projects included within the current 2014-2018 Capital Improvements Program, with design completed by the end of 2014:
 - i. State Route 161/Riverside Drive roundabout;
 - ii. Realigned Riverside Drive; and
 - iii. Grading and utilities plans for the proposed new park area along the east side of the Scioto River.
- b. Continue to evaluate and refine final design, costs, and landing options for the Scioto River pedestrian bridge, and develop alternatives for consideration as soon as possible.
- c. Prepare options for streetscape and furnishing standards for roadways within the Bridge Street District and finalize the authorized project designs by the end of 2014.
- d. Proceed with design of the Tuller Ridge/Dale Drive connector, as depicted in EXHIBIT A, including preparing the final construction plans, right-of-way acquisition documents, and advance all other related actions necessary to initiate the construction of this key roadway connection in 2014, and prepare for Council the appropriate amendments to the 2014-2018 Capital Improvement Program to include this project.

Section 3. This Resolution shall take effect upon passage in accordance with Section 4.04(a) of the Revised Charter.

Passed this 10th day of March, 2014.



Mayor – Presiding Officer

ATTEST:



Clerk of Council



To: Members of Dublin City Council

From: Marsha I. Grigsby, City Manager *mg*

Date: March 6, 2014

Initiated By: Terry D. Foegler, Director of Strategic Initiatives/Special Projects

Re: Resolution 17-14 Affirming Key Public Infrastructure Improvement Projects in the Scioto River Corridor Area of the Bridge Street District and Directing the Administration to Proceed with the Final Design of Various Public Improvements / Bridge Street District Follow Up Items

Background

At the February 28 Goal Setting Retreat, Council discussed a number of items related to planned public projects and emerging private development opportunities in the Bridge Street District. Council members expressed interest in scheduling one or more work sessions to review additional information, discuss remaining policy questions and provide further direction to staff as implementation efforts proceed. This memo outlines the major topics for consideration as follow up discussion items and provides recommendations on prioritization and timing for addressing these topics.

Design Expectations

Council expressed a desire to develop tools and/or processes to help better communicate and align Bridge Street District planning and design expectations among key participants in the development process (project developers/designers, staff, Planning and Zoning Commission and Council). Staff recommends that Council hold a work session to establish shared expectations for project design and architecture in key locations within the Bridge Street District. To provide clear and timely direction for applicants currently moving through the development review process and for others interested in pursuing near term development opportunities, staff recommends a work session be held as soon as is convenient for Council. Staff will be prepared to offer potential meeting dates for Council's consideration at the March 10th Council meeting.

Project Review for Development Agreements

Due to the amount of public street infrastructure necessary to create the grid system in the Bridge Street District, most of the key private development projects will require partnerships with the City in order to move forward. City Council will thus have substantial discretion to provide significant oversight regarding which projects achieve the City's goals and vision for the BSD and therefore should be advanced through City partnership. For this reason, it is appropriate to ensure early Council understanding and general support of proposals that will involve development agreements with the City, prior to extensive planning and design investment by prospective applicants. Opportunities for such Council input and reaction are not currently provided within existing development review procedures for the BSD. To facilitate an efficient and predictable review

process, staff will prepare options to better incorporate Council into the early stages of the process, and will present these for Council's consideration at an upcoming meeting.

As noted above, because there are currently development applications moving through the established review process, staff recommends that City Council schedule a work session in the coming weeks, in lieu of a more formal Council review process that will be proposed.

Public Projects

At its Retreat, Council discussed the scope and timing of major public infrastructure improvements, primarily located in the Scioto River Corridor planning area, as well as other portions of the street network that will be constructed with individual private development projects. As part of that discussion, Council directed staff to prepare a resolution affirming key public infrastructure improvements and directing the Administration to proceed with final design of those projects. Resolution 17-14 is attached to this memo for Council consideration.

In addition, staff will provide information at future meetings on the progress of other facets of planned public improvements planning efforts, including:

- An overview of the Bridge Street District Transportation Phasing Plan (nearing completion)
- Illustrative simulation showing how the Riverside/SR 161 roundabout will function
- Creation of streetscape character and furnishings standards for new streets in the BSD (this is necessary to complete the final design of the new public streets)
- Additional refinement of the pedestrian bridge design and potential construction methods
- Maintenance of traffic plans related to the realignment of Riverside Drive and construction of Riverside/SR 161 roundabout
- Remaining land acquisitions need to construct new roadways

Staff recommends presenting this information as it becomes available as an agenda item at regular Council meetings. If Council prefers, separate work sessions can subsequently be scheduled to focus on one or more of these items in greater depth.

