



Memorandum

To: Mike Geisel, City Administrator
From: TW Dieckmann, Director of Parks, Recreation and Arts *TW Dieckmann*
Date: May 10, 2024
Subject: revised Railroad Park feasibility study

This memo is to provide the Parks, Recreation and Arts Committee of Council (PRAcc) more information about the revised Railroad Park feasibility study. At our last PRAcc meeting in February, the committee requested that we update the last study done in 2019 by city engineering staff.

Costs have been updated, but the plan has not changed as it previously contemplated the use of the donated land. I recommend forwarding this to the PRAcc for further discussion. Please let me know if you require additional information.

Please forward updated feasibility study to the PR&A Committee for their review. I recommend that the report be received and filed. No other action is required at this time.

Mike Geisel

2024-5-15

RAILROAD PARK FEASIBILITY NOTES

April 2024

GENERAL THOUGHTS/CONSIDERATIONS

Key Points:

- $\frac{3}{4}$ of the park property is in the FEMA-designated floodway
 - Any fill or structure in the floodway would be very challenging
 - Minimal area available to excavate for compensatory volume
 - No-Rise certification will be required for all work in floodway
- There would be no way to get haul trucks or heavy equipment across Bonhomme Creek without building a temporary construction bridge.
 - Existing low-flow crossing is too steep, grade breaks for trucks to cross
 - E.g. to deliver lumber, concrete trucks
 - Pre-cast Box culvert(s) or Con-Span
 - Only way to get any material delivery trucks across the creek
 - Included estimate does not include consideration for temp bridge
- No-Rise analysis would be required for construction of a pedestrian bridge across Bonhomme Creek and for a temporary construction bridge
- If utility extensions are required, they'd need to be bored under the levee or possibly installed over the top of the levee as directed by the Levee District and Army Corps of Engineers
 - This would lead to extra scrutiny by ACOE and longer review time
 - Work to go over the levee would likely add cost for filling and repaving the existing levee trail
 - The new potable water line at the west end of the Valley was required to go over the levee, not bored below.

West Side Access:

- Pedestrian bridge should begin on existing landside bench instead of top of levee.
 - Cannot breach net levee section
 - Existing bench elevation is roughly equivalent to east side of Bonhomme Creek elevation
 - Shorter bridge length
 - Top of levee is 10-15' higher than bench elevation, so pedestrian bridge would be too steep without significant fill on the east side of creek
 - Complicates ADA compliance
 - Karen Fredrich agreed that this would be a better location instead of installing bridge abutments in the levee itself
 - The concrete for the east side bridge abutment would need to be pumped across the creek since the low-flow crossing across the creek is likely too steep and too sharp of a grade brake for a concrete truck to traverse it.

- The most logical access point to the park would be in the vicinity of existing levee trail parking lot access connection to the top of levee
 - Parking at existing levee trail parking lot
 - Ramp down on the east side of the levee to the existing bench
 - May be constrained going south by the existing stormwater pump outfall pipes
 - Keep pedestrian bridge at least 200' away from pump house outfall
 - Outfall generates eddies that are eroding east bank of Bonhomme Creek
 - Ramp down would need approximately 250 LF of ramp down at 5% grade to pedestrian bridge due to ADA requirements
 - Access on the west end may conflict with the Conservation Easement
- Southwest corner of property & Long Road is not ideal due to ADA ramp requirement to get to the top the levee from the park
 - There is not a defined bench on the creek side of the levee, and there is 12' of elevation difference between the top of levee and existing ground on the east side of the creek.
 - Bridge piers would be in the levee slope
 - Access ramp would extend at least 100' into the park to meet ADA requirements, and it would require significant fill

Hydraulics/Floodplain

- $\frac{3}{4}$ of the park property is in the floodway.
 - Can not fill within the floodway without first performing an extensive hydraulic study to assure a “No-Rise” in the creek Base Flood Elevation
- Would need to do HEC-RAS No-Rise analysis for installation of a new pedestrian bridge across Bonhomme Creek and for temporary construction bridge, if one is ultimately included as part of the development of the park
 - Base Flood Elevation ~ 467.5
 - Bench Elevation on west side of Bonhomme Creek ~464, so bridge alone would likely cause a rise in BFE and the No-Rise analysis would need to include means to offset the potential rise
- Any fill or new structure(s) proposed in the park would need to be included in the No-Rise analysis
 - Minimal area available to excavate for compensatory volume due to presence of wetlands, location of site, difficult access, etc.
 - Would be very challenging

Army Corps of Engineers Permitting

- Army Corps of Engineers (ACOE) will be most concerned with how pedestrian bridge abutments will be built without threatening the structural integrity of the levee.
- Any impact proposed to the levee would require an ACOE 408 review

