

# RIVANNA RIVER BIKE/PED CROSSING



## BRIDGE ALIGNMENT SELECTION ANALYSIS



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## Background

The desire for a bicycle and pedestrian bridge crossing the Rivanna River between Woolen Mills and Pantops dates back to the mid-2000's. This desire has continued to be reaffirmed as plans involving these areas are updated and amended. Most recently, references to a need for a crossing in this general location have appeared in the following plans:

- Urban Rivanna River Corridor Plan, prepared by TJPDC for Albemarle County and the City of Charlottesville, 2022
- Jefferson Area Bike and Pedestrian Plan, TJPDC and PEC, 2019
- Pantops Master Plan, Albemarle County, 2019
- Charlottesville Bike and Pedestrian Master Plan, 2015

In 2019, following the adoption of the Jefferson Area Bike and Pedestrian Plan, the Charlottesville-Albemarle Metropolitan Planning Organization (CA-MPO) coordinated with the Virginia Department of Transportation (VDOT) to conduct a feasibility study to determine possible locations for a bicycle and pedestrian bridge. VHB consulting firm was retained to conduct the feasibility study and provide planning level analysis of potential bridge alignments.

## Project Goals

The primary purpose of pursuing a bike/ped crossing in this general location is to support improved bicycle and pedestrian connectivity throughout the Charlottesville-Albemarle region. The nearest bike/ped crossing to the proposed location is at Free Bridge, located 1.5 miles away. It is a location that requires bicyclists and pedestrians to be in close proximity to a high-volume vehicular route and is not a comfortable route for bike/pedestrian travel.

Improved bicycle and pedestrian connectivity between Woolen Mills and Pantops serves multiple purposes:

- It creates a more cohesive trail loop for users that want to travel between the Old Mills Trail on the east side of the river and the Rivanna Trail on the west side of the river, utilizing Free Bridge as the second river crossing option.
- It provides a connection between two major employment centers (The Wool Factory and Pantops development areas).
- It facilitates greater access to goods/services for residents on both sides of the river that may not be able to (or prefer not to) access these services via single occupancy vehicles.

## SMART SCALE

The best opportunity for funding is through the state's SMART SCALE grant application process, which is a competitive application process that prioritizes projects based on a cost-benefit scoring process. Projects receive a benefits score based on the following measures:

- **Safety** – how well the project addresses multimodal safety concerns through best practice crash reduction strategies
- **Congestion mitigation** – how well the project addresses the ability of the transportation system to move people and reduce travel delay
- **Accessibility** – how well the project addresses access to jobs and other opportunities, as well as multiple and connected modal choice
- **Environmental quality** – how well the project addresses the reduction of pollutant emissions and energy consumption, and minimizing the impact on natural and cultural resources
- **Economic development** – how well the project addresses regional and local economic development plans and new development activity
- **Land use coordination** – how well the project supports population and employment that on average has a reduced impact on the transportation network

The total benefit score is divided by the requested funding amount, and projects that receive the highest scores are funded.

Because of this competitive application process, one of the important factors considered as part of the feasibility study included options that will meet the transportation design requirements as economically as possible.

One important note is that because this is a transportation project, the project must provide a transportation system network connection. On the west side of the river, the bridge structure provides a connection to Chesapeake Street (a public road) or to E. Market Street (the private property has an established public use easement that meets the connection requirement). On the east side of the river, a shared use path will need to be constructed from the bridge landing to a public transportation system connection, which was determined to be the intersection of Peter Jefferson Parkway and State Farm Boulevard.

## Feasibility Study

The Charlottesville-Albemarle MPO worked with VDOT to procure consultants to conduct a feasibility study to determine potential bridge alignments in 2019. VHB consultants were retained and charged with developing a conceptual plan and planning-level engineer's cost estimate for a crossing that could be used to plan for the next steps of a grant application.

Through conversations with technical staff, the consultants determined that the site of the western landing was flexible, but that the site for the eastern connection point was determined to be the intersection of Peter Jefferson Parkway and State Farm Boulevard. The area considered for the western landing site was determined to be within the half-mile stretch of river between the Riverview Park parking lot and the I-64 river crossing bridges, as shown by the smaller circle in Figure 1.

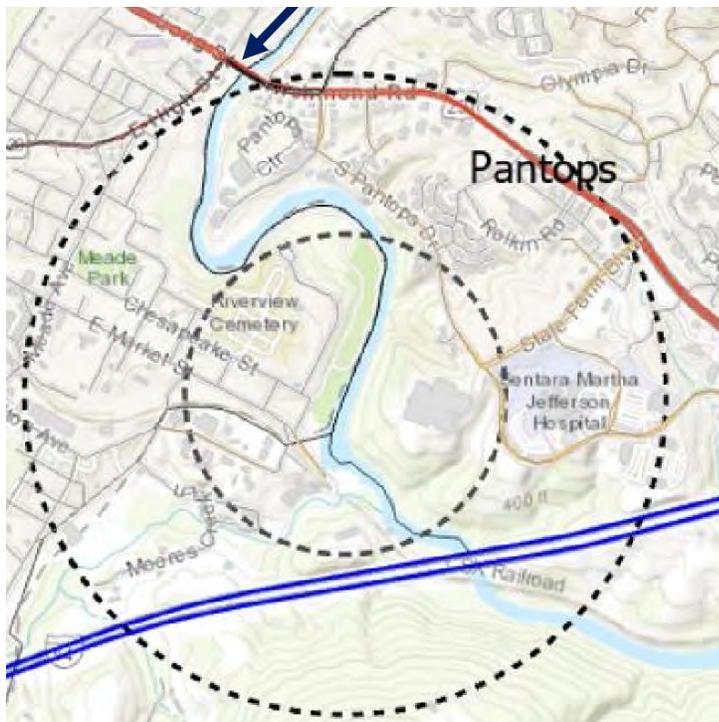


Figure 1. Study Area

The consultants initially identified six potential crossing options within the defined study area, as shown in Figure 2. Through meetings with a stakeholder group made up of technical staff from Albemarle County, the City of Charlottesville, CA-MPO, and VDOT, the alignments were narrowed to two, shown in the diagram below as numbers 1 and 4.

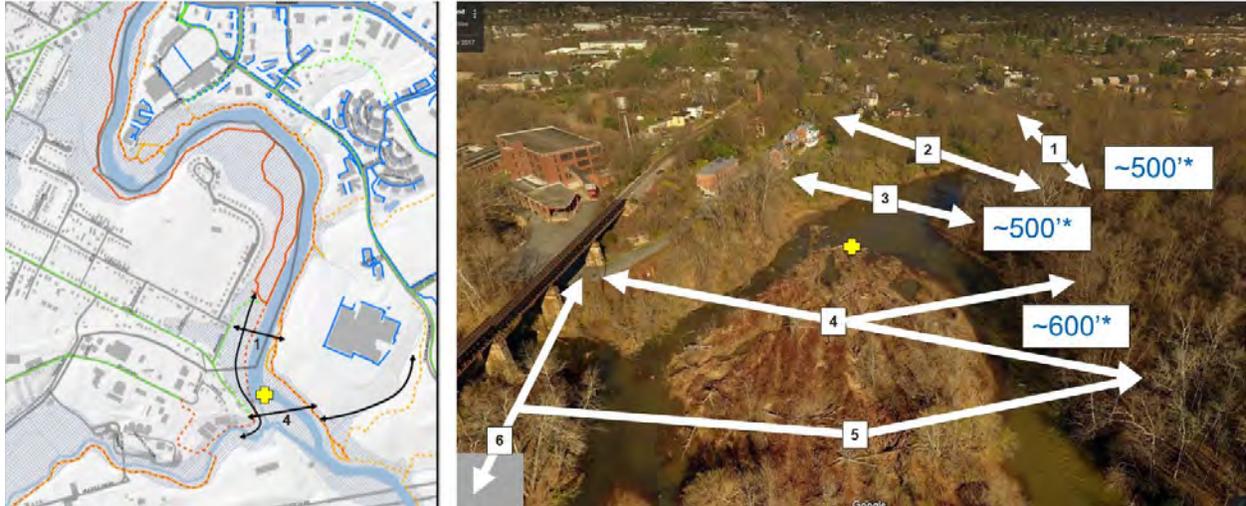


Figure 2. Initial alignments

Option 1 lands on the west side of the river at Chesapeake Street and consists of a 565' long structure. This option will be referred to as the Chesapeake Street Alignment throughout this document. Option 4 is a two-span bridge, with a combined length of just under 600'. This option is referred to as the E. Market Street alignment.

VHB identified two different bridge structures that would be feasible for the construction of the bridge. Knowing that the Rivanna River is designated as a Scenic River and has important historic significance to the area, the consultants included bridge designs that included aesthetic considerations to minimize negative impacts to the visual integrity of the area.

The consultants developed renderings of two potential bridge designs: a cable-stayed bridge and an arched truss bridge. The renderings show the cable-stayed bridge at the Chesapeake Street alignment and the arched truss bridge at the E. Market Street alignment, although either of these bridge designs could be implemented at either location, the cost for the two bridge designs will differ at the two locations due to site specific considerations related to construction and installation. A third bridge design identified by VDOT as feasible at both locations is a traditional truss bridge. This is a less expensive bridge design option, but also provides less aesthetic consideration. Site specific renderings were not developed for a traditional truss bridge, but an image is included for consideration and comparison purposes.