Recommendation

Staff recommends adoption of Resolution 17-14 at the March 10th Council meeting. Staff also recommends Council schedule its first work session within the next month to provide timely direction of architectural and design expectations for pending development proposals. Staff will follow up with additional information regarding the other items noted in this memo, and will schedule additional work sessions as directed.



 City of Dublin	CITY OF DUBLIN BRIDGE STREET DISTRICT EXHIBIT A
DATE: March 5, 2014	
SCALE: 1" = 150'	
JOB NO.: 20130451	
SHEET: 1 of 1	

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Attachment B

Pedestrian Bridge Expenses-Encumbrances to Date

	Contracted		Paid to Date
Paul Endres original fee for preliminary concept development, as part of MKSK River Corridor Framework Plan (2012)	\$21,500.00	\$	21,500.00
Paul Endres preliminary bridge design and cost reduction analyses (2012-14)	\$289,600.00	\$	289,600.00
Burgess & Niple led third party review, cost estimating and value engineering (2013-14)	\$245,325.00	\$	245,325.00
TY Lin validation and final design (2016)	\$2,628,874.65	\$	792,836.19
Genesis Structures Independent Design Checker	\$158,880.00	\$	-
Land Acquisition *	\$0.00	\$	-
Total	\$3,344,179.65	\$	1,349,261.19

* (no land acquired for pedestrian bridge; all river fronting land purchased as park land)

June 30, 2016

Mandy K. Bishop, PE, SI
City of Dublin
Bridge Street District Consultant
5800 Shier Rings Road
Dublin, OH 43016

Re: Iconic Scioto River Pedestrian Bridge – **Aesthetic Bridge Lighting**
(Follow up to 06/20/16 Public Meeting)

Introduction

Lighting Design Alliance (LDA), along with T.Y. Lin International Group (TYLI) and Endres Studio (ES), have coordinated a Lighting Design Package for the Iconic Scioto River Pedestrian Bridge for the City of Dublin (City). The Package consists of three (3) Levels of Aesthetic Lighting which consist of; **(A) Primary Level, (B) Intermediate Level, (C) Digital Level**. The three levels are summarized below as agreed upon by TYLI, ES, and the Project Team.

A. Primary Level

The features of the **Primary** Level of lighting is presented below:

- 1- Walkway/Handrail LED Lighting
- 2- Upper Pylon Keyhole lighting
- 3- Lower Pylon Keyhole lighting
- 4- Linear strip-lighting along the vertical pylon element
- 5- Floodlights near ground level for Pylon Primary

The estimated cost for the **Primary** Level of lighting is approximately **\$178,000** which includes the cost for light fixtures, lighting control system, installation, materials, fixture supports, wiring, power supplies and drivers, etc.

B. Intermediate Level

The **Intermediate** Level of lighting includes all elements identified in the Primary Level listed above, as well as the following:

- 1- Hanger Cable Color Changing Lights
- 2- Linear Box Girder Up-Lighting

The estimated cost for the **Intermediate** Level of lighting (which includes the **Primary** Level cost) is approximately **\$728,500** which includes the cost for light fixtures, lighting control system, installation, materials, fixture supports, wiring, power supplies and drivers, etc.

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C. Digital Level

The **Digital** Level of lighting includes all elements identified in the **Primary** Level and **Intermediate** Level as listed above, with the modification of Hanger Cable Lighting as identified below:

- 1- Low Resolution Digital Lighting in replacement of Hanger Cable Color Changing Lights

The estimated cost for the **Digital** Level of lighting (which includes the **Intermediate** Level and **Primary** Level cost) is approximately **\$1,300,000** which includes the cost for light fixtures, lighting control system, installation, materials, fixture supports, wiring, power supplies and drivers, etc.

Recommendation

It is the recommendation of the Project Team and LDA to the City to implement the **Intermediate** Level of Aesthetic Bridge Lighting. This Level of lighting will add visual interest to the entire bridge structure from the Primary, all the way up the highest point of the needle element of the Pylon. For the hanger cables the **Intermediate** Level of lighting gives the City the flexibility to program custom color changing lighting sequences. The ability to program basic color shows provides more than enough lighting to highlight the bridge at night and further provide flexibility during select special events.

