


**TO:** Michael C. Van Milligen, City Manager

**FROM:** Gus Psihoyos, City Engineer 

**SUBJECT:** Upper Bee Branch Creek Railroad Culverts Project, Initiate Bidding and Set Public Hearing [CIPs 2642769, 7202769, and 3402769]

**DATE:** December 13, 2018

### **INTRODUCTION**

The purpose of this memo is to seek authorization to initiate the bidding process and set a public hearing for the Upper Bee Branch Creek Railroad Culverts Project (Project), the final contract associated with the Upper Bee Branch Creek Restoration Project (Phase 7 of the Bee Branch Watershed Flood Mitigation Project).

### **BACKGROUND**

Since 1999 there has been six Presidential Disaster Declarations which included the Bee Branch Creek Watershed. The Drainage Basin Master Plan, completed and adopted by the City Council in 2001, established that there are more than 1,100 properties at risk of flood damage as a result of the flash flooding. Based on a subsequent study in 2009 by the Federal Emergency Management Agency (FEMA), there are 1,373 properties in the flood prone area. In addition to homes, there are over 70 businesses in the at-risk area with over \$500 million in annual sales. Eighty-five percent (85 %) of the impacted properties have buildings that are potentially eligible for listing on the National Register of Historic Places, the official list of the Nation's historic places worthy of preservation. In fact, fifty-seven percent (57%) of the buildings are more than 100 years old. The flood prone area in the Bee Branch Watershed encompasses historic neighborhoods offering some of the community's most affordable workforce housing. Most residents are working families, many are elderly -- those least likely to recover from repetitive flood loss. Repetitive flood damage leads to disinvestment; from 2004 to 2009, while commercial property values grew by 39% citywide, they fell by 6% in the Bee Branch Watershed flood prone area.

Since 2001, the City has implemented many of the improvements outlined in the Drainage Basin Master Plan. But since 2001 several intense, storm events have occurred in the Dubuque metropolitan area so that revisiting the predicted hydrology and hydraulic behavior of the Bee Branch Watershed was appropriate. Over a twelve year period starting in 1999, there have been three 100-year storms, two 50-year storms, one 25-year storm, and one 10-year storm. Finally, it is important to consider how additional flood mitigation efforts undertaken by the City since 2001 fit with the

overall effort to mitigate flooding. Therefore, work began to update/amend the Drainage Basin Master Plan.

On November 18, 2013 the City Council passed Resolution 335-13 adopting the 2013 Drainage Basin Master Plan Amendment. The 2013 Amendment did not replace the 2001 Drainage Basin Master Plan. Instead, it built upon its foundation. The amended Drainage Basin Master Plan outlined several improvements throughout the Bee Branch watershed to mitigate the effects of future flooding and disasters. Collectively, the improvements form the basis of the Bee Branch Watershed Flood Mitigation Project outlined in Table 1 below.

**Table 1. Twelve phases of the Bee Branch Watershed Flood Mitigation Project**

Phase	Description	
1	Carter Road Detention Basin	Complete
2	West 32 <sup>nd</sup> Street Detention Basin	Complete
3	Historic Millwork District	Complete
4	Lower Bee Branch Creek Restoration	Complete
5	Flood Mitigation Gate Replacement	
6	Impervious Surface Reduction (Green Alleys)	Under Construction
7	Upper Bee Branch Creek Restoration	Partially Complete*
8	22 <sup>nd</sup> Street Storm Sewer Improvements	Under Construction
9	Flood Mitigation Maintenance Facility	
10	North End Storm Sewer Improvements	
11	Water Plant Flood Protection	
12	17 <sup>th</sup> Street Storm Sewer Improvements	Under Construction

\*Upper Bee Branch Creek Restoration Project includes improvements through the railroad property at 506 Garfield Avenue also known as the Upper Bee Branch Creek Railroad Culverts Project

The Bee Branch Watershed Flood Mitigation Project will prevent an estimated \$582 million in damages over the 100-year design life of the project. Due to the contributions of local, state, and federal funding partners, Dubuque citizens will see a return on their investment of more than \$8 for each \$1 spent.

The Bee Branch Watershed Flood Mitigation Project represents a multi - phased, fiscally responsible investment. It reflects a holistic approach to mitigate flooding as it will also improve water quality, stimulate investment, and enhance the quality of life of watershed residents.