**Alignment Concept 1 – Bridge Rendering**



*Figure 3. Cable-Stayed Bridge at Chesapeake Street Alignment. Rendering prepared by VHB.*

**Alignment Concept 2 – Bridge Rendering**



*Figure 4. Arched Truss Bridge at E. Market Street Alignment. Rendering prepared by VHB.*



Figure 5. Traditional Truss Bridge. Image Source: Canam-Bridges, <https://www.canambridges.com/products/steel-bridges/steel-standard-truss-bridges/>.

#### *Cost Estimates*

As part of the feasibility study, the consultants developed planning level engineer's cost estimates for the two alignments. The cost estimates, developed using 2020 dollars, include all known costs associated with the engineering, right-of-way, and construction phases for the project at the two locations, along with contingencies for incidental expenses that may need to be incurred as part of the project development.

The cost estimate for the Chesapeake Street alignment was \$11.3 million, and the cost estimate for the E. Market Street alignment was \$15.4 million. The full feasibility study can be found on [the TJPDC website](#).

## Stakeholder Engagement

To better assess the relative pros and cons of the two bridge alignments, CA-MPO staff worked with the MPO committees and Policy Board to appoint a Stakeholder Advisory Committee to inform discussions about the factors that should be considered as part of the selection of a bridge location and design, as shown in the table below.

*Table 1. Stakeholder Advisory Committee Members.*

<b>Organization</b>	<b>Name</b>
VDOT	Chuck Proctor
Charlottesville Public Works	Brennen Duncan
Albemarle Planning	Jessica Hersh-Ballering
Charlottesville Parks and Recreation	Chris Gensic
Albemarle Parks and Recreation	Tim Padalino
Pantops Citizen Advisory Committee	Dick Ruffin
Woolen Mills Citizen	Annie Stafford
Rivanna Conservation Alliance	Lisa Wittenborn
Regional Transit Partnership	Bea LaPisto-Kirtley
Charlottesville Planning Commission	Karim Habbab
Albemarle Planning Commission	Daniel Bailey
Rivanna Trails Foundation	Fran Lawrence
Citizens Transportation Advisory Committee (MPO)	Stuart Gardner

The Stakeholder Advisory Committee met four times for regular meetings between November and February and held one on-site visit in January to visit the two landing sites on the Woolen Mills side of the river. All of the regular meetings were open to the public with a general question and comment period at the end, were recorded, and had notes posted to the project webpage to facilitate information-sharing.

### *Factors for Consideration*

MPO staff worked with the Stakeholder Advisory Committee to identify the factors that should be considered as part of the discussion of the two bridge options. An initial list was developed with the MPO's Citizens Transportation Advisory Committee (CTAC) and was then refined through discussions with the Stakeholder Advisory Committee, as shown below.

- ADA accessibility
- Trail connectivity
- Utility impacts
- Floodplain/Resiliency
- Public impacts
- Cost/project feasibility

- Placemaking considerations
- Environmental/water quality impacts
- Preservation of river access for recreational uses
- Transit access
- Parking
- Water safety impacts
- Overall network enhancement opportunities
- Economic Development

## Network Connectivity

One of the early conversations staff had with the Stakeholder Advisory Committee was about how this bridge will contribute to overall network connectivity for bicycle and pedestrian movements. There is a need for overall bicycle and pedestrian network improvements in the areas providing access to the bridge. County, City, MPO, and VDOT staff are aware of these additional needs. But this one project application cannot solve all of these network connectivity needs. Instead, it will provide an important network connection across the river which serves as an existing barrier to bike/ped travel throughout this area, and future projects will have to be considered and pursued to continue to provide network improvements. Instead, discussions were focused on how this bridge crossing could facilitate the strongest overall network opportunities.

One point that was brought up early in the discussion is the proximity of the two landing sites to each other. As the crow flies, the western bridge landing sites are less than a quarter of a mile apart. Comments have been made throughout the process that for those wanting a bridge crossing, the most important aspect to have a bridge in the general area, and users would be able to navigate to their preferred travel route from either landing.

The image shown in Figure 6 was developed as a slide for the stakeholder and public engagement to show the most commonly referenced routes that users would take from the Woolen Mills area into downtown Charlottesville. The orange dots are the approximate locations of the two bridge landing sites. Each of the routes has its own pros and cons, but again, they are all in close proximity and users can easily travel from either bridge landing site to their preferred route.

None of the routes shown below have dedicated bicycle facilities. Chesapeake Street has continuous sidewalks along the northern side of the road, provides a connection to the Coal Tower Trail, and a direct path from Riverview Park to Meade Park on the way into the downtown area. Stakeholder Advisory Committee members noted that the road is hilly and narrow, which makes it less comfortable for bicyclists.

State maintenance of E. Market Street ends leading into the private Wool Factory development site. The section that goes into development is very narrow with houses built close to the road. The access into the site continues to be very narrow and includes multiple sharp turns. The existing portion of the road leading into the private development could not accommodate additional bicycle/pedestrian infrastructure due to the lack of sufficient setback between the houses and the road. However, the

traffic volume is also low along this section of the road. There is no pedestrian infrastructure from the bridge landing site to the broader transportation network, so users would need to walk along the road. Along E. Market Street more generally, the sidewalk infrastructure is inconsistent traveling from the bridge landing site into downtown, but E. Market Street also provides a connection to the Coal Tower Trail.

The third route that was discussed is Broadway Street. Stakeholder Advisory Committee members indicated that generally, Broadway Street is a comfortable travel route because of its width. It could be accessed from the E. Market Street bridge landing site through the public use easement at the Wool Factory development site, but this would require traveling through the main parking and access area at the development site with no designated bike/ped facilities, which could be uncomfortable for users. Portions of the access through the development site would be along that same narrow, windy public use easement mentioned for the E. Market Street connection. City of Charlottesville staff indicated some interest in considering adding bike lanes along Carlton and Broadway, and Albemarle County has discussed potential interest in improvements along Broadway, but there have been no commitments to move forward on any of those plans at this time.

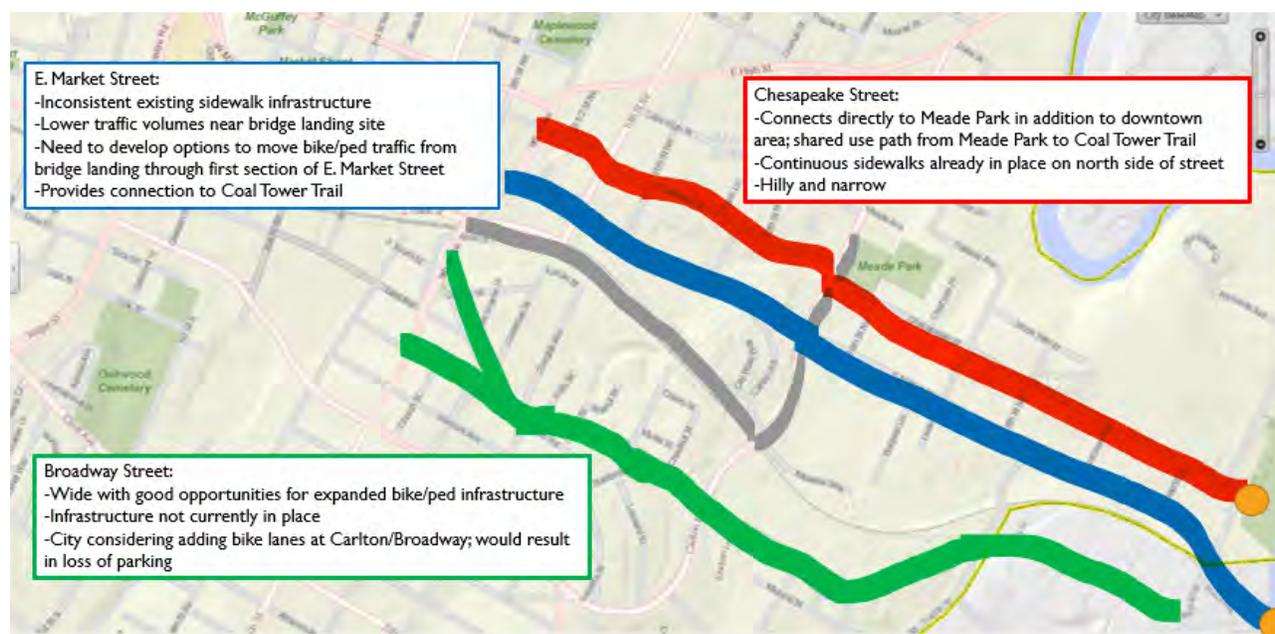


Figure 6. Bicycle/pedestrian network connection considerations.

## Trail Connections

In addition to connections to the transportation network system, also under consideration is how the bridge will facilitate travel along the trail system. There are two trail systems on either side of the river currently – the Old Mills Trail along the east side of the river and the Rivanna Trail System along the west side. Both alignments will provide a similar connection point to the Old Mills Trail on the east side of the river. The Chesapeake Street alignment would provide direct access to the Rivanna Trail system at Riverview Park, and the E. Market street alignment would provide a more direct access point to the Rivanna trail system through the Wool Factory development site.

While either portion of the Rivanna Trail can be accessed from either of the bridge landing sites, travel between the sections at Riverview Park and the Wool Factory currently requires short distances to be traveled on-road.

The map below is the map of the Rivanna Trail System. The red dots show the approximate location of the two proposed bridge landing sites. The red lines on the west side of the river show the on-road travel needed to navigate the gap in the trail between Riverview Park and the Wool Factory. The dotted green line along the east side of the river is the Old Mills Trail.