We do not recommend the **Digital** Level of Aesthetic Bridge Lighting as it comes at a significant cost to the Project which is not worth the marginal increase in programmability for each of the hanger cable lighting fixtures.

The three levels of lighting (**Primary, Intermediate, and Digital**) are described in further detail in the following pages labeled "**Aesthetic Lighting Level Detail**" which identify key aspects of each lighting element including a descriptive narrative of lighting intent to the use as well as its location, programmability, maintenance and access, service life, and fixture costs.

AESTHETIC LIGHTING LEVEL DETAIL

A. Primary Level

The **Primary** Level lighting consists of lighting the features of the bridge the group identifies as essential for the bridge to be used during evening and night hours. The Primary Level provides Walkway and Pylon illumination including the bottom (below deck, vertical (above deck) and “keyhole’ features. Detailed discussion for each lighting element is provided below:

1- Walkway/Handrail LED Lighting:

- LED strip-lights are integrated into the handrail on each side of the bridge along the entire span of the walkway with a mounting channel, angle, and optics to direct light out to illuminate the entire width of the walkway.
- Create a safe environment for pedestrians to walk and enjoy the bridge.
- Fixtures to be operated with an astronomical time clock to only be operated during evening and nighttime, when illumination is needed. As the fixtures are for safety lighting, we are recommending the fixtures to be at a high consistent light output to be operated from dusk until dawn.
- For fixture life, we are estimating that the linear strip-lights to have an estimated 10 year life of the fixture itself, and 5 years life of the drivers with minimal maintenance to the fixtures.
- The fixture locations make them very easy to maintain from the deck. The fixtures will have remote drivers, so these would have to be located in an accessible location in the deck that has a well ventilated and waterproof enclosure.
- The current year costs for these light fixtures are estimated to be **\$76,000** not including labor and incidentals to install/replace the fixtures.

2- Upper Pylon Keyhole Lighting (Illuminates inner top portion of the needle from lights installed in the bridge deck):

- Fixtures will be recessed in the walkway of the bridge, only along the center area under the archway, illuminating upwards to light the inner surfaces of the structure.
- The benefit to the fixtures being recessed in the walkway is they will provide a clean lighting design by not having the light fixtures visible.
- Fixtures to be operated with an astronomical time clock so that the fixtures turn on during the start of the evening and turn off when the sun is out. As the fixtures are more decorative lighting, we are recommending the fixtures to be set to two different light outputs. From dusk until 1am we recommend a high light output. From 1am until dawn we recommend the fixtures to be set to a low light output, as there will be fewer people experiencing the bridge at these times, and it will save on energy usage and will increase the life of the fixtures.

- The fixture locations make them very easy to maintain from the deck. The fixtures will have integral drivers, so to maintain the drivers, the top of the fixture will have to be able to be removed from above for access.
- For fixture life, we are estimating that the up-light fixtures have an estimated 15 year life of the fixture itself, and 5 year life of the driver with minimal maintenance to the fixtures.
- The fixture locations make them very easy to maintain from the deck. The fixtures will have integral drivers, so to maintain the drivers, the top of the fixture will have to be able to be removed from above for access.
- The current year costs for these light fixtures are estimated to be **\$9,800** not including labor and incidentals to install/replace the fixtures.

3- Lower Pylon Keyhole lighting (Illuminate the inner, bottom portion of the needle from lights installed in the bottom sides of the box girder):

- Fixtures will be recessed within the bottom portion of the box girder illuminating downwards to light the inner surfaces of the structure.
- The benefit to the fixtures being recessed in the box girder, is that they will provide a clean lighting design, by not having the light fixtures visible.
- Fixtures to be operated with an astronomical time clock, so that the fixtures turn on during the start of the evening, and turn off when the sun is out. As the fixtures are more decorative lighting, we are recommending the fixtures to be set to two different light outputs. From dusk until 1am we recommend a high light output. From 1am until dawn we recommend the fixtures to be set to a low light output, as there will be fewer people experiencing the bridge at these times, and it will save on energy usage and will increase the life of the fixtures.
- For fixture life, we are estimating that the up-light fixtures have an estimated 15 year life of the fixture itself, and 5 year life of the driver with minimal maintenance to the fixtures.
- For maintaining the fixtures, as they are below the deck, inside of the box girder, we recommend having an access panel at the top of the deck to go inside the structure if necessary to maintain the fixtures and integral drivers.
- The current year costs for these light fixtures are estimated to be **\$8,400** not including labor and incidentals to install/replace the fixtures.

