REGIONAL TRANSPORTATION COMMISSION
Metropolitan Planning • Public Transportation & Operations • Engineering & Construction
Metropolitan Planning Organization of Washoe County, Nevada

MEETING DATE: June 17, 2022 **AGENDA ITEM 4.10**

From: Brian Stewart, P.E., Director of Engineering

RECOMMENDED ACTION

Acknowledge receipt of a report regarding the Arlington Avenue Bridges Replacement project.

BACKGROUND AND DISCUSSION

The RTC is working closely with Nevada Department of Transportation (NDOT), City of Reno, Federal Highway Administration (FWHA), U.S. Army Corps of Engineers (USACE), and stakeholders as the project moves through preliminary design and environmental evaluation. A detailed project report has been prepared to provide a project update as the project team prepares the 30% design documents and continues the environmental approval process. The report is intended to provide information relevant to the project schedule, funding and scope as the project proceeds to proposed construction to begin in 2024.

FISCAL IMPACT

Funding for this item is included in the approved FY 2022 budget and there is no additional cost in connection with this agenda item.

PREVIOUS BOARD ACTION

December 17, 2021	Approved a Professional Services Agreement (PSA) with Jacobs Engineering Group, Inc. (Jacobs) for environmental and professional design services.
April 16, 2021	Approved Request for Proposals (RFP) Scope of Services and Evaluation Factors for the Selection of Environmental and Design Services. Approved a Local Public Agency (LPA) between NDOT and the RTC for the use and reimbursement of federal funds.
February 19, 2021	Received a project update.
May 20, 2019	Received a project update.
November 16, 2018	Approved a PSA with Jacobs for Design Services.

ATTACHMENT(S)

A. Memo Update

ATTACHMENT A

Arlington Avenue Bridges

Project Update

June 2022

Prepared for

Regional Transportation Commission of Washoe County

In cooperation with

City of Reno

Prepared by

Jacobs *in conjunction with* Stantec

Existing Three Span (Two Pier) North Bridge

1. Introduction and Background

Spanning the Truckee River in the Riverwalk District of downtown Reno, Nevada (Figure 1), the Arlington Avenue Bridges are identified as Nevada Department of Transportation (NDOT) bridges B-1531 (south) and B-1532 (north). The two bridges were built in 1921 (north) and 1938 (south) and rehabilitated in 1967.

Figure 1. Project Location

Both bridges are structurally deficient and need to be replaced, as shown in the Regional Transportation Commission of Washoe County's (RTC's) 2040 Regional Transportation Plan (RTP) adopted in 2017 and amended in 2018; and RTC's recently approved and adopted 2050 RTP.

A Feasibility Study and Planning and Environmental Linkages (PEL) was completed in June 2021. The Feasibility Study reduced the range of possible bridge types and aesthetic themes through engineering analysis, and agency, stakeholder, and public outreach efforts between December 2018 and April 2021. The PEL formally identified the purpose and need of the Project: to address the deteriorating condition of the bridge structures, provide community access to the Truckee River and Wingfield Park, and improve the hydraulic capacity of the Truckee River during flood events.

The results of the Feasiblity and PEL Studies were to replace the existing three span north bridge (two piers) with a single pier bridge type (Figure 2), and replace the existing clear span south bridge (Figure 3) with a clear span bridge type. In addition, an aesthetic theme of modern art-deco was the consensus.

Figure 2. PRELIMINARY Concept Rendering ofTwo Span (Single Pier) North Bridge

Figure 3. Existing South Bridge

During the Feasibility Study, potential design concepts, additions, and constructability concerns from stakeholders and agencies weredocumented to be further evaluated for inclusion in the Project. The elements that were identified in the Feasiblity Study for further design and environmental analysis to determine if they meet the established purpose and need and are feasible include:

a) Wider sidewalks to accommodate the large number of pedestrians that visit Wingfield Park, expecially during special events including the month long Artown performances and the Reno River Festival.
b) A path under the south bridge to reduce the number of at grade vehicle-pedistrain and vehicle-bicycle conflicts.
c) Narrowing the roadway by minimizing lane widths as appropriate while maintaining dedicated bicycle lanes, transit stop locations, and dedicated left turn and right turn lanes.
d) Maintenance access to the river to accommodate sediment and debris removal.
e) Revised/ Additional access to the Wingfield Park Amphitheater to create a more inviting setting and increase usability especially during high predestrian-generating special events.
f) Protection of park landscaping, minimizing the removal of mature trees
g) Proposed pedestrian lighting to enhance saftey and create a more inviting setting
h) Details of aesthetic elements including light fixtures,patterning and stain color of flood walls, and other aesthietic features need to be determined and acceptable to stakeholders and agencies, while protecting aquatic species.
i) Constructabilty of the bridges, including dewatering approach, duration of construction, and phasing of construction.

