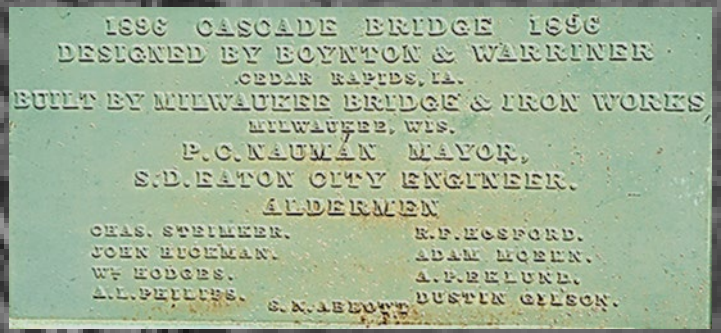
Cascade Bridge Study

Public Listening Session

Burlington, Iowa



January 29, 2020

Welcome!

Introductions

Mike Fisher

- Project Manager
- 29 Years Consulting Experience

Rachel Vanderwerff

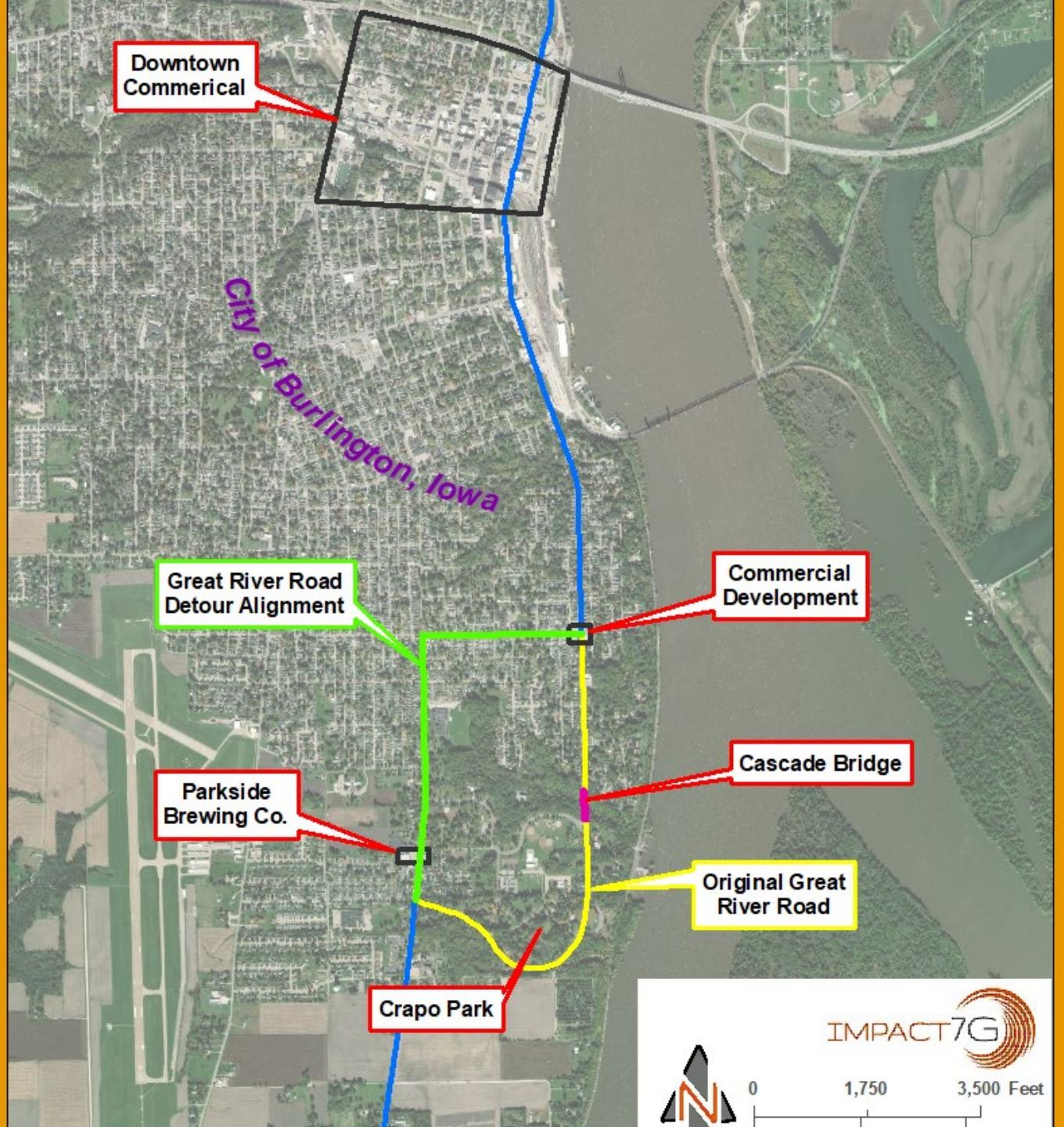
- Environmental Specialist II
- 10 Years Consulting Experience