4- Linear Strip-Lighting along the Vertical Pylon Element (Illuminate the vertical channel of the needle element by having a light channel on both sides of the vertical opening):

- Linear LED strip-light will be mounted in that channel to illuminate the face of the vertical surface.
- Creates a clean line of light that will accent the architecture of the pylon form.
- Fixtures to be operated with an astronomical time clock, so that the fixtures turn on during the start of the evening, and turn off when the sun is out. As the fixtures are more decorative lighting, we recommend the fixtures to be set to

two different light outputs. From dusk until 1am we recommend a high light output. From 1am until dawn we recommend the fixtures to be set to a low light output, as there will be fewer people experiencing the bridge at these times, and it will save on energy usage and will increase the life of the fixtures.

- For fixture life, we are estimating that the up-light fixtures have an estimated 15 year life of the fixture itself, and 5 year life of the driver with minimal maintenance to the fixtures.
- For maintaining the fixtures, as they are located along the entire vertical height of the main needle element, the fixtures themselves would have to be accessed by use of a man-lift, or equivalent, to reach the higher fixtures. The fixtures will have remote drivers, so these would have to be located in an accessible location in the deck that has a well ventilated and waterproof enclosure.
- The current year costs for these light fixtures are estimated to be **\$8,700** not including labor and incidentals to install/replace the fixtures.

5- Floodlights near Ground Level for Pylon Primary (Illuminate Primary of Pylon “Needle” Element):

- Provides adjustable floodlights, mounted at the Primary of the center structural pylon, to up-light the Primary.
- As the pylon is located near the river’s edge, the design team recommends raising these fixtures on an inverted column on both sides of the pylon, where we would mount adjustable floodlights to illuminate the structure.
- Fixtures to be operated with an astronomical time clock, so that the fixtures turn on during the start of the evening, and turn off when the sun is out. As the fixtures are more decorative lighting, we are recommending the fixtures to be set to two different light outputs. From dusk until 1am we recommend a high light output. From 1am until dawn we recommend the fixtures to be set to a low light output, as there will be fewer people experiencing the bridge at these times, and it will save on energy usage and will increase the life of the fixtures.
- For fixture life, we are estimating that the up-light fixtures have an estimated 15 year life of the fixture itself, and 5 year life of the driver with minimal maintenance to the fixtures.
- For maintaining the fixtures, as they are located at the Primary of the pylon, in the planting area, the column locations will have to be coordinated in the field. There is also the potential for the column locations to be in areas where there could be water around it, so that might impact the accessibility of maintenance for the floodlight fixtures.
- The current year costs for these light fixtures are estimated to be **\$10,800** not including labor and incidentals to install/replace the fixtures.

B. Intermediate Level

The **Intermediate** Level lighting consists of all elements identified in the **Primary** Level above as well as the additional features summarized below. The Project Team and LDA strongly believe the **Intermediate** Level will be influential in creating a strong visual feature at night but not as influential and important as the features associated with the **Primary** Level. Not every element has to be implemented in the final design, but we recommend including as many of the elements as possible as we understand one of the goals of this Project is to maximize the overall night time visual interest in varying ways.

1- Hanger Cable Color Changing Lights:

