

1. Introduction

A Design Charette for the new 4th St. (SH 96A) Bridge was held on June 25, 2003 at the Pueblo Convention Center. The purpose of the charette was to present ideas, discuss possibilities, and determine stakeholder preferences for aesthetic and urban design features to be incorporated into the new bridge. The charette process includes assembling key project stakeholders, presenting aesthetic and urban design options, encouraging open discussion, and voting on preferences. Figg Bridge Engineers (FIGG) led the charette, presented options, and facilitated discussion and consensus voting. The presentation of design concepts was aided by EDAW, Inc., the project urban design and landscaping consultant.

The following agencies, businesses, and community representatives were invited to attend the charette and participate in voting on each of the features discussed. A full list of those attending is included in Appendix A.

- Colorado Department of Transportation (CDOT)
- Federal Highway Administration (FHWA)
- Pueblo City and County Government
- Union Pacific and Burlington Northern & Santa Fe Railroads
- Business Associations
- Community Groups
- Nearby Residences







Several aesthetic and urban design features were presented for discussion and voting. These included:

- Project Theme
- Pedestrian Railing
- Bridge End Treatments
- Sidewalk Treatment
- Color
- Deck Lighting
- Aesthetic Lighting

Participant preferences determined during the charette for each of the above features will be used to develop bridge design details reflective of the community's vision for their new signature bridge.

Included in this report are a summary of the presentations, discussion, and voting results for each feature. The attendance list, charette agenda, detailed voting results, and copies of the presentation are included in the appendices.













2. Design Charette Summary

The 4th St. Bridge Design Charette was held on June 25, 2003 in the Fortino Grand Hall, Room C-West of the Pueblo Convention Center in Pueblo, Colorado. Thirty-three (33) people attended the charette including 25 voting participants, six (6) representatives from FIGG, one (1) from EDAW, and one (1) from the project lighting consultant, The Szynskie Group.

Round tables with six (6) seats per table were set up in Room C-West, and a design charette manual was provided to each participant. The manual consisted of a three-ring was binder that used participants to store copies of the visual presentation handouts, preference selection result scoring sheets, comments, and notes. Two large projection screens were placed in the front of the room for digital display of the presentations. On-site computers were used by FIGG to manage the presentations. tabulate voting, and provide immediate voting results.



Charette Room Set-Up and Displays

Large format graphic displays, poster boards, and banners set up around the room illustrated existing conditions, potential project themes, and other FIGG projects around the country where aesthetic and urban design concepts, such as those discussed during the charette, have been successfully implemented. In addition, renderings of the new bridge were displayed, illustrating site constraints and showing how the new 4th St. Bridge will complement its surroundings.



Displays / Participant Discussion

These renderings served as a blank canvas from which to work. Images were displayed around the room to foster participant discussions and to allow for viewing and study during breaks and throughout the day.

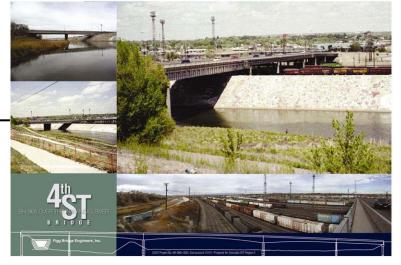




Displays / Participant Discussion



Existing Conditions Display



New Bridge Rendering Display







The design charette began at 8:00 a.m. with opening remarks from Mr. Bob Torres, Regional Transportation Director of the Colorado Department of Transportation Region 2. Mr. Torres welcomed those in attendance, thanked them for their participation, and encouraged their input on the important aesthetic and urban design topics that were to be discussed over the course of the day.

Following opening remarks, Mr. Alan Phipps of Figg Bridge Engineers began the agenda with introductions. Everyone in attendance introduced him or herself, and provided a quick description of their role or interest in the project.



DESIGN CHARETTE GOALS & PROCEDURES

Following introductions, Alan Phipps of Figg Bridge Engineers gave a presentation on Design Charette Goals and Procedures. This part of the presentation focused on explanation of the charette process for creating signature bridges with examples of how this process has been applied to other FIGG bridge projects. The presentation concluded with a list of elements to decide for the 4th St. Bridge and a discussion of feature prioritization that would occur at the end of the day.

