

Evaluation of Potential “Quick-Win” Flood Project Elements

TRFMA Board of Directors Meeting
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Background and Purpose

This is a critical time for the Flood Project! Support from the Nevada Legislature and Washoe County voters is essential to protect our community from devastating future flood events.

TRFMA sought recommendations for “quick-win” projects that can move forward now to show progress and build public support for raising additional revenues (taxes, fees) to fund construction of the Flood Project.

To that end, a meeting was held between HDR and TRFMA to evaluate “quick-win” Flood Project elements.



HDR participants:

- ◆ Mike Johnson – *Director of Professional Services (Water)*
- ◆ Duane Gapinski – *Senior Program Manager*
- ◆ Betty Dehoney – *Senior Environmental Project Manager*
- ◆ Mark Forest – *National Floodplain Practice Leader*
- ◆ Noel Laughlin – *Nevada Water Resources Section Manager*

TRFMA participants:

- ◆ Jay Aldean – *Executive Director*
- ◆ Michael Wolz – *Legal Counsel*
- ◆ Danielle Henderson – *Natural Resource Manager*
- ◆ Eric Scheetz – *Licensed Engineer*
- ◆ Ed Evans – *Senior Hydrogeologist*



Evaluation Criteria

Each Flood Project element was evaluated based on these criteria and assigned a positive (👍) or negative (👎) rating:

- ◆ Estimated Cost
- ◆ Implementation Timeframe
- ◆ Severability
- ◆ Incremental Benefits
- ◆ Environmental Enhancement
- ◆ Recreation Enhancement
- ◆ Public Support
- ◆ Permitting / Mitigation



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**Top three
criteria for this
evaluation**



Estimated Cost Criterion

The total revenue (from existing 1/8-cent sales tax) available for project implementation and associated professional services is estimated at around \$4.5M per year.

Rating Factors:

- 👍 Element is estimated to cost \leq \$4.5M
- 👎 Element is estimated to cost $>$ \$4.5M



Implementation Timeframe Criterion

Timeframe to complete the proposed work – including land acquisition, design, permitting and construction – is FY 2017 through FY 2018 (approximately 2 years).

Rating Factors:

- 👍 Element can be implemented in ≤ 2 years
- 👎 Element will take > 2 years to implement



Severability Criterion

A project element that is retained should be “standalone” (can be constructed as a separate feature that is not directly linked to any other project element). Construction of any single element must not cause adverse flooding impacts.

Rating Factors:

- 👍 Element can be constructed as a separate feature that does not cause adverse flooding impacts
- 👎 Element must be constructed as part of a larger series of elements to avoid causing adverse flooding impacts



Incremental Benefits Criterion

A project element that is retained should provide some flood risk reduction benefit to the community. *(Note of caution re: Corps B/C)*

Rating Factors:

- 👍 Construction of element provides a direct incremental flood risk reduction benefit
- 👎 Construction of element does not provide a direct incremental flood risk reduction benefit



Environmental Enhancement Criterion

Some project elements are designed, in part, to benefit/enhance the Truckee River ecosystem. Other elements may cause significant environmental impacts and require mitigation.

Rating Factors:

- 👍 Element provides some environmental benefit to the Truckee River ecosystem
- 👎 Element does not provide any direct environmental benefit and/or causes significant impacts requiring mitigation



Recreation Enhancement Criterion

Some project elements are designed, in part, to enhance recreational access and amenities along the Truckee River. Other elements do not include any specific recreational benefits.

Rating Factors:

- 👍 Element directly enhances recreational opportunities along the Truckee River
- 👎 Element does not directly enhance recreational opportunities along the Truckee River



Public Support Criterion

A retained project element should have support from TRFMA members and stakeholders. Implementation should also offer an opportunity to educate the public on the purpose and need for the Flood Project.

Rating Factors:

- 👍 Public supports construction of the element and/or implementation provides a public education opportunity
- 👎 Public is very unsupportive of the particular element and/or implementation does not offer meaningful public education opportunity



Permitting / Mitigation Criterion

The Corps 50-year plan has been authorized by Congress but the locally preferred 100-year plan awaits Corps review. Elements constructed in the meantime may have to complete a separate federal environmental permitting process.

Rating Factors:

- 👍 Environmental permitting process is straightforward and delays/significant mitigation are not anticipated
- 👎 Environmental permitting process is complicated and may delay implementation and/or require significant mitigation



Evaluation: Excluded Elements

A number of elements were excluded from this evaluation because the elements are in-progress or already completed:

- ◆ VSB Replacement (DR-12)
- ◆ RSIC Levee/Floodwall Construction (TM-1)
- ◆ NTD Relocation (TM-15)
- ◆ Voluntary Home Elevation Program (TM-17, TM-18)
- ◆ Truckee River Ecosystem Restoration (LT-1, LT-3, LT-4, LT-5)



RESULTS: Rejected Elements

A number of elements (see handout) were rejected based on overall rating of evaluation criteria.