On December 4, 2013, the Iowa Flood Mitigation Board voted to approve the City's use of \$98,494,178 for the Bee Branch Watershed Flood Mitigation Project. This funding will allow much of the protection to be provided over the next six years, instead of over the next 20 years (only some of the 240 alleys will take up to 20 years). On February 3, 2014 the City Council adopted Resolution 31-14 authorizing the execution of an agreement with the State of Iowa Flood Mitigation Board and authorizing the City's use of sales tax increment funding for the Bee Branch Watershed Flood Mitigation Project.

In December of 2004, the City Council adopted the alignment for the Bee Branch Creek Restoration Project based on the work and recommendation of the Bee Branch Citizen Advisory Committee. The adopted alignment crossed the railroad yard at 506 Garfield Avenue now owned by Canadian Pacific.

In August of 2008, the City Council authorized the hiring of Strand & Associates (Madison, WI), in association with IIW Engineers (Dubuque, IA) and Ken Saiki Design (Madison, WI), to prepare the final design of the Bee Branch Creek Restoration Project which included the section through the railroad property at 506 Garfield Ave.

CP's January of 2015 response was considered a conditional approval of the design, citing four minor issues for the City to address. The improvements conditionally approved by CP are shown in Figure 1.

While the City was in a position to move forward negotiating a Construction Agreement with CP and possibly moving forward with the improvements through CP property, doing so would have delayed the upstream improvements such that the City would risk the loss of \$4 million in grant funding (EDA, IDOT, & RECAT). Therefore, the City proceeded with completing the Upper Bee Branch Creek project upstream of the railroad property.