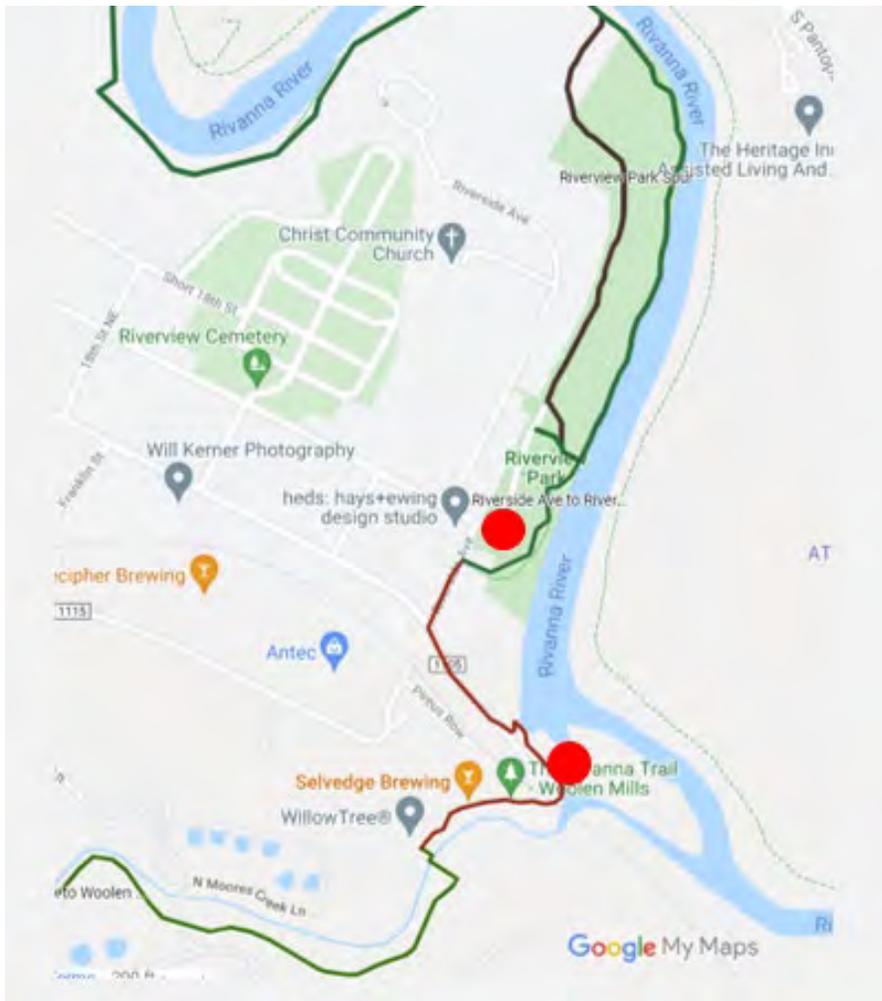


Figure 7. Map of Rivanna Trail System. Provided by Rivanna Trail Foundation.

## Parking

Along with overall network connectivity, one of the earliest discussions held with the Stakeholder Advisory Committee involved existing concerns over parking challenges at Riverview Park and the impacts that the bridge may have on relieving or exacerbating existing parking frustrations.

The existing parking frustrations exist regardless of this project. There was much concern from area residents on the Stakeholder Advisory Committee over the additional parking demand that this bridge

may generate. There was also discussion in the Stakeholder Advisory Committee that providing multi-modal connection opportunities to Riverview Park, including better bike/ped access to the park, would decrease the demand for parking at the park itself. It is difficult to know what the actual impact of the bridge itself would be on parking demand since the demand is incremental and based on a number of factors. The parking shortages need to be addressed regardless of whether the bridge is placed at this location or at the E. Market Street location, but it is an issue that needs to be resolved outside of this project.

Bicycle and pedestrian commuter use of the bridge is unlikely to contribute to the demand for additional parking. The more significant concern is about parking demand from recreational users. As mentioned previously, there is a connection to the Rivanna Trail System through Riverview Park that attracts recreational users from outside the immediate area that want to access the trail systems, and the additional connection over the bridge allowing for a fully connected recreational loop could increase demand for those traveling from outside of the immediate area.

MPO staff spoke with locality staff to discuss potential options that could be explored to provide some parking relief to the area. Some of these options, as shown in Figure 8 include:

- Expanding parking at Riverview Park at the site of the former pumping station near the proposed landing of the Chesapeake Street bridge landing site. This area is not currently utilized for recreational purposes, but additional parking could be incorporated into other development plans for the park.
- As the state acquisition of the railroad property moves forward, there's a vacant property at the southern portion of Steephill Street that could be an option for overflow parking if the state is amenable. While it would be farther removed from the park, it would be a reasonable location for cyclists or pedestrians that are traveling to the area for trail use.
- Parking restrictions could be considered along the residential streets that are used as overflow parking by park visitors. While this doesn't increase overall parking capacity near the park, it could mitigate the negative impact for local area residents and encourage users to access the park through other transportation modes.
- Albemarle County is exploring options to increase parking locations on the eastern side of the river in Pantops. Combined with a bike/ped crossing in the near vicinity, this would reduce the demand for parking for visitors from the broader region to park at Riverview Park. Pantops is a more logical destination for those traveling from outside the area coming in for the purposes of accessing the trail system.



Figure 8. Potential parking mitigation options near Riverview Park.

One topic of discussion is the parking availability at the Wool Factory site. This property is privately owned, but the developers have dedicated ten parking spaces near the foot bridge across Moore’s Creek for public access to the Rivanna Trail. The developer has confirmed that the public is welcome to use the parking area pending availability of spaces (namely on evenings and weekends outside of normal business hours), but that there is no opportunity for additional public parking to be designated. While this site does provide some additional parking capacity in the area, it needs to be noted that this is not publicly supplied parking and therefore cannot be relied upon to meet the parking needs of the area indefinitely.

There were also discussions among the members of the Stakeholder Advisory Committee that because the two landing sites were so close together, there was not a significant difference in parking capacity between the two locations since available parking near either site could meet the overall area need for parking for those that wish to park to access the bridge (or other local attractions).

### Economic Development v. Equity

While not a specific topic that was identified as a factor for consideration in the list that was developed, the general discussion around how this bridge would integrate with commercial uses was a topic of conversation that came up throughout the conversations with the Stakeholder Advisory Committee. The two alignments provide very different types of connections at their landing sites. The Chesapeake

Street alignment lands at the park, providing a direct access to a public amenity. The E. Market Street alignment provides direct access to a commercial site with a large employment base and retail services that could be attractive for the public to access. The Stakeholder Advisory Committee members made different points about which of these was a more favorable consideration for where the bridge should land. One committee member made the comment that the Chesapeake Street alignment provided a larger equity benefit because the bridge was in a more publicly accessible location. Another committee member emphasized the value of connecting the State Farm economic activity center with the Wool Factory as an economic activity center. Both of these perspectives are valid, and whether one is preferable over another is a matter of overall priorities.

### ADA Accessibility

ADA accessibility is a requirement for any transportation project. The requirement is that any new infrastructure intended for bike/ped use has a grade of 5% or less unless it is adjacent to an existing roadway that has a grade in excess of 5%. As presented in the feasibility study that was conducted, there is a section of the shared use path on the Pantops side that connects from the E. Market Street alignment that exceeds this 5% grade requirement. That section will have to be rerouted to reduce the grade.

### Floodplain Impacts and Resiliency

The Stakeholder Advisory Committee reviewed potential floodplain impacts and resiliency related to the two alignment options. The feasibility study that was prepared noted that both alignments would require hydraulic modeling to determine impacts to the 100-year flood plains (shown as the hashed sections of the Figures 9 and 10 with the approximate bridge locations overlaid). However, the E. Market Street alignment is at a lower elevation and has a lower clearing over the water (25' above normal water levels, 1' above 100-year floodplain) than the Chesapeake Street alignment (40' above normal water levels, 15' above 100-year floodplain) and has a higher risk of impacting the floodplain as a result.

As far as longer-term resiliency considerations, there is again more risk with the alignment at E. Market Street due to the lower clearance over the floodplain should flooding activity increase in this area.

While the location of the bridge compared to the floodplain is an important consideration, it also needs to be considered that the networks the bridge is connecting to are also at very low elevations, and that a bridge over a body of water will necessarily have some level of floodplain impact that will need to be evaluated.