2. Project Status Updates

The 30% preliminary design is currently underway and will be submitted for Agency review in July 2022. The preliminary design layout incorporates features to accommodate pedistriran and micro-modal safey, results from the traffic modeling, and the switch to Arlington Avenue being a micro-transit route.

A summary of analysis of the additional potential elements indentifed in the Feasiblity Study:

a) 8-ft wide sidewalks, rather than the standard 5-ft wide sidewalks, will be provided between Island Avenue and First Street, including along the bridges

b) A path under the south bridge is not feasible. In order to provide the same protection (approximately 5,500 cfs flow) as the existing path under the north bridge (Figure 4), a solid barrier with a top elevation of 4492.25 would be required.

Figure 4. Existing Path and Solid Barrier under North Bridge

Nearby buildings, driveways, and Riverwalk facilities require the roadway elevation along the south bridge to be maintained. This results in the need for a 6-ft wall, with only a 2-ft gap to the bottom of the south bridge (Figure 5), to provide the same flood protection as is provided along the path under the north bridge.

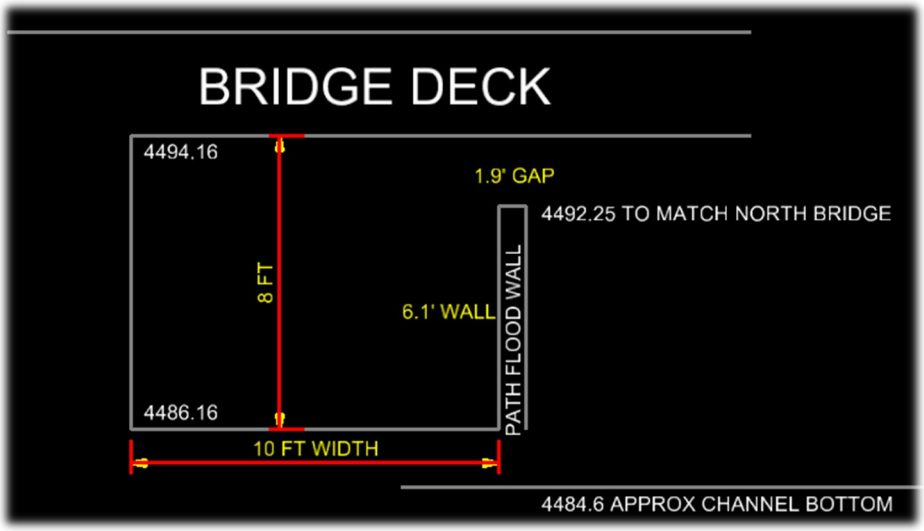


Figure 5. Unfeasible Wall Required under South Bridge to provide same flood protection as existing path under North Bridge

Figure 6 shows the flows recorded in the Truckee River near Arlington Avenue since the flood in 1997. Providing flood protection less than an elevation of 4492.25, would require increased maintenance to clear mud and debris off of the path anytime water got onto the path, and safety concerns requiring frequent closures of the path to prevent use when river flows exceeded the lower barrier elevation.