Branden Scott

- Cultural Resource Task Lead
- 15 Years Archeology and Historic Structures Experience

Agenda

- Welcome and Introductions
- General Meeting Format
- Project Objective
- Schedule of Activity
- Cascade Bridge History
- Key Stakeholders
- City Infrastructure Prioritization
- Range of Outcomes
- Website



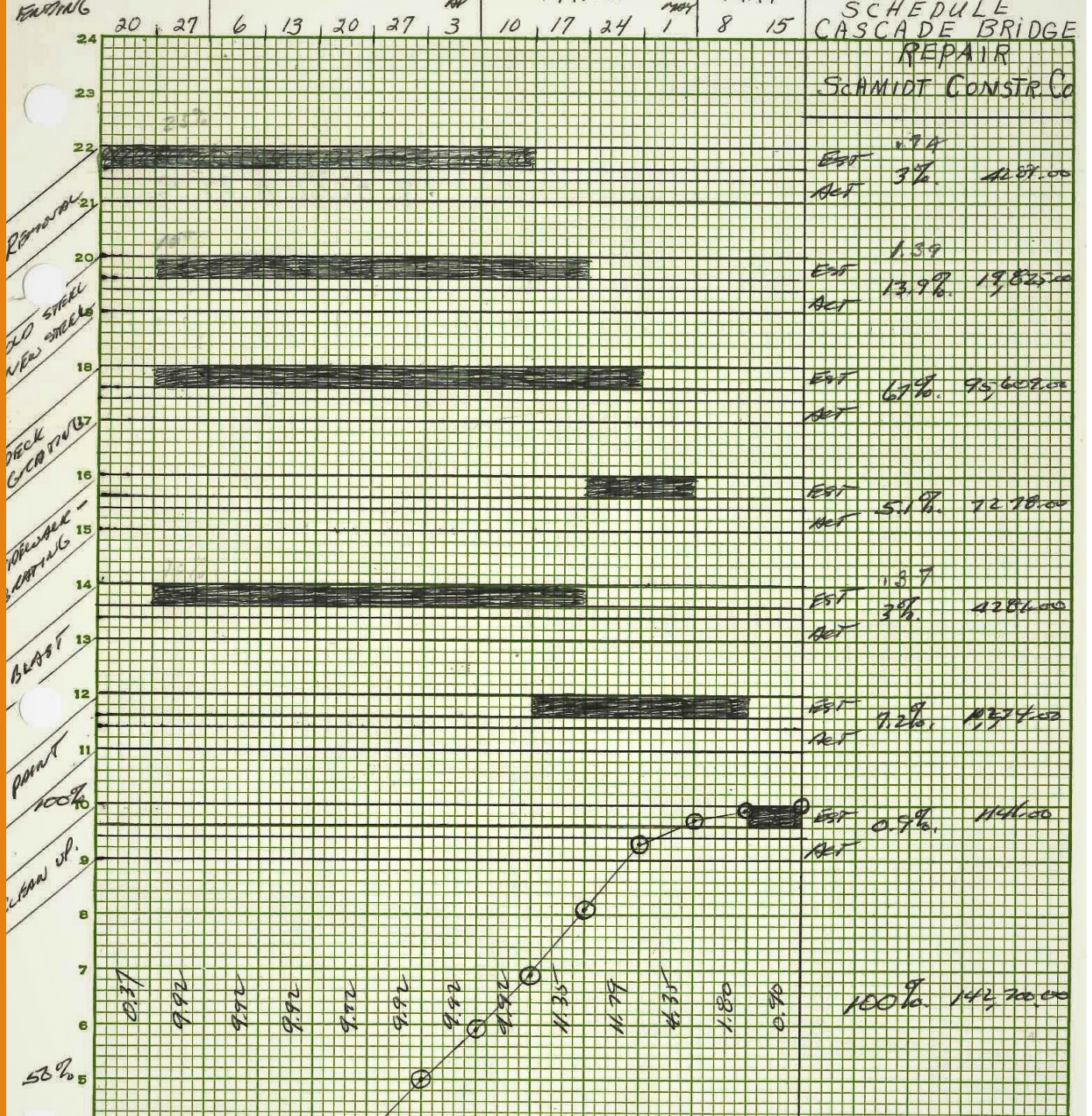
Project Objective

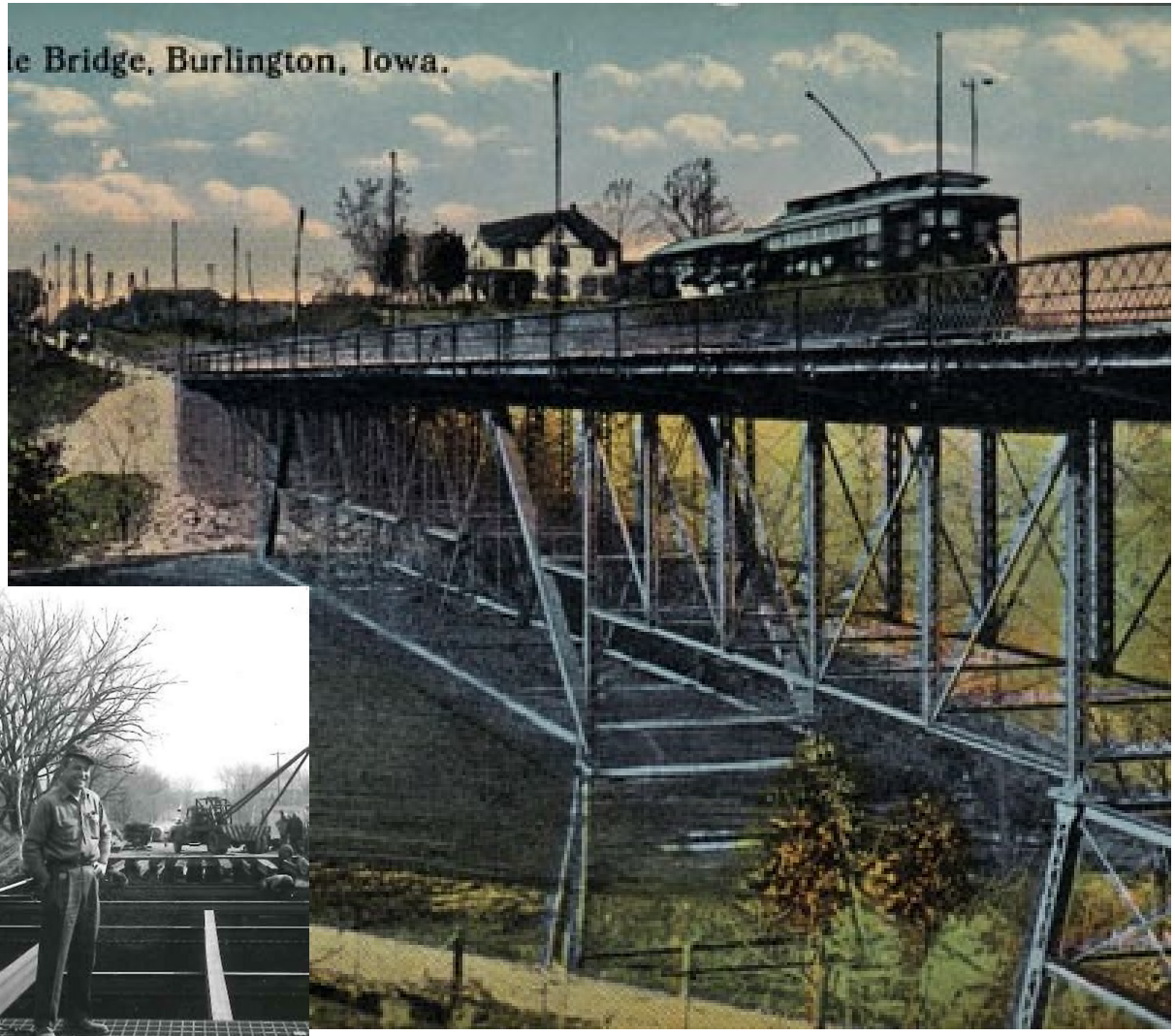
Determine a proposed future for the existing cascade bridge structure and crossing…