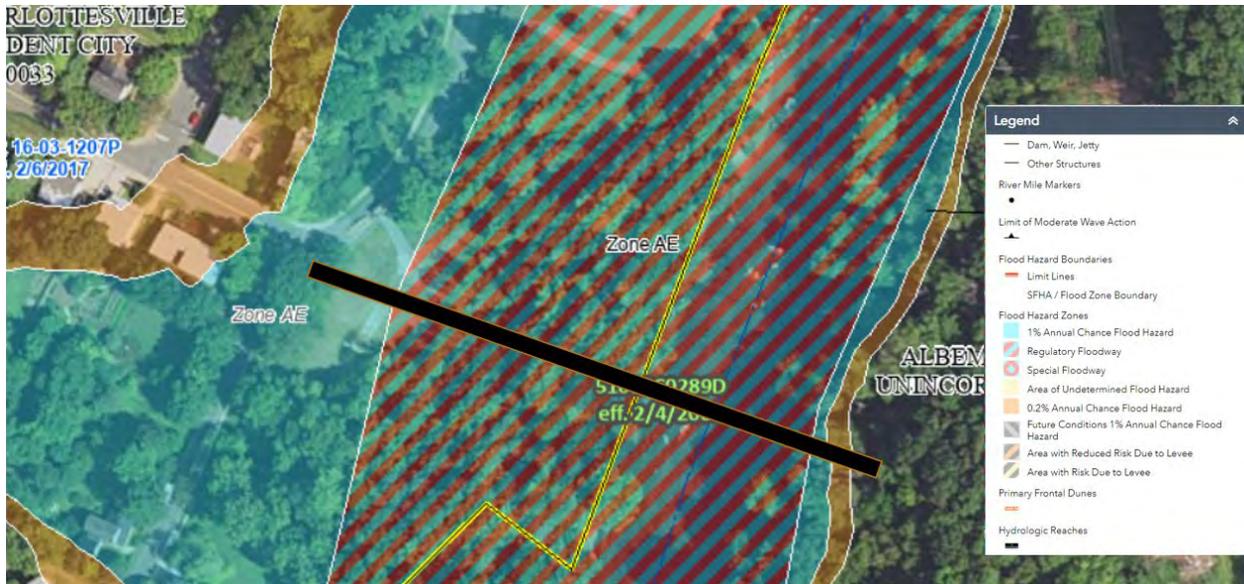


Figure 9. 100-Year Floodplain at the Chesapeake Street location

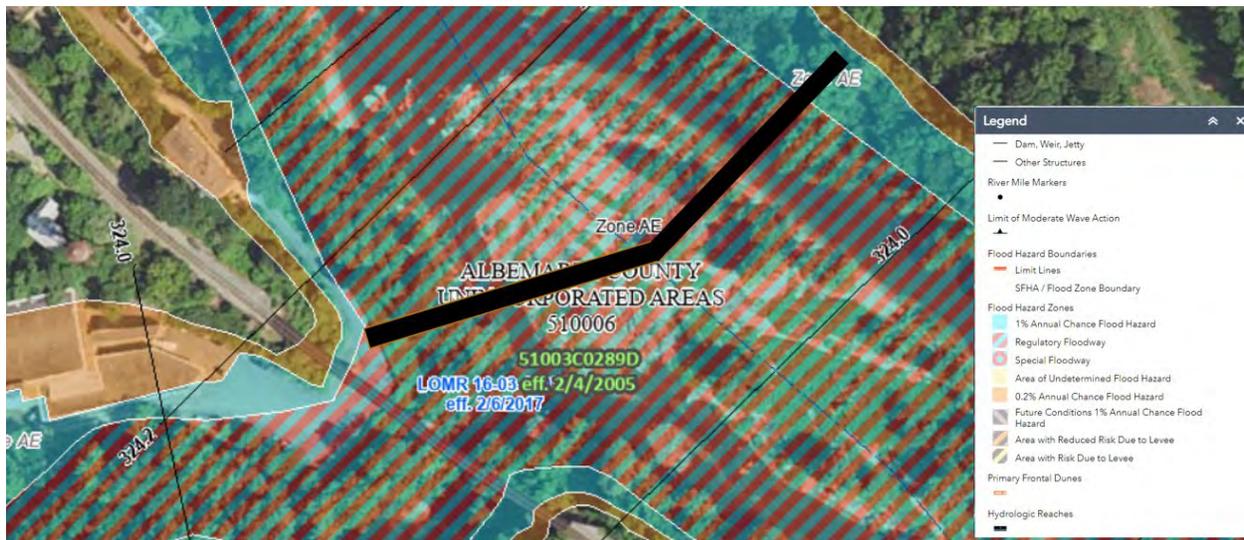


Figure 10. 100-Year Floodplain at the E. Market Street location.

## Transit Connections

As part of considering overall improvements to increase multi-modal access throughout the area, the Stakeholder Advisory Committee discussed how the two bridge locations could connect with the existing and future transit networks.

On the Pantops side of the river, there is an existing transit stop at the intersection of State Farm Boulevard and Martha Jefferson Drive that provides service to the hospital. Charlottesville Area Transit recently applied for a demonstration grant in collaboration with Albemarle County to pilot micro-transit services throughout Pantops, which could also facilitate an easy transit connection to the termini of the shared use path at State Farm Boulevard and Peter Jefferson Parkway.

On the west side of the river, existing transit stops are located mid-block on Riverside Avenue (approximately 0.15 miles from the proposed Chesapeake Street landing site, and 0.35 miles from the proposed E. Market Street landing site) and on Chesapeake Street mid-block between Steephill Street and Riverview Street (approximately 0.2 miles from the proposed Chesapeake Street landing site, and 0.4 miles from the E. Market Street landing site).

While there could be some opportunities to consider routes that would provide access in closer proximity to the Chesapeake Street landing site, it is likely that transit access will not be able to be located in as close proximity to the E. Market Street landing site. E. Market Street going into the Wool Factory development is narrow and will not accommodate the movement of a transit vehicle. There could be some future opportunities to expand transit access along Broadway Street, as pointed out during the Stakeholder Advisory Committee discussions. However, it would still require a longer travel distance between the E. Market Street landing site than transit can currently provide to the Chesapeake Street site.

### Water Safety/Recreational Use

The Stakeholder Advisory Committee discussed how each of the proposed bridge design options would potentially impact water safety and recreational use of the river. At both locations, the bridge designs developed as part of the feasibility study intentionally avoided the placement of piers within the waterway itself. This removes any obstacles that would have to be navigated around for those boating or floating the river. But river access would be disrupted during the construction of the bridge at either location.

### Utility Impacts

MPO staff spoke with the Rivanna Wastewater and Sewer Authority to discuss potential complications related to the placement of bridges at both locations. There is a wastewater interceptor that runs through the project area that would impact where piers could be placed for the Chesapeake Street landing site. Engineers would need to ensure that the bridge abutments and piers avoid the easement area. But RWSA also indicated that additional parking could be accommodated at this site if access to the manhole was maintained and kept cleared, so increased parking at this location would continue to be a viable option if it is an initiative that the City chooses to pursue.

The E. Market Street site does not present the same challenges regarding utilities.

### Environmental Impacts

While mitigating environmental impacts is an important factor in planning transportation projects, there do not appear to be significant differences in the environmental considerations between the two sites as far as habitat disruption or water quality considerations. The Rivanna Conservation Alliance has a streambank restoration project in Riverview Park near the Chesapeake Street landing site that they hope to undertake soon. The proposed bridge landing site would not interfere with the planned project.

The Stakeholder Advisory Committee discussed that there may be greater challenges maintaining the area around the pier located on the mid-river island at the E. Market Street landing site cleared of litter and debris. Because the site requires access from the river, there is a bigger challenge for regular maintenance at that location.

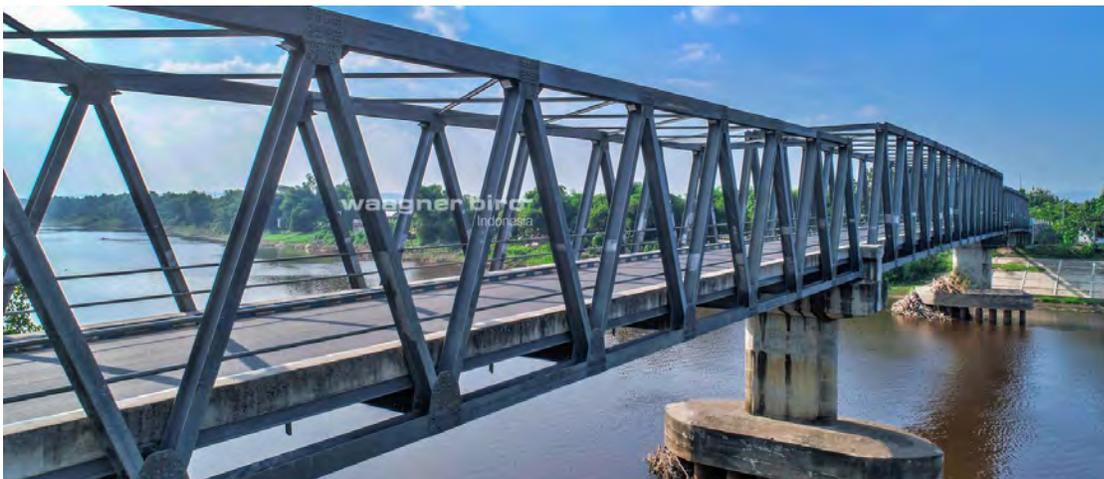
## Visual Impacts

There are two sets of considerations related to the visual impact of the bridge in the river area. One is the type of bridge that could be constructed at the two locations, and the other is the impact based on the location. There have been three designs that have been determined as feasible at the two locations. Figure 11 shows a cable-stayed bridge, Figure 12 shows a standard truss bridge, and then Figure 13 shows an arched truss bridge. The consultants that completed the feasibility study sketched a cable-stayed bridge at the Chesapeake Street alignment and an arched truss bridge at the E. Market Street alignment in the renderings that were included earlier in this document.

In terms of cost, the standard truss bridge is the least expensive design, and the cable-stayed bridge is the most expensive of the designs considered. Because there is a really lovely view along this stretch of the river, there has been consideration for developing a bridge that has an aesthetically pleasing design that will not detract from the overall experience of being on the river corridor.



*Figure 11. Example of a cable-stayed bridge*



*Figure 12. Example of a standard truss bridge*



*Figure 13. Example of an arched truss bridge*

The Stakeholder Advisory Committee also discussed how the visual impact of the bridge would be different based on the alignment that is chosen. Piedmont Environmental Council has made some 360\* drone images taken from the approximate locations of a bridge at both locations available to help understand the potential impacts. Each photo shown below includes a link to the 360\* image.



*Figure 14. Drone photo from approximate location of bridge at Chesapeake Street location. Courtesy of Piedmont Environmental Council.*



*Figure 15. Drone photo from approximate location of bridge at E. Market Street location. Courtesy of Piedmont Environmental Council.*

While there is a greater visual impact along an otherwise open stretch of the river at the Chesapeake Street alignment, the Stakeholder Advisory Committee discussed how this also provides an opportunity for a greater range of the public to experience this beautiful view that can currently only be experienced by those that are floating/boating on the river.