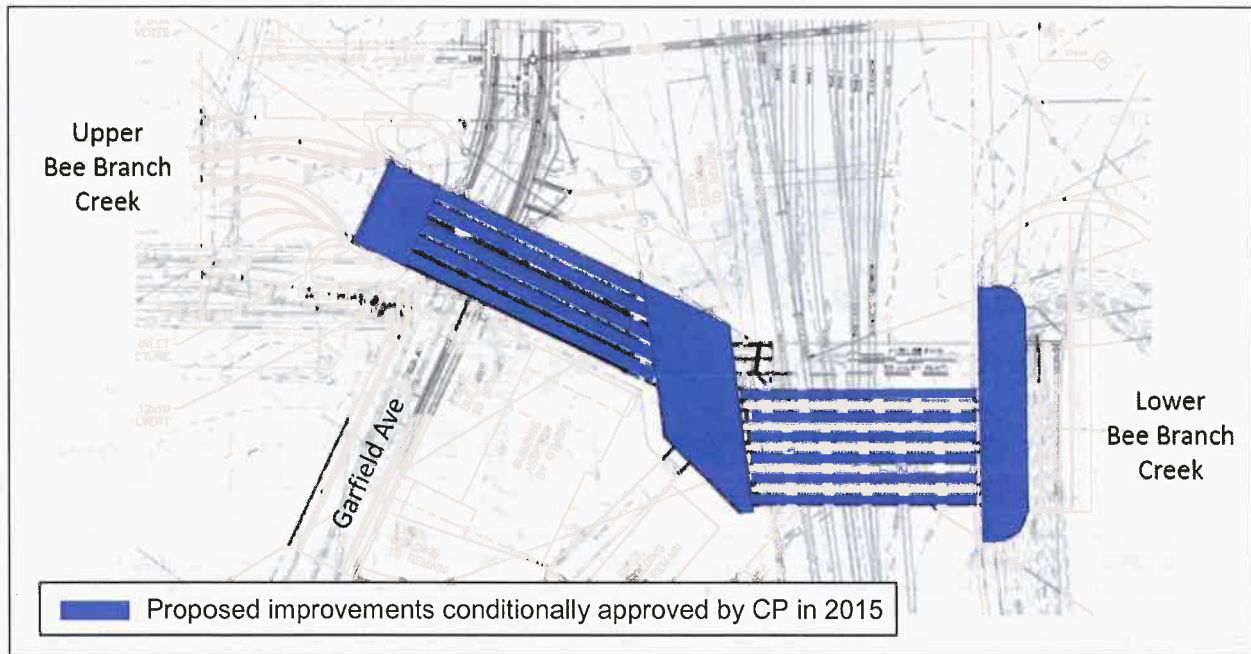


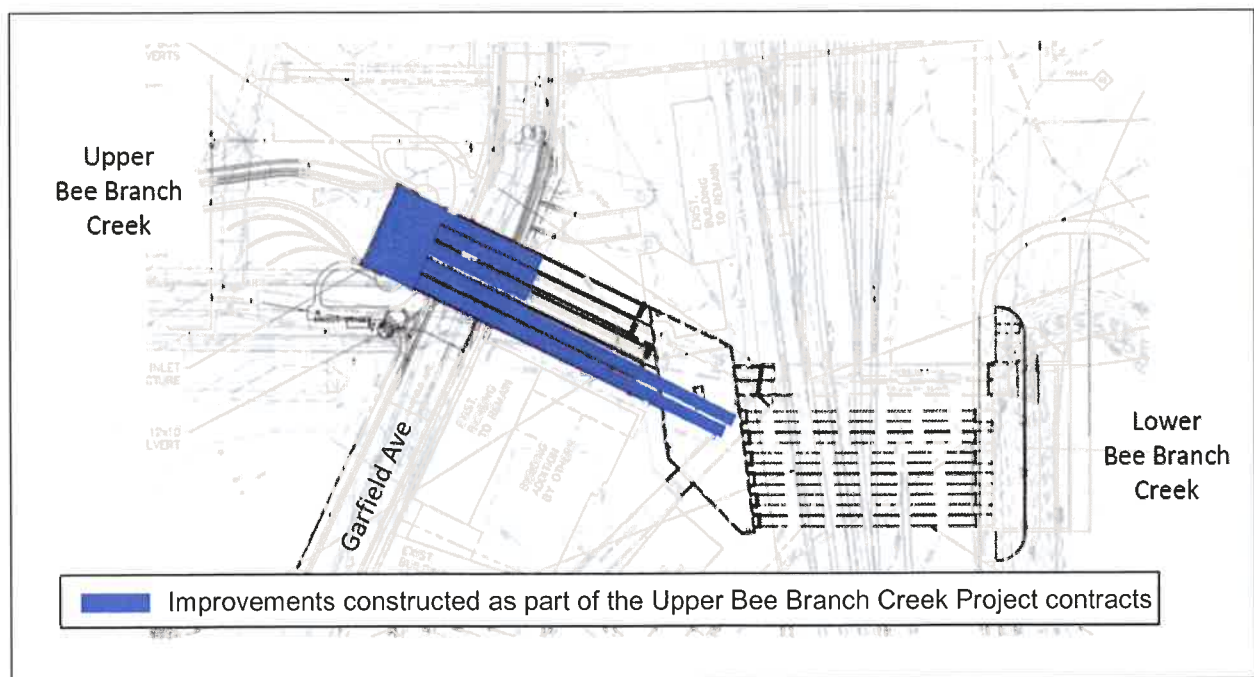
Figure 1. Extent of improvements conditionally approved by CP in early 2015.

Completed through multiple contracts, again due to funding, the City proceeded with the construction of the Upper Bee Branch Creek Restoration Project. In May of 2015, the City Council adopted Resolution 176-15 awarding the contract for the Upper Bee Branch Creek – Channel, Streets, & Utilities Project. In May of 2015, the City Council adopted Resolution 177-15 awarding the contract for the Upper Bee Branch Creek – Structures Project. In October of 2015, the City Council adopted Resolution 351-15

awarding the contract for the Upper Bee Branch Creek Mississippi River Trail Project, the third contract associated with the Upper Bee Branch Creek Restoration Project. In December of 2015, the City Council adopted Resolution 422-15 awarding the contract for the Bee Branch Creek Basin Overlook & 22<sup>nd</sup> Street Parking Lot Project, the fourth and final contract associated with the Upper Bee Branch Creek Restoration Project. The improvements were substantially complete by July of 2017.

One of the consequences of moving forward with the construction of improvements upstream of CP property is that some of the improvements that were to be constructed as part of the plans previously reviewed by CP were constructed as part of the Upper Bee Branch Creek Restoration Project. Figure 2 shows a few of those elements. Therefore, the plans and specifications (bidding and construction documents) for the improvements through CP property needed to be reworked and re-designed to a certain extent to reflect the improvements in place as a result of the Project.

Because of the improvements now in place, the size and nature of some of the improvements previously required are no longer necessary. For example, the transition structure and the level control structure could be reduced in size which would result in cost savings.



**Figure 2. Improvements previously reviewed as part of the improvements through CP property that were constructed as part of the Upper Bee Branch Creek Restoration Project.**

In April of 2015, the City Council authorized a partnership with Iowa Economic Development Authority (IEDA) regarding the State's submission of the first phase of the competition to secure US Department of Housing and Urban Development (HUD) National Disaster Resilience Competition (NDRC) funding. The hope was to secure funding to help mitigate the flooding in the Bee Branch Watershed. Based on the first phase application, IEDA (and the City) was invited to proceed to phase II of the

competition. In November of 2015, the City Council authorized the submission of an application for HUD NDRC funding for the (Upper) Bee Branch Railroad Culvert Infrastructure Improvements.