- Based on public input
- Based on stakeholder input
- Based on City staff input
- Based on City prioritization of infrastructure projects
- Based on the availability of funding to implement demolition or future use alternatives
- Based on cultural resource considerations
- Based on purpose and need considerations

Schedule of Activity

- Project Webiste – TASK COMPLETE
  - www.burlingtoncascadebridge.com
- Review of Past Inspections, Evaluations, Studies – TASK COMPLETE
- Informal SHPO Letter – TASK COMPLETE
- Meet w/Stakeholders – TASK COMPLETE
- Hold Public Listening Session -- TODAY
- Compile Community Input
- Provide Input to City





Cascade Bridge History

- Completed Fall 1896 at cost of about $16,000
  - ($489,920 in 2019 $'s)
- Listed on National Register of Historic Places (NHRP) on June 5, 1998
- Closed to vehicle traffic in 2008
- Closed to foot traffic in 2019
- Over a century of use.

Key Stakeholders

Key stakeholders that need to be engaged in the process:

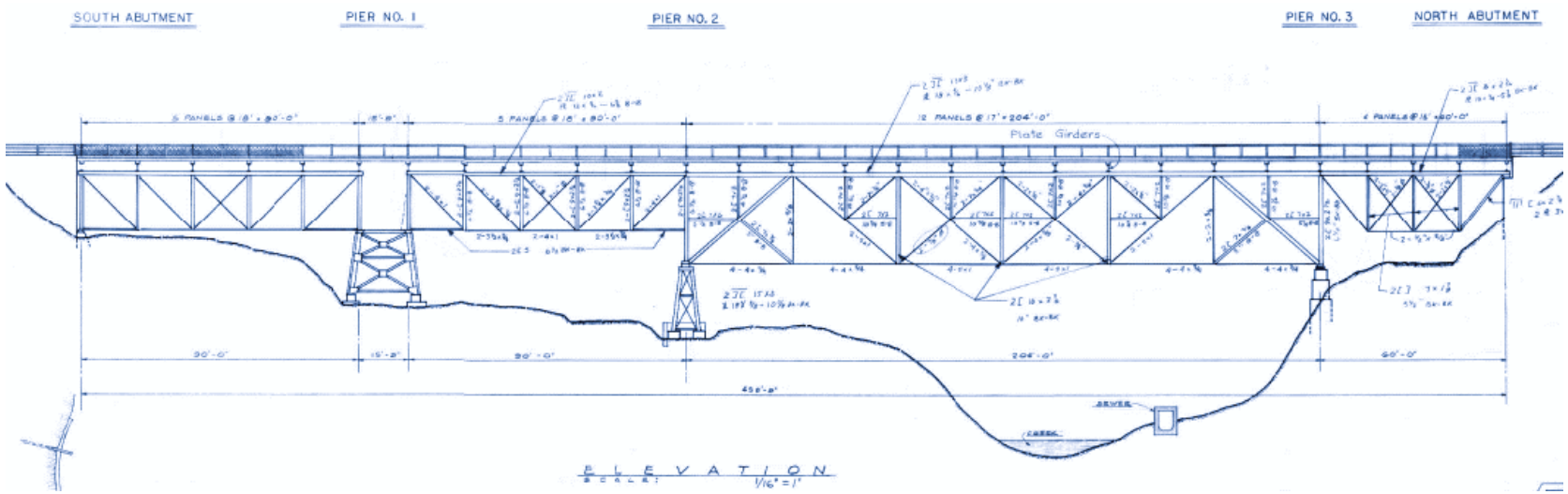
- Community Leaders
- Parks and Recreation
- Burlington Historic Preservation Commission
- Neighborhood Residents
- Local Organizations
- Friends of Cascade Bridge
- Other?