On the other hand, the bridge at the E. Market Street alignment would cross after a bend in the river, so it would not provide a significant disruption to the view from the river. It would provide a greater overlook opportunity to what has been referred to as the “sediment island” (which is actually a stable land mass in the middle of the river and can support the construction of a pier). The Stakeholder Advisory Committee discussed how even though the view of the river from the bridge isn’t quite as significant at this location, it does provide some overlook opportunities to make users aware of local historic resources throughout the river corridor and could be accompanied by informational markers along the bridge structure.

The Stakeholder Advisory Committee also discussed how the bridge location may impact the desired design of the bridge. While the alignment at Chesapeake Street will offer better views of the river, there was also desire expressed for the bridge at that location to have a “lighter” design to minimize the visual disruption of the viewshed. Whereas a more industrial design may not feel as out of place for the bridge alignment at E. Market Street given the nature of other industrial structures already present in the near vicinity of the proposed location.

### Park and Neighborhood Impacts

The Stakeholder Advisory Committee spent a lot of time discussing the impacts of a bridge at either location on Riverview Park and the nearby residential areas. Whether a bridge near a residential area is desirable or not is largely a matter of individual perspectives and priorities. What one person sees as a positive impact, someone else may see as a negative impact. If the bridge provides a resident with more direct access to a location of interest, they might see it as having a greater benefit, whereas a neighbor may see the same bridge as attracting additional disruption due to increased activity and changes in the natural environment.

The concerns that were raised through the Stakeholder Advisory Committee discussions include the additional strain to the parking infrastructure available in the area, additional vehicular traffic through the residential areas, especially along the narrow part of E. Market Street going into the Wool Factory development site, a desire and expectation that Riverview Park will be maintained as a natural area which would be disrupted by the bridge landing site being located at Riverview Park, and then the visual impact of the bridge landing site in proximity to Riverview Park.

Some of the impacts that were brought up as topics of concern are already existing issues, like the parking capacity and vehicular traffic along the curvy, narrow section of E. Market Street that has increased due to the development of the Wool Factory site. It is outside the scope of this bridge project to address the impacts that are currently being experienced, but the incremental impact of the bridge on the existing concerns can be considered. To the extent that it is appropriate, some mitigation measures could be implemented to help reduce negative impacts. These mitigation measures could include opportunities for landscaping or buffering the bridge at the Riverview Park side to minimize the visual disruption of the bridge to the local area, pavement markings and wayfinding signage could be considered at the E. Market Street site to improve pedestrian safety and encourage vehicles to use

Broadway to access the site. Decisions around these types of mitigation measures could be discussed at a later phase if project funding is approved.

### Project Feasibility

The primary consideration for project feasibility is how well it will score through the SMART SCALE evaluation process compared to other projects submitted during the same round. As mentioned earlier, projects are evaluated based on several different measures and given a benefits score. The benefits score is then divided by the SMART SCALE-funded cost of the project (in \$10 millions) to determine the SMART SCALE score. If there is additional funding available for the project outside of SMART SCALE such as local contributions, only the amount of funding being requested from the SMART SCALE program will be included in the project cost for scoring purposes. The full scoring and evaluation methodology can be found in the [SMART SCALE Technical Guide](#).

The measures that are evaluated to determine the benefits score are listed below, including how much each of the measures contributes to the overall project score for the CA-MPO's area type (Category B):

- Safety – 20%
- Congestion Mitigation – 15%
- Accessibility – 25%
- Environmental Quality – 10%
- Economic Development – 20%
- Land Use Coordination – 10%

Because these two bridge alignments are so close together, the benefits scores are going to be very similar between the two locations, which means that the project cost is the biggest factor in influencing how well this project will score compared to other projects.

A review of Round 4 SMART SCALE applications showed that there were two projects that included pedestrian bridges, neither of which scored well enough to receive funding. One was in Covington City with a project cost of \$6.9 million and the other was in Petersburg City with a project cost of \$13.8 million. These projects were located in different SMART SCALE area types (the area type determines how much weight is given to the different evaluation measures) which did not benefit from land use scores, so it's not a perfect comparison of how successful this project may be. But comparatively, the bridge that is being proposed is going to be expensive compared to the most recently submitted pedestrian bridge projects. While this project is likely to receive higher benefits scores based on the density of the area that will be served by the bridge on both sides of the river (contributing to the land use and accessibility scores) and eligible economic development activity within the buffer area of 0.5 miles compared to these projects, there still needs to be significant consideration of the overall project cost and how it will impact the SMART SCALE score.

### Stakeholder Advisory Committee Preference

At the meeting in February, after all of the factors had been discussed throughout the process of meeting over the previous months, the Stakeholder Advisory Committee members were asked to share their preference on the bridge alignment that should be developed into an application. Nine of the committee members were present that chose to share a preference. Of those nine, five preferred the Chesapeake Street alignment, and four preferred the E. Market Street alignment.

## Public Meeting

CA-MPO staff held a public webinar on this project on February 22<sup>nd</sup> to share the information that was discussed with the Stakeholder Advisory Committee with the public. Questions and comments raised during the webinar included concerns about the overall project cost, project feasibility, community involvement in design considerations, questions about lighting, and a desire to focus on bike/ped projects other than this bridge.

At the end of the public meeting, attendees were given the opportunity to take two polls. The first poll asked the attendees which of the alignments they preferred, and the second poll asked attendees which design they preferred at each of the two locations.

Of the attendees that responded to the poll, there was a clear preference for the alignment at Chesapeake Street. There was also a stronger preference for the bridge design at the Chesapeake Street location. Attendees showed a stronger preference for the cable-stayed design at Chesapeake Street compared to the more divided preference for the E. Market Street alignment. At the E. Market Street alignment, the highest number of attendees stated that they preferred a standard truss bridge design, but only slightly.

This indicates that the attendees at the public meeting largely agreed with the discussion held with the Stakeholder Advisory Committee members regarding the design considerations especially at the Chesapeake Street location. There was a stronger preference for that alignment, and attendees also seemed to agree that the less visually heavy bridge design would be preferable at that location.

While there was less preference for the E. Market Street bridge alignment, attendees also supported the discussion held with the Stakeholder Advisory Committee that the location was more appropriate for a more industrial style bridge, which would not have the same level of disruption for the view and would be in character with the other industrial elements near the site.