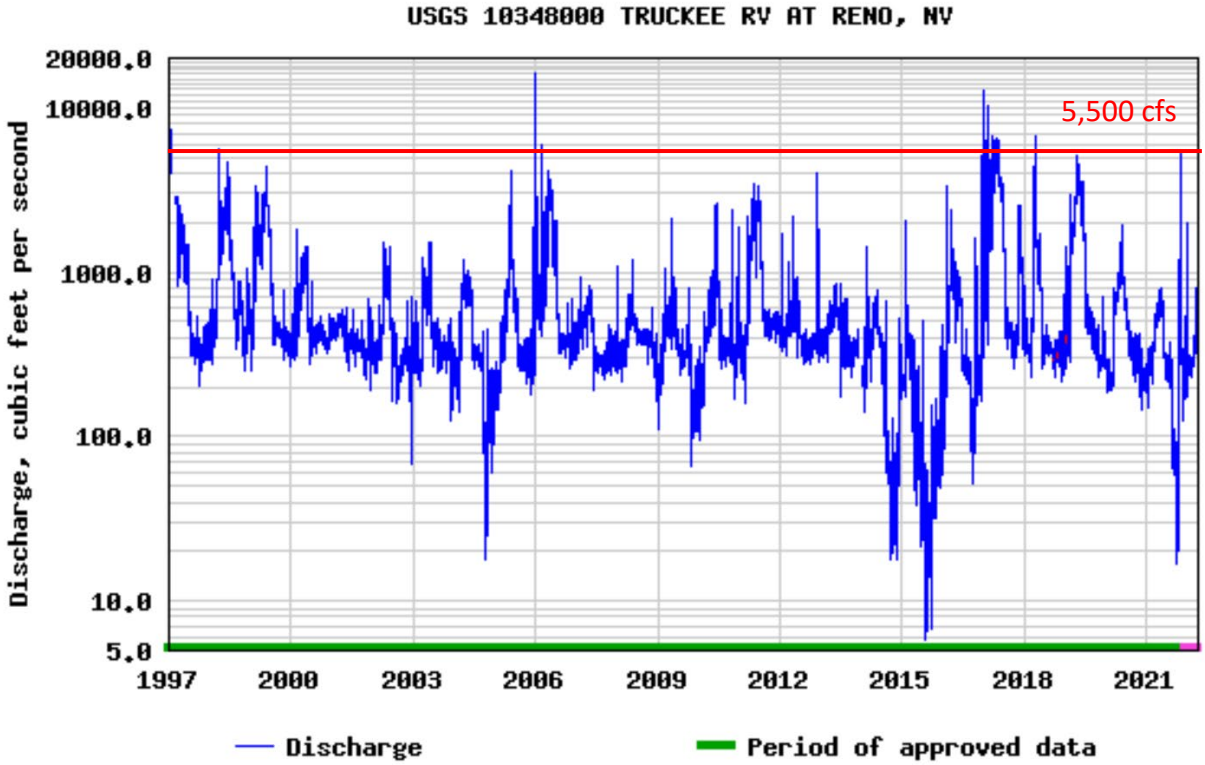


Figure 6. Truckee River flows near Arlington Avenue since 1997 and 5,500 cfs Level Identifi ed.

c) The roadway typical section will include an 8-ft sidewalk, curb and gutter, dedicated 5-ft bike lane, 2-ft buffer, and an 11' travel lane in each direction. At the intersection with First Street, the northbound direction of travel will have a dedicated left turn lane and a shared through/right-turn lane. At the intersection with Island Avenue, the southbound direction of travel will have a dedicated left turn lane and a shared through/right-turn lane. Traffic analysis for year 2050 traffic volumes confirm that dedicated right turn lanes are not required for these intersection movements. Along Arlington Avenue between the two bridges, pullouts will be provided for micro-transist stops and loading/unloading zones for park visitors and amphitheater performers.

See attached preliminary plan sheet.

d) Maintenance access to the river from Island Avenue near the existing ADA compliant kayak park access is being evaluated.

e) No additional pathways are being constructed with this project. The design is evaluating the addition of 5-ft sidewalk adjacent to the back of curb and gutter to provide the loading/unloading zone along the east side of Arlington Avenue an area other than the street or sodded areas to stage loading/unloading activities.

f) The design will be minimizing impacts to existing park landscaping. The safety features of wider sidewalks and buffer area between the bike lane and travel lane will require some impacts to the sodded areas, however, no existing trees will be impacted.

g) Pedestrian lighting will be incorporated into the project for safety and fixtures will be determined during the aesthetic design proecess.

h) An aesthetic stakeholder working group (ASWG) consisting of members from the stakeholder working group during the feasibility study have met three times to date to compile ideas and narrow down acceptable alternatives. Final determination of aesthetic features will be determined through a public meeting and an additional ASWG meeting.

i) Bridge constructability and construction schedule are factors that will be included in the Bridge Type Selection Report that is included with the 30% preliminary design plans.

Agency coordination and public meetings that have been held to date during the preliminary design and Environmental Study procress include:

- NDOT Enviromental and LPA Meeting – December 1, 2021

  This meeting was held with NDOT representatives to review the Feasibility Study results and discuss the PEL process and what planning products the RTC would carry forward into the NEPA process. A general overview of NEPA and the design scope were also discussed.