- A “simple” review, with minimal impact to the levee, could be done in the St. Louis office.
 - 6-12 month review time (estimate)
- A more complex review would need to be reviewed in STL office then also by the district office
 - 1-2 year review (estimate)
- ACOE would prefer the bridge to begin on the bench instead of the top of levee
 - Likely would simplify the review
- ACOE will do a thorough review of the bridge foundation plans
- Would require a No-Rise study
- Environmental Assessments would likely be required for the property on the east side of the creek
- It is likely that jurisdictional wetland impacts would have to be mitigated

Planning/Zoning

- Ordinance #1534 includes a concept plan, but no design guidelines

Ownership

- Current owner on east side of Bonhomme Creek is Lower Missouri River, LLC
 - Owner to donate property to City of Chesterfield.
 - Most of this property appears to be some type of manmade storage basin
 - According to SCI it is classified as wetlands
 - Impacts to wetlands would likely require wetland mitigation which has not been included in the cost estimate
- Ownership on west side of levee is Long Edison, LLC and Monarch-Chesterfield Levee District
 - Would likely need to acquire easements from these owners for west bridge abutment and access trail

Topography

- There is an existing bench on the creek side of the levee that is at approximately the same elevation as the east side of the creek bank.
 - This bench does not *appear* to be structural fill
 - Geotechnical analysis necessary
- How do we construct bridge abutments without jeopardizing the integrity of levee?
- Potential wetlands on the west side of the park, on east side of Bonhomme Creek
- Need to provide separation/protection/fence to keep kids, dogs, stray balls away from railroad tracks
- Proposed grading of park
 - Would need to minimize any proposed improvements to assist in No-Rise analysis

Utilities

- Existing 30" gravity sewer trunk line along south property line, but in railroad R/W
 - Would require easement from railroad if one does not already exist
 - Lengthy process
 - Only alternative would be boring under the levee...
- Domestic water available on east side of Long Road, existing stub 50' south of Little Sunshine property line. There is also a dead-end line at intersection of Edison Ave & Public Works Dr.
 - Waterline would need to be bored under the levee
- Army Corps may require any utility extension to go OVER the levee, not under
 - This would require filling and repaving a segment of trail which is not included in cost estimate.

**RAILROAD PARK FEASIBILITY
PEDESTRIAN BRIDGE ENGINEER'S ESTIMATE
APRIL 2024**

Description	Quantity	Unit	Unit Price	Amount
Mobilization	1	LS	\$ 25,000.00	\$ 25,000.00
Crane for material delivery across creek	1	LS	\$ 25,000.00	\$ 25,000.00
Pre-Fabricated Pedestrian Bridge	1	LS	\$ 60,000.00	\$ 60,000.00
Pre-Fab Bridge Installation	1	LS	\$ 60,000.00	\$ 60,000.00
Concrete Floor Deck, pumping	90	SY	\$ 200.00	\$ 18,000.00
Reinforced Concrete Abutments, pump concrete	20	CY	\$ 2,500.00	\$ 50,000.00
Access trail grading - ingress and egress (Import fill)	1140	CY	\$ 45.00	\$ 51,300.00
Modular Block Retaining Wall (West side of creek)	1200	SF	\$ 60.00	\$ 72,000.00
Pedestrian Fence - along RR ROW	300	LF	\$ 80.00	\$ 24,000.00
Stabilized subgrade	333	SY	\$ 7.50	\$ 2,500.00
Asphalt trail (10' Wide), 2" Type C (West side of creek)	83	CY	\$ 210.00	\$ 17,500.00
Seed/mulch	400	SY	\$ 12.00	\$ 4,800.00
SWPPP	1	LS	\$ 30,000.00	\$ 30,000.00
Civil/Site Engineer Fees (No Rise Modeling, Site design, SWPPP, Permitting)	1	LS	\$ 100,000.00	\$ 100,000.00
Structural Engineer Fees (Bridge abutment design)	1	LS	\$ 50,000.00	\$ 50,000.00
Geotechnical Engineer Fees	1	LS	\$ 25,000.00	\$ 25,000.00
Access Easement from Long Edison, LLC	1	LS	\$ 10,000.00	\$ 10,000.00
Environmental Assessments	1	LS	\$ 25,000.00	\$ 25,000.00