Outreach Efforts to Date

- ✓Greater Burlington Business Leaders
- ✓Burlington Historic Preservation Commission
- ✓Kiwanis
- ✓Rotary
- ✓Greater Burlington Partnership Young Leadership Group

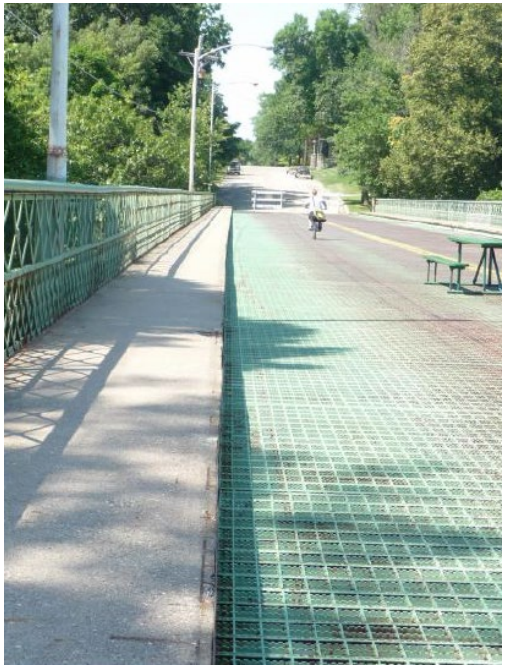
Previous Repairs

- 1953
  - New truss bearing shoes
  - New horizontal bracing
  - Reinforcing of steel piers
  - Reinforcing of some diagonal eyebars



Previous Repairs

1964/1978/1984



- **The 5” steel roadway deck grating was installed in 1964 (replaced wood deck)**
- Replacement of roadway deck joints
- North abutment bearing seat repairs and reinforcement of southeast abutment wing
- Installation of lateral bracing stiffener plates at panel points, reinforcing of some diagonal eyebars, seal welding of eyebar ends at panel points
- Cutting of holes in truss members to drain water
- Replacement of missing steel lacing with plates
- **Clean and paint entire bridge**
- Pier 2 steel repairs and concrete retaining wall at Pier 2
- Removal of existing sidewalk and exterior rail, and replacement with concrete sidewalk on corrugated steel deck, new sidewalk expansion joints, new exterior sidewalk rail
- Removal of steel floorbeam bolsters, replacement with new steel wide-flange beams on tops of existing floorbeams
- Removal of shallow stringers, replacement with new steel wide-flange stringers
- New roller bearings at Piers 1 and 3
- New jacking posts at Pier 1 for bearing replacement
- New floorbeam at north abutment
- Floorbeam repairs at south abutment

Previous Repairs

- 1998
  - Removal of existing concrete foundation at Pier 3, replaced with new concrete grade beam and caissons cored into limestone bedrock
  - Concrete abutment repairs

Cascade Bridge Evaluations

- Previous repair plans were dated 1953, 1964/1978/1984, and 1998
- October 2006 Bridge Inspection (City In-House Inspection)
  - Rating of 23 on the City Bridge Priority Point System (23 or more eligible for Fed/State Funds)
  - 1364 Vehicles Per Day (4.8% Trucks)
  - Superstructure Reduced from 7 to 3
  - “Poor/Critical” Condition
  - Significant Deterioration, Section Loss, Cracking, Other Deficiencies
  - Operating Rating for a Type 3 Vehicle of 6 Tons (Type 3 Double Bottom Straight Truck)

Total 2020 Rehab Upfront Cost*:

Construction:	7.20 Million
Painting:	1.94 Million
Design/Inspection:	0.75 Million
Total:	**9.89 Million**

*Adjusted Using CPI for Inflation

Cascade Bridge Evaluations

- October **2012** Bridge Rehabilitation Evaluation (Shuck-Britson, Inc.)
  - Purpose: Evaluation for Rehabilitation
  - Performed by Iowa Professional Engineer
  - 1364 Vehicles Per Day (4.8% Trucks)
  - Superstructure Reduced from 7 to 3
  - "Poor/Critical" Condition
  - Significant Deterioration, Section Loss, Cracking, Other Deficiencies
  - Load Rating: 4 tons (AASHTO Method)
  - **Rehab Construction Cost: $6.105 Million (NPV $8.588 Million)**
    - $7,204,072 adjusted to 2020 cost based on CPI Index (NPV $10,133,887)
  - Rehab Painting Cost: $2,056,000 (if hazardous)
  - **Rehab Painting Cost: $1,645,000 (if non-hazardous)**