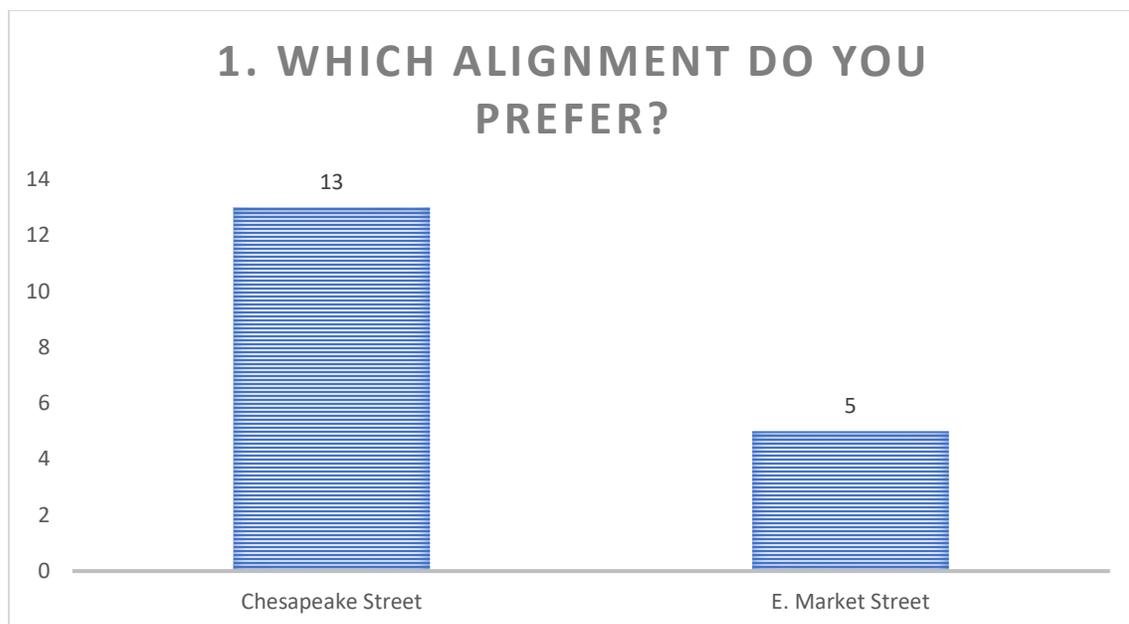


Figure 16. Alignment Preference Poll Results

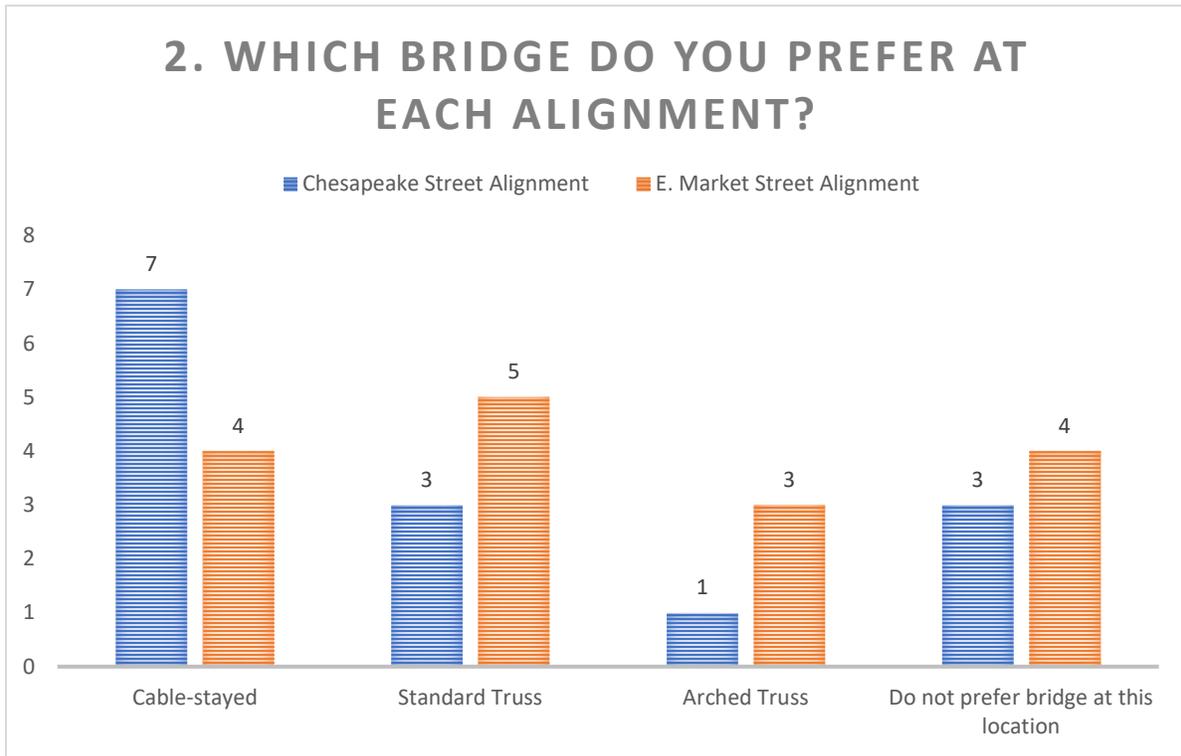


Figure 17. Bridge design preference poll

## Survey Results

In addition to the Stakeholder Advisory Committee discussions and the public webinar, CA-MPO staff developed a survey using MetroQuest to determine the preferences and priorities from the more general public. The survey was disseminated through MPO and stakeholder committee contacts, on social media, through word of mouth, by local news media, and the MPO also sent out mailings to everyone within a half mile buffer of any of the landing sites. In total, the survey received 833 responses.

The survey was developed by CA-MPO staff in collaboration with state and local staff providing feedback and providing suggestions. The draft of the survey was sent to the Stakeholder Advisory Committee for additional review and feedback. To the extent possible, feedback was considered and incorporated into the development of the survey questions.

### Priorities

The first question asked respondents to rank the importance of various factors in determining which alignment should be selected. Each factor included a short description to help respondents better understand what they were being asked to prioritize.

The screenshot shows a survey interface with a title bar 'Share your priorities' and a sub-instruction 'Please rank 5 of the 11 items above the line in your preferred order.' A vertical label 'PRIORITY RANKING' is on the left. A horizontal dashed line is followed by the instruction 'Order your top 5 items above this line'. Below this are 11 items in rounded rectangular buttons: Project feasibility, Pedestrian connectivity, Minimizing flood impacts/resiliency, Existing parking availability, Increased recreational access, Minimizing neighborhood impacts, Transit service connections, Aesthetics/Visual impact, Residential neighborhood access, Economic Development, and Maintain park as natural area. To the right of the list is the instruction 'Please drag 5 of the items above the line in your preferred order.'

Figure 18. MetroQuest Survey: Priorities

The graph below shows the results from the question about priorities. Pedestrian connectivity was clearly identified by the public as the most important factor to consider based on the survey responses. Increased recreational access and maintaining the park as a natural area were the second and third highest priorities. Interestingly, economic development, described in the survey as making connections to job and service/retail centers, was the lowest priority identified by survey respondents.

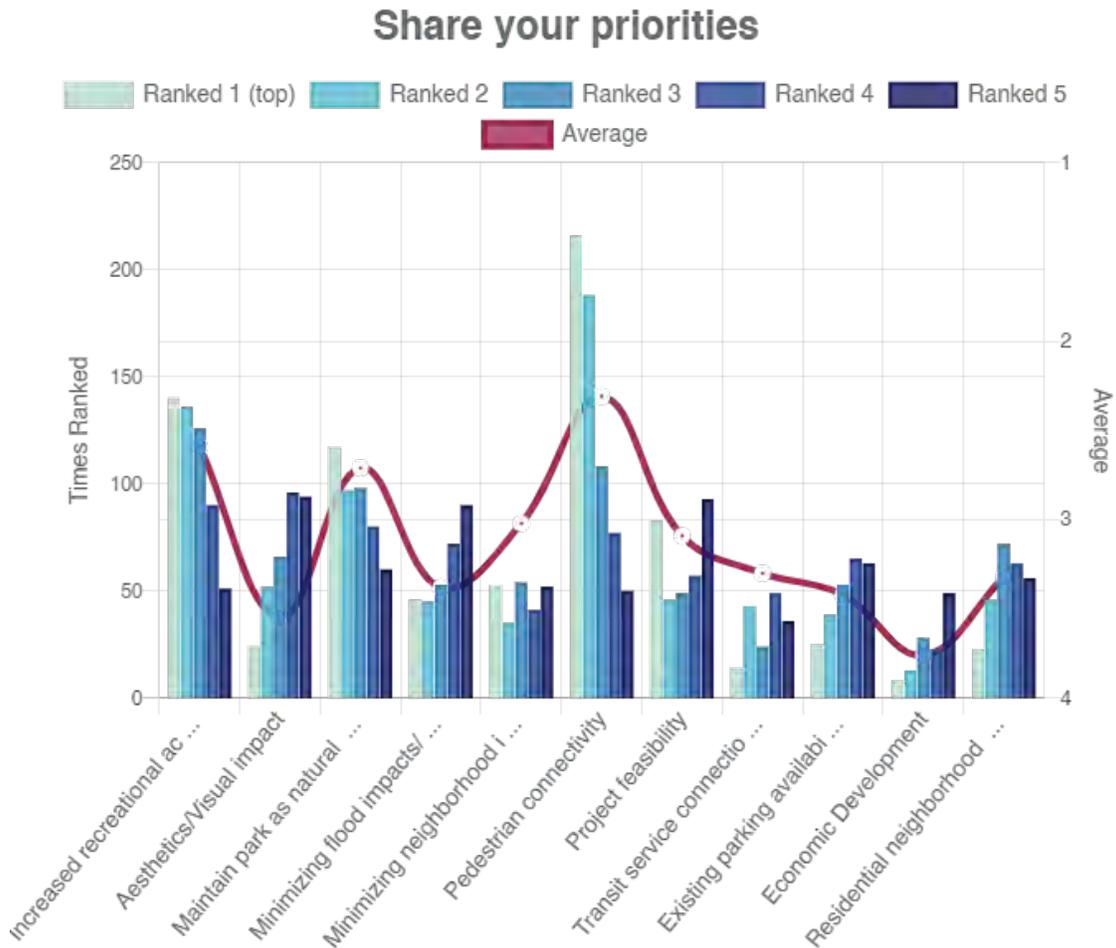


Figure 19. Community priorities

Here is a sample of comments that were included in the survey related to the priority rankings:

*The park has sufficient traffic of walkers, runners, bikers, skateboarders, playgrounders with most arriving by car. Being the drop off for another destination will compound traffic and parking and increase demand to create more parking in currently green areas.*

*This has become more of a regional park, sometimes affecting its use as a neighborhood park. it is not a large enough park to add another activity and thus increase demand for parking and rest facilities.*

*I live on Chesapeake Street and deal with heavy traffic and limited parking everyday. I don't want to see either of those increased.*

*I live in the neighborhood (in Woolen Mills, just off Market Street) and feel strongly that we need MORE neighborhood impacts, not less. It's our duty as humans and citizens to allow more people to use and enjoy the spaces we love. Onward to the future.*

*I think a bridge at Riverview Park would revitalize that area in a big way. There are some nice houses right next to the park that will be nice regardless of what we build, but the houses further up on Riverside Avenue could really use some infrastructure made for their benefit. Let's spend the money where it's needed most.*

*We have a moral obligation to decrease the dependency on cars. I work in transportation research--the more infrastructure we build, the more likely it is that people will participate in non-traditional means of transport (i.e., walking or biking). So--build more!*

### Location Preference

The second survey question asked respondents to rate the two scenarios using a five star scale based on a map and a set of relative pros/cons that were provided. The Chesapeake Street alignment received an average of 3.98 stars, and the E. Market Street Alignment received an average of 3.40 stars, showing a clear public preference for the Chesapeake Street alignment.