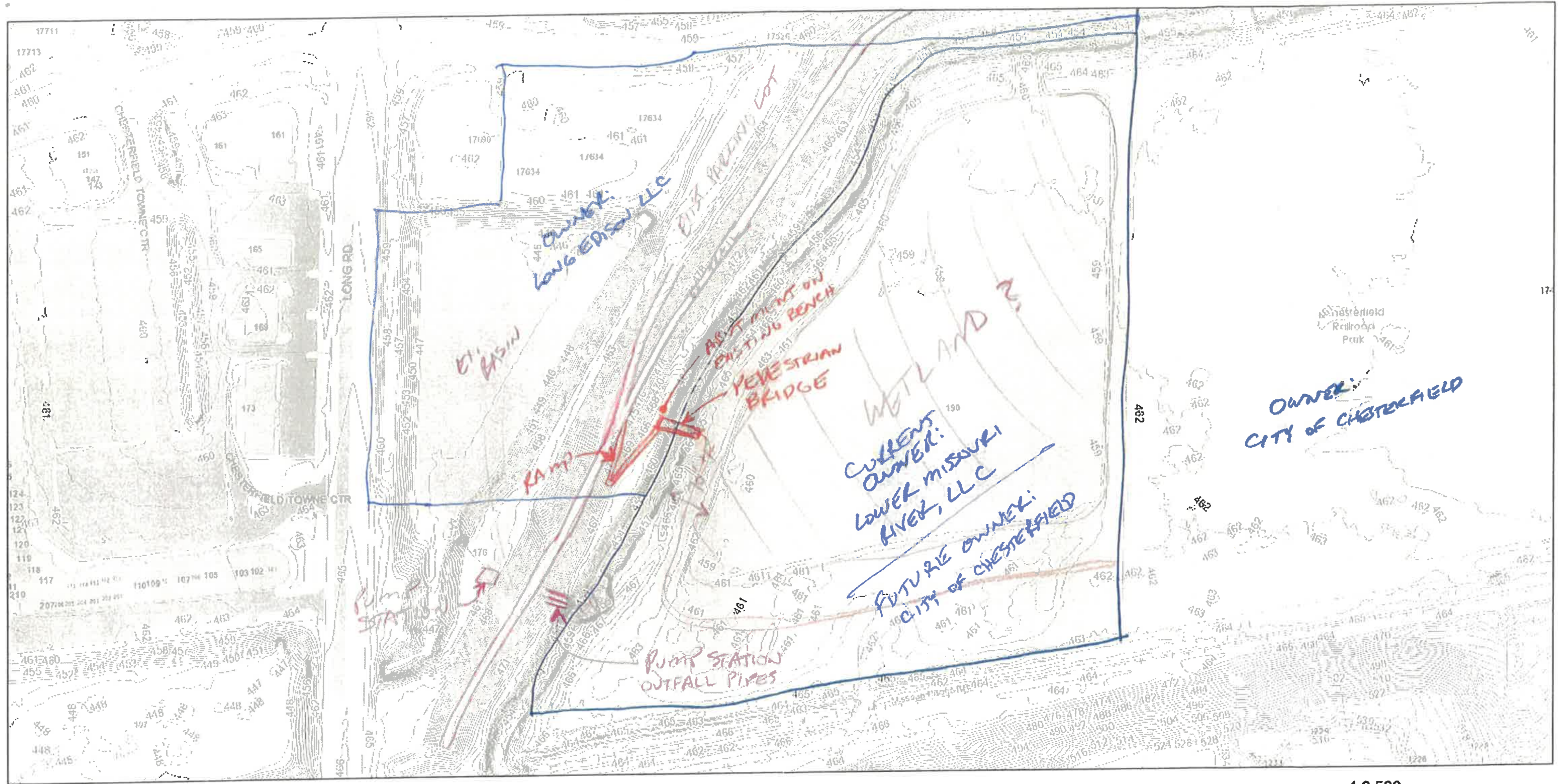
Subtotal = \$ 650,100.00
25% Contingency = \$ 162,525.00

TOTAL = \$ 812,625.00

Notes:

1. Above estimate for pedestrian bridge only, not for additional development in Railroad Park. There is currently no means of reasonable construction access across the levee and Bonhomme Creek to the Park.
2. Above estimate is subject to the numerous exceptions and conditions expressed in the report.

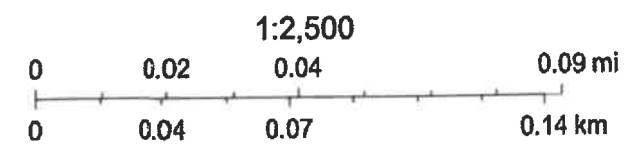
RAILROAD PARK FEASIBILITY



February 25, 2019

City 2ft, Valley 1ft

Parcels



Esri, Inc., City of Chesterfield, Missouri

This Map has been prepared from the most reliable information obtainable. We cannot, however, due to circumstances beyond our control, guarantee complete accuracy. Any errors or omissions brought to our attention will be appreciated and will be corrected in subsequent updates.