- Agency KickOff Meeting – February 3, 2022

  This meeting reviewed the Project history and background, the Feasibility Study process and conclusions, project team roles and responsibilities, the PEL to NEPA transition, and provided an open forum to share ideas and suggestions.

- Aesthetic Stakeholder Working Group Meetings
  - February 25, 2022

This meeting was to obtain ideas/ input for aesthetic alternaties that fit within the modern Art-Deco theme as determined during the Feasibility Study. Aesthetic design elements that were discussed included bridge railing, pedestrian lighting, bridge lighting, abutment and flood wall formliner pattern/ texture.

- March 25, 2022

  Aesthetic elements discussed at this meeting included bridge pylon and bridge rail design, and options for bridge overlook, pilasters, and bridge guardian concept; discussion about public art opportunities (not funded by the RTC); lighting; abutment and flood walls.

  Other items discussed included the inclusion of an 8-ft sidewalk, and the location of the bike lane (whether to keep along the shoulder of the roadway, move up to the level of the sidewalk, or put on a third vertical plane between the sidewalk and the roadway).

  Decisions Made:

  a) Don't introduce a third level with the bike lane, creates additional tripping hazard especially with large pedestrian usage during special events

  b) The posted 15 mph speed limit along Arlington minimizes the speed differential between bicycle and vehicular traffic; crash data history over the past ten years reflect this as well as there are no reported bicycle/ vehicle incidents.

- May 6, 2022

  Refined renderings of aesthetic alternatives where shown to the ASWG to narrow the options down to a maximum of three to be included with the 30% preliminary design, and shown at the public meeting to be held in July 2022.

  Specific aesthetic elements included bridge rail, end pylons, lighting, and pilaster insets

  Decisions Made:

  a) The roadway section of Arlington Avenue between the two bridges will not be created into plaza concept with colored concrete or colored pavers placed into a geometric pattern design.

  b) Existing street light levels will be determined and maintained at a minimum. Pedestrian lighting is required. Lighting will be shielded from directly shining on the Truckee River.

  c) Coordination with NV Energy to determine if existing utility boxes can be relocated if feasible to add steps from sidewalk along Arlington Avenue to the existing path under the north bridge.

  d) Aesthetic options need to stay consistent with the Modern Art-Deco theme as decided during the Feasibility Study. Don't incorporate the Riverwalk aesthetics.

- Design Review Coordination Meetings
  - March 8, 2022

    Roadway Design Discussion included:

    a) Existing RTC Transit Route 6 possibly being replaced with RTC's FlexRide Service

b) Ensure existing loading/unloading zones are maintained; okay to share this space with transit stop area

c) Traffic analysis will be done soon to verify turn lane configuration requirements; Traffic counts to be obtained at the end of March

d) Micro-Modal transporation options were presented; Tripping hazard and overall horizontal width requirements were concerns with introducing a third tier to separate the bike lane from the sidewalk and the roadway; The 15 mph posted speed limit along Alington Avenue minimizes the speed differential between bicycles and pedestrians.

e) Only one barrier railing will be implemented that provides both traffic and pedestrian safety. There will not be a double railing system, one for vehicles adjacent to the roadway and a second for pedestrians at the back of sidewalk.

Hydraulic Modeling Discussion included:

a) There are two hydraulic events that we are required to model

   i. To obtain a U.S. Army Corps of Engineering (USACE) Section 408 permit (which is permission to alter a Civil Works project upon a determination that the alternation propsosed will not be injurious to the public interest and will not impait the usefulness of the Civil Works project), the 14,000 cfs model from the Carson-Truckee Water Conservation District (CTWCD), who is the local sponsor of the USACE, must be modeled to show no rise in water surface elevation (WSE) between existing and proposed conditions. No minimum freeboard (WSE to the underside of bridge deck) requirements will be required since the existing bridges do not have a minimum freeboard, but rather are flooded during the 14,000 cfs (approximately 50-year) storm event.

   ii. The City of Reno and the Truckee River Flood Management Authority (TRFMA) require a 100-year storm event (20,700 cfs) to be modeled to show no rise in WSE between existing and proposed conditions. As with the 14,000 cfs model, there will not be a minimum freeboard requirement, aside from don't reduce what is existing.