With the exception of TM-16 (Vista Narrows Terracing), all retained elements received a positive (👍) rating for the first 3 criteria: **cost, timeframe, and severability.**

Elements rejected as part of this “quick-win” evaluation are still critical to the overall functionality of the Flood Project infrastructure system!



RESULTS: Retained Elements

These elements were retained for further consideration as potential “quick-win” projects:

- ◆ Pedestrian Bridge Improvements (Arlington Ave, DR-7)
- ◆ Floodproofing (DR-8)
- ◆ Arlington Ave Bridge Protection (DR-9)
- ◆ Wells Ave Pedestrian Bridge Improvements (DR-15)
- ◆ Wells Ave Bank Stabilization and Bridge Protection (DR-16)
- ◆ Rock Blvd Bridge Protection (TM-6)
- ◆ East McCarran Blvd Bridge Protection (TM-11)
- ◆ Vista Narrows Terracing (TM-16)



Pedestrian Bridge Improvements (DR-7)

Raise existing pedestrian bridges (two total); one located upstream and another downstream of Arlington Avenue.

“Quick-win” project because:

- ◆ Meets cost, timeframe, and severability criteria
- ◆ Provides incremental flood risk reduction benefit by eliminating flow impediment and debris accumulation
- ◆ Offers a worthwhile public education opportunity
- ◆ Straightforward environmental permitting process



Floodproofing (DR-8)

Implement a combination of structural and non-structural measures to reduce/eliminate flood damage to existing downtown Reno buildings.

“Quick-win” project because:

- ◆ Meets cost, timeframe, and severability criteria
- ◆ Provides incremental flood risk reduction benefit
- ◆ Offers a valuable opportunity for TRFMA to reach out to downtown Reno businesses and gain public support for the Flood Project



Arlington Ave Bridge Protection (DR-9)

Install bridge abutment and pier scour protection measures at Arlington Avenue Bridge.

“Quick-win” project because:

- ◆ Meets cost, timeframe, and severability criteria
- ◆ Prevents erosion around the bridge during flood events, thereby providing incremental flood risk reduction benefit
- ◆ Straightforward environmental permitting process



Wells Ave Pedestrian Bridge Improvements (DR-15)

Remove existing pedestrian bridge located at Wells Avenue and construct new pedestrian bridge just upstream of Wells Avenue.

“Quick-win” project because:

- ◆ Meets cost, timeframe, and severability criteria
- ◆ Provides incremental flood risk reduction benefit by eliminating flow impediment and debris accumulation
- ◆ New elevated bridge maintains safe pedestrian and bicycle access to the Truckee River
- ◆ Offers valuable opportunity to educate public and build support
- ◆ Straightforward environmental permitting process



Wells Ave Bank Stabilization / Bridge Protection (DR-16)

Stabilize streambanks and slopes around Wells Avenue Bridge; install bridge pier scour protection measures.

“Quick-win” project because:

- ◆ Meets cost, timeframe, and severability criteria
- ◆ Prevents erosion around the bridge during flood events, thereby providing incremental flood risk reduction benefit
- ◆ Prevents streambank erosion and improves water quality
- ◆ Relatively straightforward environmental permitting process



Rock Blvd Bridge Protection (TM-6)

Install bridge abutment and pier scour protection measures at Rock Boulevard Bridge (if necessary).

“Quick-win” project because:

- ◆ Meets cost, timeframe, and severability criteria
- ◆ Prevents erosion around the bridge during flood events, thereby providing incremental flood risk reduction benefit
- ◆ Straightforward environmental permitting process



East McCarran Blvd Bridge Protection (TM-11)

Install bridge abutment and pier scour protection measures at East McCarran Boulevard Bridge (if necessary).

“Quick-win” project because:

- ◆ Meets cost, timeframe, and severability criteria
- ◆ Prevents erosion around the bridge during flood events, thereby providing incremental flood risk reduction benefit
- ◆ Straightforward environmental permitting process



Vista Narrows Terracing (TM-16)

Excavate terraces along the Truckee River from Steamboat Creek to the 2nd RR bridge (downstream of the Vista Narrows) to increase flood flow channel capacity and reconnect river to its floodplain. Establish native riparian vegetation on terraces.

Not considered a “quick-win” project! However:

This element is the crux of the Flood Project. If it is not feasible to widen the Vista Narrows, the Flood Project designs will require significant revision in order to provide 100-year flood risk reduction benefits to the Truckee Meadows region.



Recommendations

- ◆ Initiate **environmental permitting process for Vista Narrows terracing** element to determine feasibility/mitigation
- ◆ Implement **pedestrian bridge improvements** and publicize efforts to improve public safety during floods
- ◆ Implement **floodproofing measures** and take opportunity to reach out to downtown Reno businesses to build support
- ◆ Initiate **erosion control program** to assess and protect critical sections of the Truckee River corridor (streambanks and bridges) from severe erosion during future flood events



Recommendations

- ◆ Conduct a Flood Project **phasing study** to determine construction sequence and interim mitigation requirements (no adverse impact during construction period); use results to help inform Flood Project financing needs