In January 2016, the State was awarded \$95.7 million in HUD National Disaster Resiliency Competition grant funds. Per the award, the City of Dubuque is to receive \$8.4 million for a comprehensive "Bee Branch Healthy Homes Resiliency Program" to help residents address residual impacts from the flooding experienced within the Bee Branch Watershed. The City is also to receive \$23.1 million for storm water infrastructure improvements associated with the Bee Branch Watershed Flood Mitigation Project. The infrastructure improvements included the (Upper) Bee Branch Railroad Culvert Infrastructure Improvements through Canadian Pacific property at 506 Garfield Ave.

In order to remain eligible for the HUD funding for the Bee Branch Railroad Culvert improvements, the City had to delay moving forward towards developing the final design of the improvements or move forward with acquiring property necessary for the project. The City first had to wait until a grant agreement was in place. In addition, the City had to follow the HUD rules and regulations as they relate to procuring engineering and legal services.

In October of 2016, the City Council adopted Resolution 362-16 authorizing the execution of a contract with the Iowa Economic Development Authority (IEDA) in order for the City to utilize \$23,293,253.00 in HUD National Disaster Resiliency Competition grant funds for the Bee Branch Watershed Flood Mitigation Project with \$9,000,000 specifically for the proposed culverts from the Lower Bee Branch Creek, through Canadian Pacific Railway property, to the Upper Bee Branch north of Garfield Avenue. This phase of the Bee Branch Creek Restoration Project is also referred to as the Bee Branch Railroad Culvert Infrastructure Improvements Project. The contract with IEDA requires that the City complete all of the improvements by June of 2021.

In March of 2017, in accordance with HUD requirements, the City executed a new contract with Strand to provide engineering design services as required for the Upper Bee Branch Railroad Culvert Infrastructure Improvements Project.

In June of 2017, the City Council authorized the hiring of Ahlers & Cooney law firm to provide legal services pertaining to the negotiations with CP and other property acquisitions necessary for the Bee Branch Railroad Culvert Infrastructure Improvements Project.

In July of 2017, the City and CP executed the Amended and Substituted Service Agreement reflecting the current approach to install the tunneled culvert system and establishing a new expiration date of December 31, 2018. Under the terms of the original agreement, the City paid CP \$100,499.56 for their reimbursable expenses. Per the amendment, both agreed that reimbursable expenses for CP services incurred after

December 30, 2014 shall not exceed \$50,000, unless agreed upon through a subsequent amendment.

## **DISCUSSION**

The Upper Bee Branch Creek Railroad Culverts Project (Project) represents the final contract associated with the Bee Branch Creek Restoration Project (Phase 4 & 7 of the Bee Branch Watershed Flood Mitigation Project). The improvements will allow for the efficient flow of floodwaters from the recently completed upper Bee Branch Creek improvements, through the railroad yard on Garfield Avenue, to the lower Bee Branch Creek.

Since 2007, the City has been corresponding with the owner of the Dubuque Works rail yard at 506 Garfield Avenue. During that time, ownership of the railroad changed hands two times. The current owner, Canadian Pacific Railway (CP), took control in 2010. For the past eight years, the City has attempted to design improvements through CP property such that the construction of the improvements would not “unreasonably interfere” with CP’s operation of their railroad. To that end, the Project involves the installation of six, 8-foot diameter culverts under the railroad tracks using tunneling methods. This will allow the railroad operation to continue unimpeded by the construction of the Project.

In addition to the culverts under the railroad tracks, the Project includes the extension of the box culverts installed under Garfield Avenue as part of the upper Bee Branch Creek improvements to a new buried junction chamber, or transition structure where the flow from the upper Bee Branch Creek will join with flow from the Bee Branch storm sewer from Pine Street. The combined flow will then flow under the railroad tracks through the tunneled pipes mentioned previously into the lower Bee Branch Creek. An outfall structure will be constructed where the water will flow into the lower Bee Branch Creek. This will include a headwall for the culverts, a flood gate with pump station to control the depth of water in the upper Bee Branch Creek, topped by a concrete pad that will allow access to the culverts and gate from above while also providing a plaza area for citizens to overlook the lower Bee Branch Creek. The Project also incorporates the existing box culverts underneath the railroad tracks into the flood control system. The design will allow the existing box culverts to serve dual functions: flood control and as a hike/bike path under the railroad tracks. A path will be graded down from Garfield Avenue to function as a spillway should floodwaters overflow within the upper Bee Branch Creek. But it will also serve as surface access to the existing box culverts for maintenance and for a public hike/bike path. In addition to retaining walls, the Project also includes lighting and security cameras.