Miscellaneous Discussion included:

a) The feasibility of including a path under the south bridge will be evaluated and discussed at the April 2022 Design Review Committee Meeting.

b) Kerrie Koski, City of Reno, mentioned the need for maintenance access to the river, both east and west sides of Wingield Park, for cleaning debris as well as for emergency access. When asked where their current maintenance access to the river was, the City verified they don't currently have any defined access but would like to evaluate options to provide it. The Fire Department stated they currently flip a ladder from the bridge deck down to the water as needed for emergency response.

c) Discussion on constructability of the bridges.

   i. CTWCD only allows work within the river from July 1 through October 31.

ii. Precast bridges would allow construction to occur in 2 years (1 year for each bridge). Pros and Cons to try and construct both bridge simutaneiously.

iii. Public access to the park during construction will be restricted, however maintaining access to the eastern portion of the park seems possible.

- April 12, 2022

  Feasibility of Path Under the south bridge

  a) The engineering design team explained the level of flood protection that the existing path under the north bridge provides (see summary in Section 2 a above), and how it is not feasible to provide a path under the south bridge that provides the same flood protection. Factors include, raising the profile of the roadway would severely impact the adjact intersection, buildings, driveways, and the river walk. Providing the necessary flood protection without raising the roadway would create a tunnel under the south bridge which is unsafe due to the nature of a tunnel, homeless population that frequents the park may use it as shelter, and graffiti. Providing a lesser level of flood protection would increase maintenance costs to clear mud and debris off of the path anytime it got wet, and require shutting the access down during frequent flood events.

  Possible Alternatives to a Path Under the South Bridge

  a) The engineering design team presented the idea to include a mid-block striped crosswalk with overhead flasing signage

  b) The City of Reno raised concerns with how the high volume of pedestrians at this location would interfere with traffic flow. The City provided the history of how the crosswalk at the Island Avenue/ Arlington Avenue intersection was previously on the north side of the intersection, but was relocated to the south side (Figure 8) when overhead flashing signage was added because of the inability to place the necessary poles and facilities on the existing bridge in order to keep the crosswalk on the north side of the intersection. The design team will look at relocating the crosswalk back to the north side of the inseciton and incorporate required poles and facilities into the new bridge design.

Figure 7. Existing Crosswalk and overhead flashing signage along south side of Island Avenue / Arlington Aven ue intersection.

Additional access to path under the North Bridge

a) The City of Reno requested evaluating the ability to include stairs from the sidewalk down to the path under the north bridge at the southeast corner of the bridge.

Maintenance Accessto the River

a) (As discussed above)a request to evaluate maintenace access to the river was included during the Feasiblity Study.

b) The existing maintenance access locations(one on the west side, and two on the east side) along Arlington Avenue into the par k along concrete pathways would be maintained.

c) Discussion on the City of Reno providing funding to include a new maintenance accessfrom Island Avenue to the river – Ongoing.

d) The Fire Chief confirmed additional river access for emergency access was not needed; the existing locations from the bridge decks are good because they provide good visiblitiy to the river.

Roadway Typical Section and Traffic Counts

a) The engineering team explained how moving the bike path from the roadway up to the same level as the sidewalk would require 16 additional feet to the cross section width (4’ roadway shoulders, and 2’ shoulder/buffer either side of the bike path).

b) The radius at the curb return for the southbound movement to one-way westbound Island Avenue will be smaller than City of Reno standards(match existing curb return) is very small to minimize bridge width; traffic counts verify this movement is rare, and large trucks do not need to be accommodated.

c) Traffic counts will be used to model year 2050 scenario to determine lane configuration and queue lengths for turning movements.

Utilities

a) Several utilities along the face of the bridges will be relocated inside the bridge.

Right of Way

a) Three City of Reno Parcels will require access for construction. Wingfield Park on either side of Arlington Avenue, and the parcel known as Fulton Park at the northeast corner of the north bridge.

b) Right of Entry will be granted by the City of Reno for construction

Environmental

a) The CTWCD/ USACE is requiring a Section 408 permit for the geotechnical boring planned within the river for the pier of the north bridge.

b) Possible impacts (both physical and public access) to Wingfield Park and other nearby parks both during construction and any permanent impacts being evaluated under Section 4(f) requirements (see below for Section 4(f) explanation).