20-ton limit
50-Year Life

Example Cost for New Bridge

Mt. Pleasant Street Bridge

- 500 Feet Long (Cascade Bridge 450’)
- Concrete Piers/Beams/Deck (Cascade will likely need steel beam for 200’ span or rethink pier placement)
- Design and Construction Inspection Cost: $700,000
- Construction Cost $4,300,000
- Total Cost: $5,000,000
- Other Cost Factors for Potential Cascade Bridge Replacement
  - Potential Historical Mitigation Costs for the bridge
  - The desire for incorporation of aesthetic/unique features
  - Additional width of structure for pedestrian use

Example Cost Bridge Rehab

Waverly, IA “Green Bridge” was a similar project in 2017.

- Bid price $2.4M
- Scaled to the Cascade bridge size would be $6.7M.

Photo Credit: KCRG.COM

Burlington has one of the top 10 consolidated tax rates in Iowa for Cities w/ population over 25,000…Rank No. 6 at 43.43048.

City Project Prioritization and Budgeting

Annual Repair/Reconstruct Budget: ~ $1,500,000

Annual Street Maintenance Budget: ~$1,750,000

Other Budget Items:

- Sewer (Compliance Order)
- Stormwater (Compliance Order)
- Parks (over 200 acres, pool)
- Facilities (City Hall, Public Works, Auditorium, Parking Facilities)
- Trails (growing network)
- Other Programs (golf course, rec)
- Other Infrastructure (flood wall)

Alternative Proposed Outcomes

- Rehabilitate existing bridge for vehicular/pedestrian use (50-year life; ~$6–9 million; weight restricted; inspection cost minimum $40,000 every 2 years)
- Rehabilitate existing bridge for pedestrian/bike trail (50-year life; ~$6–9 million; lower inspection costs than with vehicle bridge [$10,000 every 4 years])
- Remove bridge, no further action (~$250,000)
- Remove bridge, install trail up and down ravine (~$250,000–750,000)

Alternative Proposed Outcomes (continued)

- Remove bridge, replace with new bridge for pedestrian traffic (~$2.25–3.25 million)
- Remove bridge, replace with new bridge for vehicles and pedestrians (100-year use life; $3–5 million)
- Do nothing with existing bridge, build new parallel vehicle bridge (~$3–5 million + existing bridge maintenance costs)
- Do nothing with existing bridge, build new parallel pedestrian/bike bridge (~$2–3 million + existing bridge maintenance costs)

Proposed Outcome	Vehicle	Pedestrian	Life (Years)	Cost (Approximation)	Weight Restriction	Inspection Cost/Year
Rehabilitate existing bridge	X	X	50	~$6-9 million	20 tons	~$40,000 /2 years
Rehabilitate existing bridge		X	50	~$6-9 million	20 tons	~$10,000 /4 years
Remove Bridge, no further action				~$250,000		
Remove Bridge, install trail up and down ravine				~$250,000-750,000		
Remove bridge, replace with new bridge	X	X	100	~$3-5 million	None	<$40,000 /2 years
Remove bridge, replace with new bridge		X	100	~$2.25-3.25 million	10 tons	<$10,000 /4 years
Do nothing, build parallel bridge	X	X	100	~$3-5 million + existing bridge maint. costs	None	<$40,000 /2 years
Do nothing, build parallel bridge		X	100	~$2-3 million + existing bridge maint. costs	10 tons	<$10,000 /4 years

Bridge Study Website

www.burlingtoncascadebridge.com

- Website is evolving information source
- Web page in the site for public to provide input
- Please visit the website!

Voluntary Questionnaire

Please complete the questionnaire that will be handed out following comments that the audience would like to voice at this time.

Comments

Open the floor to comments from the audience….

Public Listening Session Regarding Cascade Bridge

Wed., Jan. 29, 5:30-7:30 PM Burlington Public Library, Meeting Rooms A and B, 210 Court St., Burlington, IA 52601. For more information or to submit comments, go to: https://www.burlingtoncascadebridge.com/ - Adv.