Figure 20. MetroQuest Survey: Location Preference - Chesapeake Street

A sample of comments related to the Chesapeake Street connection are included below:

*Would be very useful to connect the Rivanna Trail with the Old Mills Trail, creating a pedestrian loop. Has a good visual appeal as well, not too expensive, more direct, and larger streets.*

*This route will have a terrible impact on Riverview Park, which is already heavily used.*

*This will overrun one of the best parks in the city by overcrowding a single access point and reduce its appeal as a natural preserve.*

*In looking at the proposed location on the river, this seems like a more direct path across the Rivanna and thus maybe it would have less of an impact on the river. Either option, in my opinion, should rest as lightly as possible on the landscape and still provide needed connectivity and access.*

*I worry this access point will only increase the parking congestion at Riverview Park, but appreciate the connection to existing trails and parks.*

*I enjoy walking the Old Mills Trail and the trail from Riverview Park to Free Bridge, enjoying nature. This route would allow me to combine the two walks while avoiding residential and commercial areas.*

*My primary issue with this alignment is that it interferes with the existing view shed of the Rivanna from Riverview Park. I do think this alignment does a better job of lining up with existing parking and rec facilities.*

*IMO this offers the most logical place for the transit/bike/ped oriented location. This location will also allow folks from the city to take advantage of Darden Towe Park of which they share the cost with the county to maintain.*



Figure 21. MetroQuest Survey: Location Preference - E. Market Street

Comments related to the E. Market Street alignment included:

*This location serves the Wool Factory primarily and then it becomes an issue connecting to other points in the City or the trail network.*

*Much better option supporting access to economic development/employment/parking etc.*

Not only is this trail way too expensive for its usefulness, it connects to a tiny drive that would have no way of supporting this bridge.

I am extremely against this proposal. That island is full of very interesting wildlife and is a unique place to look at birds and other similar things. I think that the bridge going over it would cause significant disruptions.

If a bridge at E. Market Street occurs, how well connected will it be with the River View Park. If there is also a dedicated trail connecting to River View Park then this option would be 5 stars.

This creates a holistically new river and trail access point, a major benefit when so much is concentrated today. It also is a cleaner bike / economic commuter path aligned to broader streets (Broadway) and commercial vectors (Wool Factory through Broadway to downtown)

I prefer the connectivity of this site over the Chesapeake Street alignment, but worry about its impact on the river. It is also very close to another pedestrian bridge that has already been constructed near the Wool Factory. What does this path offer that the existing path does not?

I like the connection between this site and historic use of this connection as a horse and pedestrian crossing!

I am not sure why it is important to be near retail nor existing parking locations. This bridge is not needed for a destination location. It is for residential connectivity and to help eliminate traffic. We don't need to bring more traffic to this area. No one is going to park and eat at a high dollar restaurant then to walk across the bridge to shop at Food Lion and the Dollar Tree.

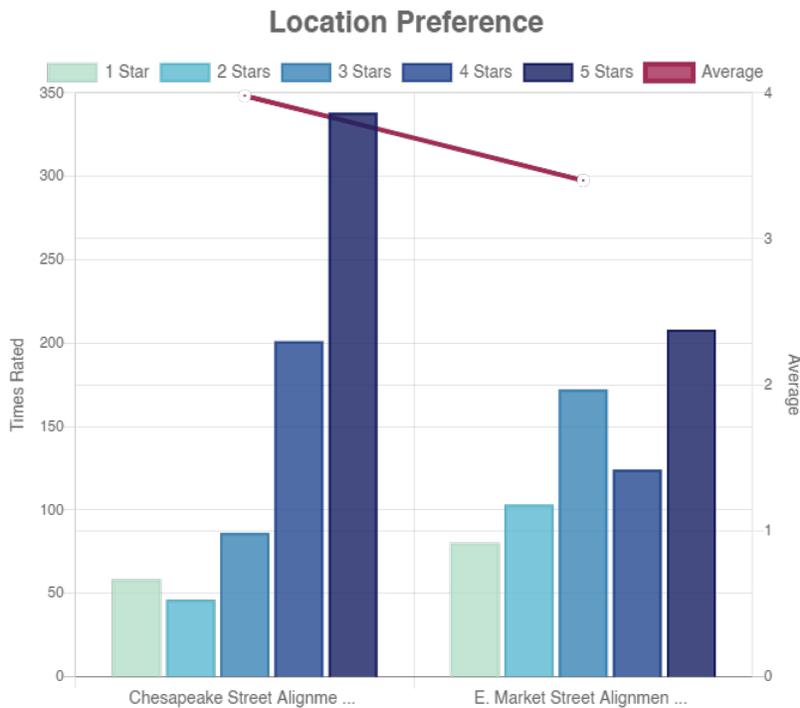


Figure 22. MetroQuest Survey: Location Preference Respondent Rankings

## Design Preference

The next question asked respondents about their design preference for a bridge at each of the locations. For both alignments, there was a preference for the cable-stayed bridge design over the other two bridge designs.

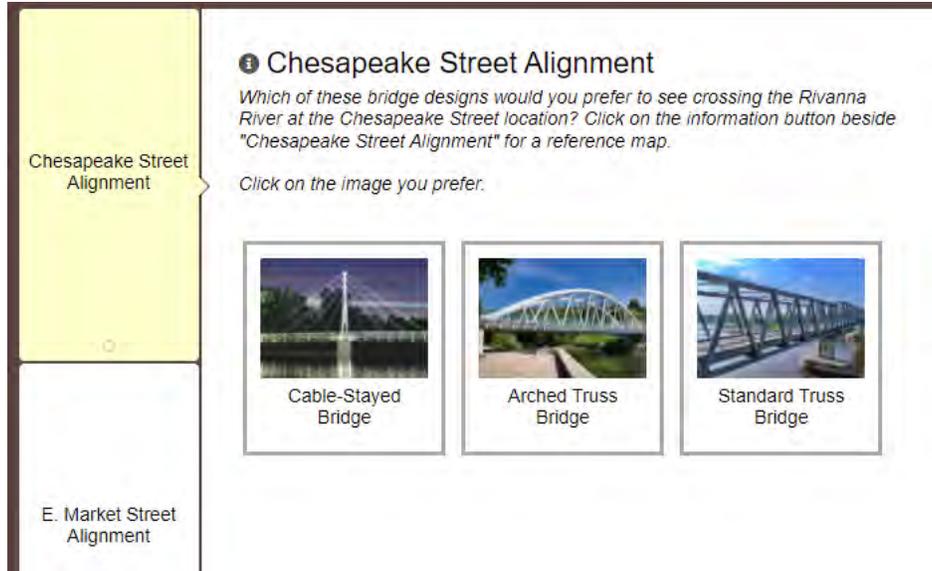


Figure 23. MetroQuest Survey: Design Preference

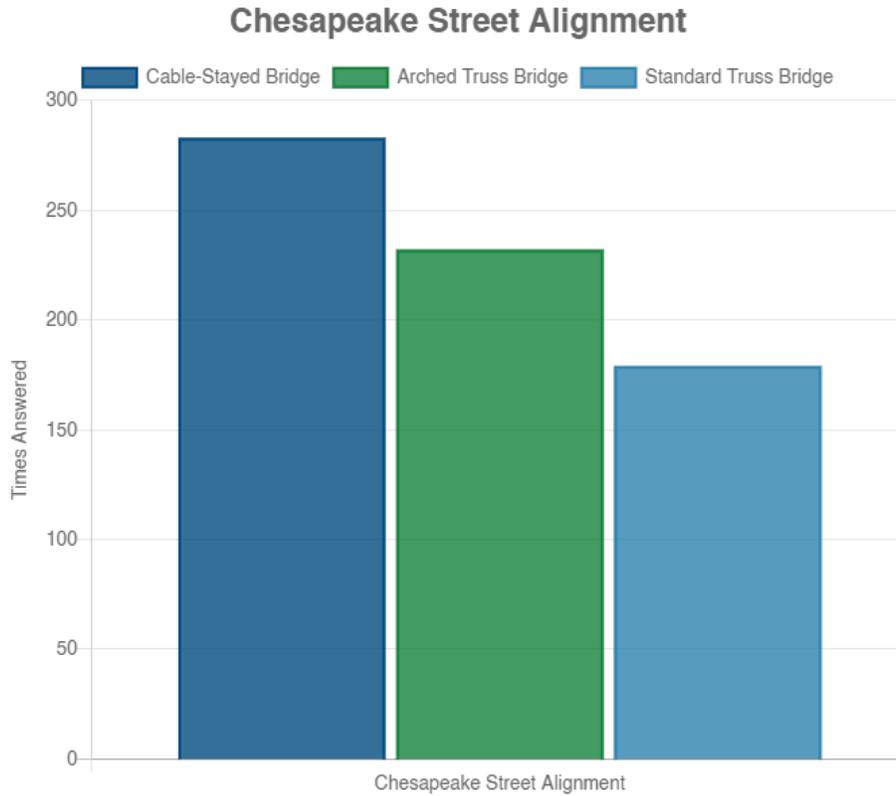


Figure 24. MetroQuest Survey: Design preference for Chesapeake Street

A sample of comments related to the design for the Chesapeake Street alignment are included below:

*I love the look of the arched truss but I do feel like the cable stay bridge would be slightly less intrusive on the overall appearance of the area. I think long term maintenance requirements would be a more important factor.*

*A visually impactful bridge should be prioritized as this new element has a chance to become a new landmark and icon for the community.*

*Keep the design simple, low cost, and low profile.*

*I'm not sure that I care--whatever is cheapest in the long run. The cable bridge blends in with the background better, though (less chunky/view blocking).*

## E. Market Street Alignment



Figure 25. MetroQuest Survey: Design preference for E. Market Street

A sample of comments related to the design for the E. Market Street alignment are included below:

*A standard truss bridge already exists at the E. Market Street site thus keeping with the same design create cohesiveness plus it is the least expensive option which should be a top priority for bridge design.*

*Keep the design simple, low cost, and low profile.*

*I am not as focused on the bridge design as the location.*

*I like this bridge type [standard truss] as it has a corollary in the proximate railroad trestle bridge near the Woolen Mill site. The cable stay bridge and the arched bridge seem too contrived.*

While the cable-stayed bridge design was preferred at both locations, these responses and comments also seem to indicate some similar sentiments expressed by the Stakeholder Advisory Committee and at the public webinar that the design impacts are more significant at the Chesapeake Street location and there is stronger support for a more industrial style of bridge at the E. Market Street location.