Decisions Made:

a) No path under the south bridge

b) No mid-block crossing between the two bridges along Arlington Avenue. Evaluate relocating the crosswalk from the south side of Island Avenue back to the north side.

c) Costs for a possible maintenance access to the river would be covered by the City of Reno.

d) Bike lane to remain within the roadway to minimize bridge widths and impacts to park

- May 10, 2022

  Traffic Model Results and Roadway Design

  a) Provide 250' northbound left turn lane for queue lengths

  b) City of Reno requested additional analysis for northbound direction to reduce the three traffic lanes to two to accommodate dedicated bike lane.

     i. Existing northbound lane configuration is three lanes; left turn, through, and right turn shared w/ bikes.

     ii. Analyze two additional scenarios:

- Shared left turn / through lane; dedicated right turn lane; dedicated bike lane
- Dedicated left turn lane; shared through/ right turn lane; dedicated bike lane

Decisions Made:

a) Lane widths 11-ft minimum.

b) City of Reno verified this is not a 'capacity' corridor; There is 15-mph posted speed limit in conjunction with the speed analysis results showing 15-mph through the project area

c) City of Reno to assist with using camera to determine unknown storm drain facilities within the project limits.

d) During a followup meeting with the City of Reno on May 16, 2022, roadway typical section was finalized to have 8-ft sidewalks, 5-ft dedicated bike lane, 2-ft buffer between bike lane and travel lane, 11-ft travel and turn lanes.

- Public Meeting – March 2022

A prerecorded public presentation and accompanying survey was posted on the project website, www.ArlingtonBridges.com from mid-March to mid-April. There were 164 particpants that took the survey and provided feedback.

Environmental Updates:

CTWCD/USACE is requiring a Section 408 Permit for the geotechnical boring necessary within the river for the north bridge pier . A draft application was submitted and the CTWCD has provided feedback and comments. The revised application will be reviewed by the CTWCD at their June Board Meeting. The USACE submittal review times may cause delay in obtaining this geotechnical boring and delay design of the north bridge.

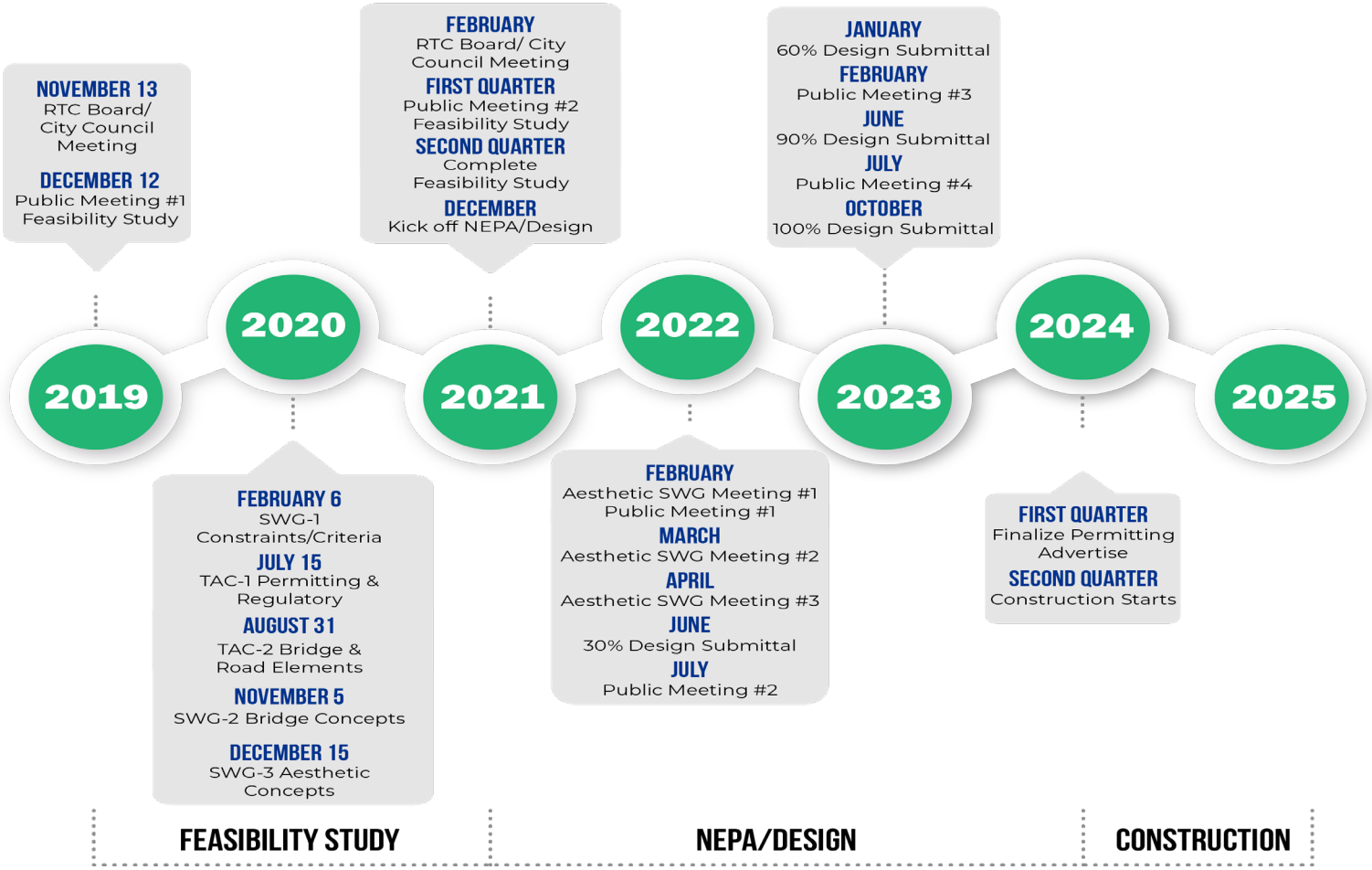
Park and recreational resources are protected by Section 4(f) of the USDOT Act of 1966 or by Section 6(f) of the Land and Water Conservation Act. Section 4(f) governs the use of land from publicly owned parks, recreation areas, wildlife and waterfowl refuges, and public or private historic sites. The design team have been coordinating with the City of Reno, NDOT, and FHWA on the impacts to parks and recreational features and possible mitigation measures.