The Project is being bid with four alternative bid items that could be awarded in the order listed. They are as follows:

Bid Alternate 1 - Additional Landscaping and Amenities  
Cost Estimate: \$159,639.00

While the base bid includes the establishment of a minimum amount of landscaping and vegetation, this bid alternative includes additional planters, a mulch path along the west side of the Bee Branch to 16<sup>th</sup> Street, additional bike racks, benches, where the new culverts will discharge into the Bee Branch Creek.

Bid Alternate 2 – Site Furnishings  
Cost Estimate: \$140,572.00

The additional site furnishings include shade structures and enhanced, architectural seating areas that would help create a sense of place at the new plaza area that will overlook the lower Bee Branch Creek.

Bid Alternate 3 – Trail and Additional Tunnel Modifications  
Cost Estimate: \$468,880.00

The base bid includes the work to grade and construct the necessary retaining walls that would allow for the use of the existing box culverts for both flood control and a hike/bike trail under the railroad tracks, connecting the lower and upper Bee Branch Creek trail systems. The Bid Alternative 3 improvements involve the actual construct the hike/bike trail, things such as paving the trail, improvements to the box culverts to make them suitable for a trail, and adding tunnel lighting and cameras.

Bid Alternative 4 – Sanitary Sewer Interceptor  
Cost Estimate: \$2,559,400.00

This involves the installation of a 36-inch diameter sanitary sewer from the lower Bee Branch Creek to the sewer on Garfield Avenue installed as part of the upper Bee Branch Creek construction project. Currently, the flow from the existing sanitary sewer flows under the box culverts on Garfield Avenue through a siphon. Construction of the new sewer will allow the City to eliminate the need for a siphon. This work can be bid as an alternate because it can be done at a later date based on funding availability.

### **PROJECT SCHEDULE**

The proposed schedule for the Project is as follows:

Initiate Public Bidding Process	December 17, 2018
Publish Notice to Bidders, Advertise for Bids	December 21, 2018
Publish Public Hearing Notice on Plans & Specs	December 21, 2018
Public Hearing on Plans & Specifications	January 7, 2019
Receipt of Bid Proposals (Bid Letting)	January 22, 2019
Award Construction Contract	February 4, 2019
Improvements Functional	Summer of 2020
Final Project Completion Date	June 30, 2021

**RECOMMENDATION**

I recommend that the City Council establish the date for the public hearing and authorize the City Clerk to advertise for proposals for the Upper Bee Branch Creek Railroad Culverts Project.

**BUDGET IMPACT**

The estimate of probable cost for Upper Bee Branch Creek Railroad Culverts Project is as follows:

Construction	\$25,582,982.00
Contingency (5%)	1,279,149.00
Property Acquisitions	410,000.00
Engineering	2,936,300.00
<b>Total Project Cost</b>	<b>\$30,208,431.00</b>

The project funding is summarized as follows:

<b>Funding Source</b>	<b>Amount</b>
HUD CDBG NDR Grant	\$10,563,823 <sup>1</sup>
U.S. EPA Clean Water SRF	16,300,000 <sup>2</sup>
State Sales Tax Increment Funding	2,629,949
State Sales Tax Increment Bond	714,659
<b>Total</b>	<b>\$30,208,431</b>

<sup>1</sup>Allocating \$10,563,823 of HUD funding to the railroad culvert improvements will leave \$12,536,177 for the 22<sup>nd</sup> & Kaufmann Storm Sewer Improvements Project and the 17<sup>th</sup> & W. Locust Street Storm Sewer Improvements Project which is \$1,563,823 less than planned such that it may impact the construction limits of these improvements.

<sup>2</sup>\$16.3 million is the maximum amount of SRF debt the City will utilize. Through the FY20 budget process, the City is looking at using stormwater utility fee revenue to minimize the amount of the SRF debt.

**ACTION TO BE TAKEN**

I respectfully request adoption of the attached resolution establishing the date of the public hearing on the plans, specifications, and estimated cost and authorizing the City Clerk to advertise for bids for the Upper Bee Branch Creek Railroad Culverts Project.

Attachments

Prepared by Deron Muehring

- cc: Crenna Brumwell, City Attorney
- Barry Lindahl, Senior Corporation Counsel
- Jenny Larson, Budget Director
- John Klostermann, Public Works Director
- Steve Brown, Project Manager
- Deron Muehring, Civil Engineer