- The most impactful visual element is the linear LED strip-light fixtures that will be mounted to the front and back sides of the each vertical hanger cable (approximately 38 cables).
- The vertical fixtures creates a strong lighting element that can be enjoyed by the pedestrian level experience, but it will be even more impactful when viewed from a distance.
- The lighting feature helps further activate the bridge at night, highlighting even more of the unique design elements of the structure.
- The fixture is a dynamic color changing fixture which integrates a Red, Green, and Blue (RGB) – module into the fixture. We recommend the fixture to be placed on the front and back side of each of the 38 hanger cables.
 - Provides the City with a flexible system to create color shows. These shows could include color fades, color chasing, radiating color from the center or sides, etc. Additionally the City also has the option to have the bridge illuminated in a static color, for holiday lighting (e.g. green and red for Christmas, orange for Halloween), school or team colors, or for certain remembrances (e.g. pink for breast cancer awareness month).
 - Color variations for this approach only occur in horizontal patterns among the cable strands, but is fully programmable by using a DMX system.
- Fixtures to be operated with an astronomical time clock through a DMX system, so that the fixtures turn on during the start of the evening, and turn off when the sun is out. As the fixtures are more decorative lighting, we are recommending the fixtures to be set to two different light outputs. From dusk until 1am we recommend a high light output. From 1am until dawn we recommend the fixtures to be set to a low light output, as there will be fewer people experiencing the bridge at these times, and it will save on energy usage and will increase the life of the fixtures. The DMX system would run the different programmed sequences once turned on from the astronomical time clock.
- For fixture life, we are estimating that the strip-light fixtures to have an estimated 15 year life for the fixture itself, and a 5 year life of the driver with minimal maintenance to the fixtures.

- For maintaining the fixtures, as they are located along the entire vertical height of the hanger cable, the fixtures themselves would have to be accessed by use of a lift to reach the higher fixtures. The fixtures will have remote drivers, so these would have to be located in an accessible location in the deck that has a well ventilated and waterproof enclosure.
- The current year costs for these light fixtures are estimated to be **\$85,600** not including labor and incidentals to install/replace the fixtures.

2- Linear Box Girder Up-Lighting

- To create an even lighting effect on the underside of the box girder, we recommend a continuous light channel suspended from the bottom of the box girder.
- The channel will follow the curve of the bridge. The lens of the fixture will be facing upwards to light the underside of the element from a single light source.
- The fixture gives additional visible light to the structure, as we are creating an illuminated vertical surface that will highlight the structure of the bridge below the deck. It will also help define the bottom of the bridge in the space, so that it does not appear like the hanger cables and the needle element are floating in the visual space.
 - It will give visual interest to the bridge when viewed from afar, as the overall surface will be visible from views from afar.
 - It will also be visible when you walk across, as the bridge is curving in front of you, which will give you views of the lighting effect.
- Fixtures to be operated with an astronomical time clock, so that the fixtures turn on during the start of the evening, and turn off when the sun is out. As the fixtures are more decorative lighting, we recommend the fixtures to be set to two different light outputs. From dusk until 1am we recommend a high light output. From 1am until dawn we recommend the fixtures to be set to a low light output, as there will be fewer people experiencing the bridge at these times, and it will save on energy usage and will increase the life of the fixtures.
- For fixture life, we are estimating the strip-light fixtures to have an estimated 15 year life for the fixture itself, and a 5 year life of the driver with minimal maintenance to the fixtures.
- Fixture maintenance - as they are located along the entire bottom portion suspended below the box girder, they will be difficult to maintain. The underside of the box girder would have to be cleaned eventually, so we anticipate that there would be a system put in place of a window-washing type apparatus put in place that could give access below the bridge. The fixtures will have remote drivers, so these would have to be located in an accessible location in the deck that has a well ventilated and waterproof enclosure.
- The current year costs for these light fixtures are estimated to be **\$266,000** not including labor and incidentals to install/replace the fixtures.

C. Digital Level

The **Digital** Level lighting consists of all elements identified above in the **Primary** Level and **Intermediate** Level's, however the difference would be using a Low Resolution Video solution in place of the RGB Hanger Cable Lighting.

1- Low Resolution Digital Lighting:

- The Digital lighting option would integrate a Low Resolution Video solution onto the front and back side of each of the 38 hanger cables in place of the RGB Hanger Lighting as described in the **Intermediate** Level.
- Low Resolution Video solution provides the city with a very flexible system to create higher level shows than the RGB color changing system.
 - Shows could include scrolling letters (e.g. team name scrolling across the cable strands or other images moving across the bridge), it could have moving shapes and pattern sweeps, star bursts, etc.
- Reliability: given the variable angles and length of the cable strands, and the S shaped nature of the bridge itself, the appearance or readability of such shows may be limited or disrupted from many perspectives or vantage points and LDA does not recommend this enhancement.
- This enhancement comes at a much higher cost to the project, adding over **\$600,000** to the **Intermediate** Level.