No prehistoric or archaeological resources have been identified in the immediate project area and pedestrian archaeological surveys are unlikely to identify any previously unrecorded resources given the high degree of development in the area

NDOT is coordinating tribal consultations to determine if the Truckee River in this location is considered a Traditional Cultural Propery.

3. Project Schedule

The RTC has received $7 million for construction of the Arlington Bridges that must be obligated by fall of 2024. Below is a schedule with milestones and events to meeting this deadline.



4. Project Funding

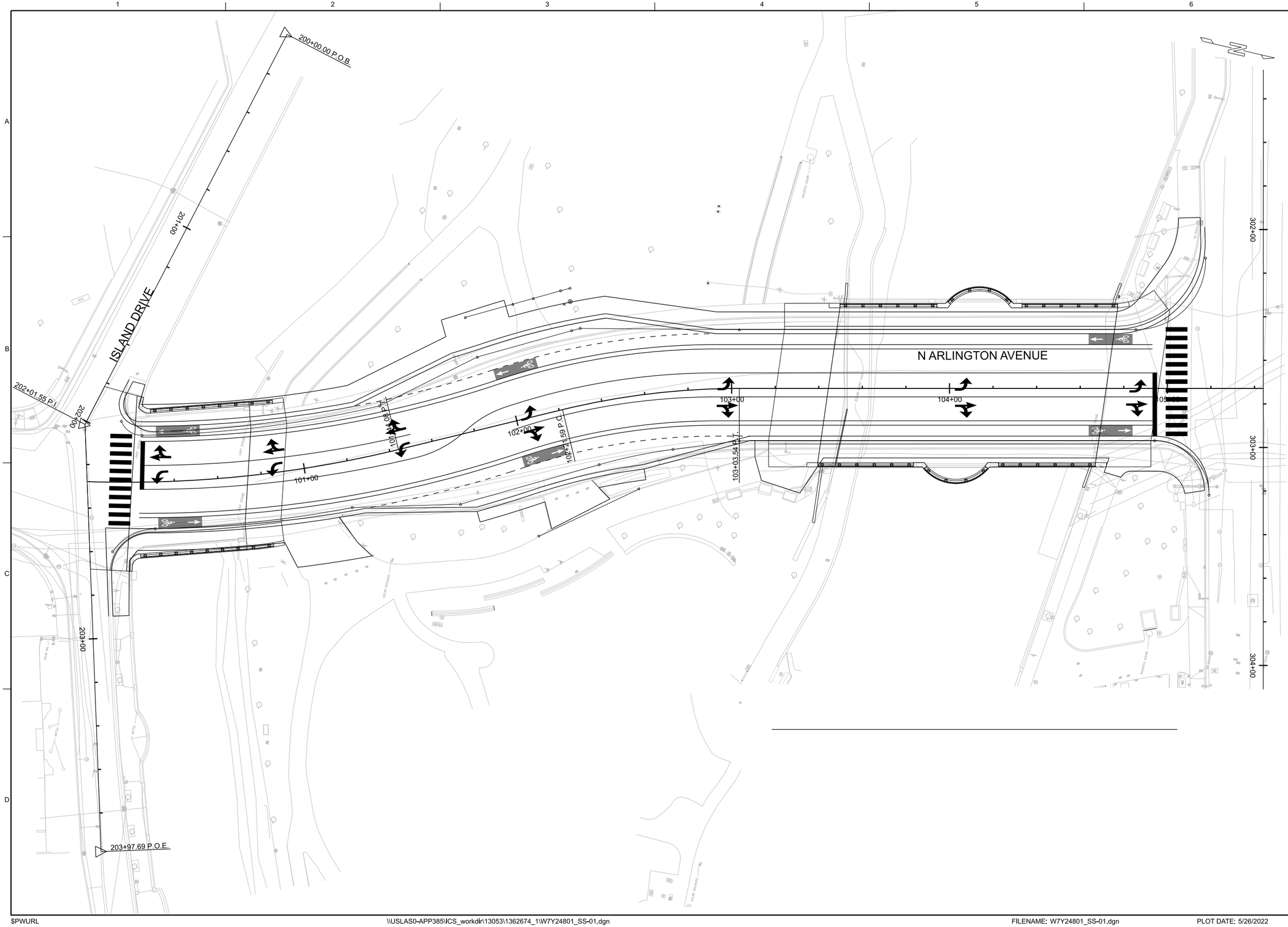
The Project is fully funded through construction as indicated on the Statewide TIP (ver 8) for project number WA20170122. Highway INFRA COVID funds are being utilized for preliminary engineering, environmental evaluation, final engineering, and bidding services. The RTC was excited to receive additional federal dollars to help pay for the construction of the bridges ($7 million RAISE Grant and $2 million Congressional Directive earmark funds). $5.9 million in STBG federal funds have been allocated to the project with local fuel tax providing the remaining funds needed at $13.1 million. The overall project funding split is 64% federal and 36% local.

5. Agency Coordination