### Wrap Up Questions

The final set of questions was intended to better understand the users that were responding to the survey questions. In the wrap up questions, users were asked how they planned to use the bridge, from which side of the bridge their trip would originate, their race, and their household income level.

The first question shows the purposes that respondents planned to use the bridge. Respondents were able to select all uses that applied. 717 users indicated that they planned to use the bridge for recreation or exercise compared to 234 that planned to use it to access goods or services and 58 who stated they would use it to commute to or from work.

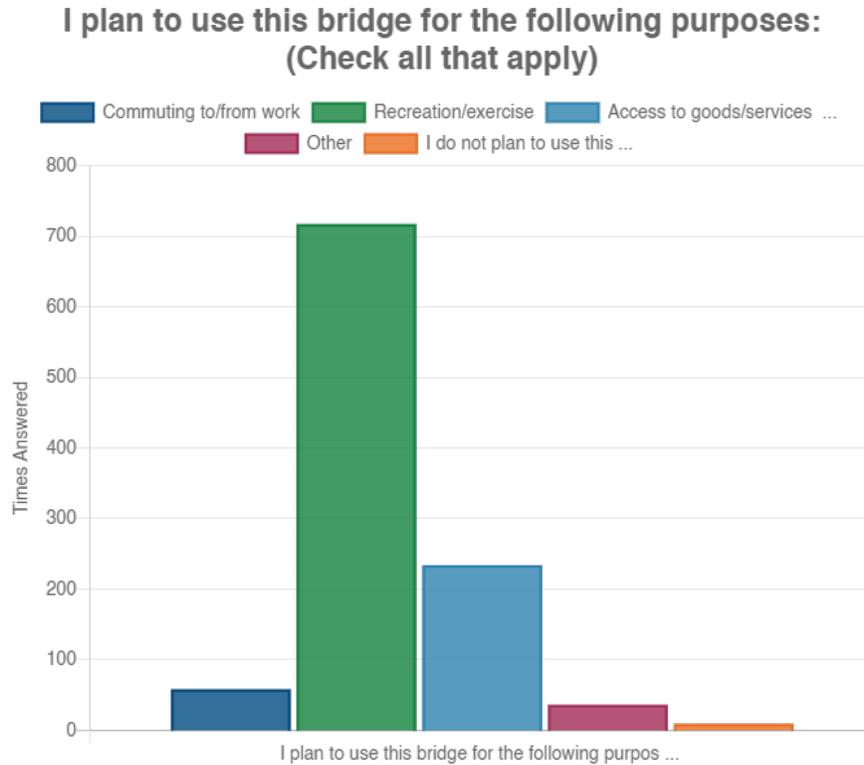
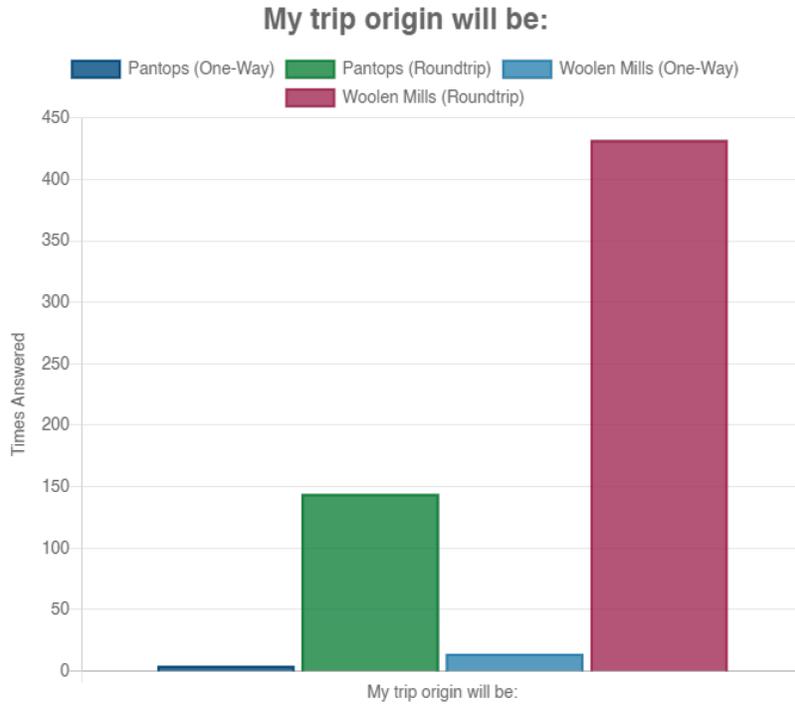


Figure 26. MetroQuest Survey: Purpose for using bridge

When asked about trip origin, 432 respondents indicated that they would be making a round trip starting from the Woolen Mills side of the bridge into Pantops compared to 144 making roundtrips in the opposite direction.



*Figure 27. MetroQuest Survey: Trip origin*

As seen in the graphs below, the respondent demographics were skewed towards white and higher income levels.

**Please select the race(s) you identify with:**

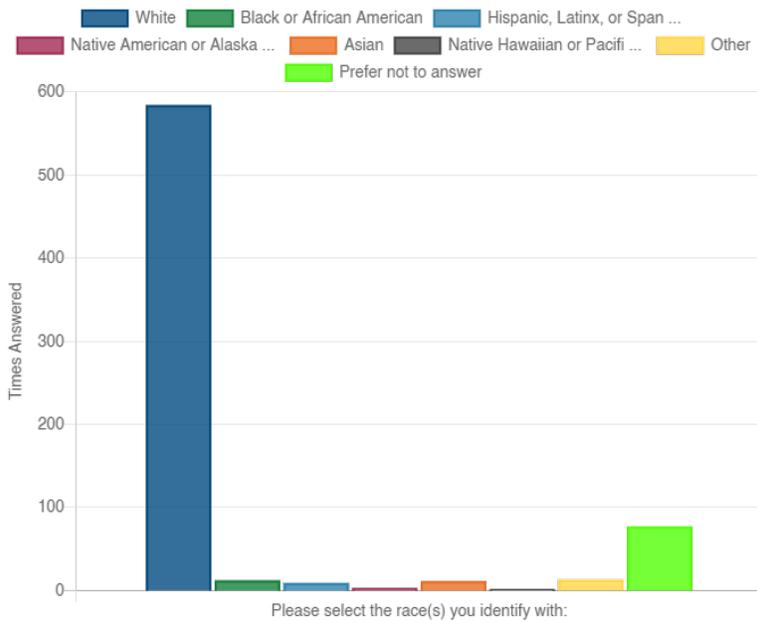


Figure 28. MetroQuest Survey: Race of respondent

**Household income**

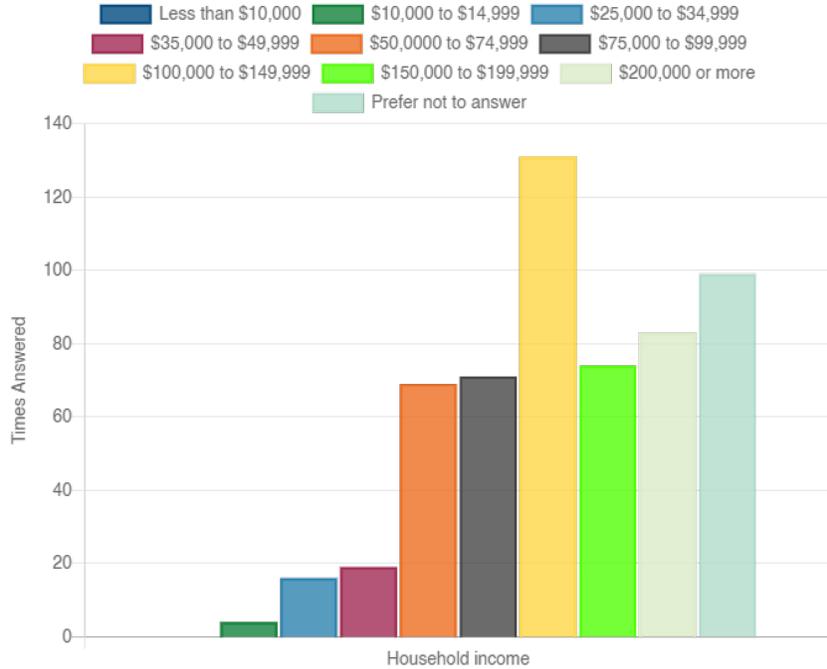


Figure 29. MetroQuest Survey: Respondent household income

## Survey Findings

The survey data all supports the general public preference for the Chesapeake Street alignment. While casual discussions with individual members of the Stakeholder Advisory Committee included the advantage of the location at E. Market Street being the connection to entertainment, survey respondents indicated that was a lower priority for them than connections to other recreational amenities in the area and connecting to the existing pedestrian network. Survey respondents indicated that both of those priorities would be better supported by the Chesapeake Street alignment.

The third most important priority was maintaining Riverview Park as a natural area, so there is some tension between potentially placing a bridge at this location and the goal of maintaining the park as a naturalized area. The current location where this alignment would land is in an open, unused portion of the park. Opportunities to replant the area is limited due to underground RWSA infrastructure that cannot be removed and there are no set plans for this portion of the park at this time, although Charlottesville Parks and Recreation staff are having ongoing conversations about potential opportunities. Some of the impacts from the placement of a bridge at this location could be offset by thoughtful buffering and landscaping to be considered if funding for the bridge is secured.