A Local Public Agency (LPA) Agreement with NDOT was executed on June 3, 2021. The LPA Program is a method for completing a project that has been approved for federal funding in any phase of project development. It is a reimbursement program that requires the LPA to incur the costs prior to seeking reimbursement for the expended federal funds. The use of federal funds requires extensive oversight, meeting numerous federal requirements, and must be administered in accordance with 2 CFR 200. NDOT is providing administrative oversight of the project through the LPA agreement to ensure federal and state requirements are fulfilled. An amendment to the LPA agreement is currently being developed to reflect funding adjustments as noted in Section 4.

6. Next Steps

The project team is compiling community feedback from the first Public Informational meeting and preparing conceptual concepts of the bridges to present at the second public meeting. 30% design is on track to be submitted at the end of June. Once 30% design is achieved, environmental technical memos can be finalized and submitted for review, concurrence, and necessary mitigation measures will be identified. Also at this point environmental clearance requirements can be identified. Additional information can be found on the project website at: www.ArlingtonBridges.com



PRELIMINARY
NOT FOR
CONSTRUCTION

NO.	DATE	REVISION	BY	APVD
DSGN	DESIGNED	DR	CHK	APVD
	S. PARTINGTON		CHECKED	APPROVED

REGIONAL TRANSPORTATION COMMISSION OF WASHOE COUNTY

ARLINGTON BRIDGES NEPA FINAL DESIGN

SIGNING AND STRIPING
N ARLINGTON AVENUE
"AR" STA 100+00 TO 102+50

JACOBS
50 WEST LIBERTY STREET, SUITE 205
RENO, NV 89501
PH (775) 329-7300

1"=20"

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2022
PROJ	W7Y24801
DWG	SS-01
SHEET	of 45