The charette process includes assembling key stakeholders, following a set and approved agenda, presenting concepts and options, encouraging open discussion, and utilizing consensus voting to determine participant preferences. After each item is presented and discussed, participants vote on a scale of 1 to 10 (1 lowest, 10 highest) for each option. Voting low on each option shows preference to eliminate that element. Voting high on more than one option shows that each has desirable features. Participants can also provide any necessary clarification using comments on the voting forms. Results of each vote are tabulated and results reported immediately. The option(s) with the highest average score is the preferred choice of the participants and will be the design focus of the team during the next phase of the project.

The charette process was illustrated in the presentation by outlining features that have been incorporated in other recent FIGG bridge projects including the New Maumee River Bridge (Toledo, Ohio), the Wabasha Freedom Bridge (St. Paul, Minnesota), the Sagadahoc Bridge (Bath & Woolwich, Maine), the Broadway Bridge (Daytona, Florida), the Four Bears Bridge (New Town, North Dakota), and the Missouri River Pedestrian Bridge (Omaha, Nebraska & Council Bluffs, Iowa).

It was noted that at the conclusion of the charette, participants would be asked to prioritize the elements discussed. With this information, the project team will be able to





make appropriate decisions for implementation of features fitting within the final CDOT project budget.

The presentation concluded with a description of charette logistics and details.

PROJECT OVERVIEW

Following the discussion on design charette goals and procedures, Mr. Steve Fultz of Figg Bridge Engineers gave a Project Overview. This presentation provided background information on:

- Project Study and Construction Limits
- Project Schedule
- Site Description and Crossing Challenges
- Existing and Proposed Conditions
- Project Goals, Constraints, and Critical Issues
- Proposed New Bridge Alignment
- Details of the Proposed Structure

Three-dimensional renderings and a "fly-through" animation were included at the end of the presentation to give the participants a vision of the new bridge.

SITE TOUR

At the conclusion of the Project Overview presentation, participants boarded a chartered bus for a tour of the site. The tour followed 4th Street and crossed the existing bridge going both west and east to give a sense of the site and location of the new bridge. The first stop on the tour was the Midtown Mall parking lot on the east end of the bridge. Participants unloaded and walked what will be the eastern end of the structure. From this vantage point, FIGG discussed how the new bridge alignment (North Alignment) would pass over the existing east approach roadway fill, the Loop Ramp roadway, and the Burlington Northern & Santa Fe / Union Pacific Railroad yard. Following the Midtown Mall Stop, the bus was re-loaded, and participants taken to the next stop at the top of the bluff on the west side of the bridge. Participants unloaded the bus and walked around the existing trail system in this area discussing how the new bridge will cross the Arkansas River and floodwall on this end of the structure. The bus was then re-loaded and returned to the Pueblo Convention Center for continuation of the charette.







Participants Discuss the New Bridge from the Eastern Approach Near Midtown Mall

Charette Participants on the Bus Tour





Participants Discuss the Western end of the Bridge while on the Arkansas River Trail

PROJECT THEME

After returning from the site tour, Alan Phipps of FIGG began the presentation on Project Theme, the first voting item in the charette. Prior to presenting possible project themes, the concept of a theme was defined and its importance to the project discussed. Alan explained that theme is a character or feel incorporated into a design that unifies all of the features of the project. Theme can be based on past projects in the area or be something new and unique. Key aspects of the project theme include:

- Gives the Project Identity
- Creates a Sense of Community Ownership
- Creates an Icon within the Community
- Drives the Selection of Materials, Colors, and Design Forms
- Strengthens the Design Impact



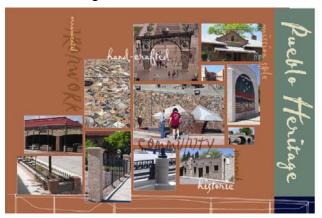
Alan Phipps of FIGG Discusses the Importance of Theme

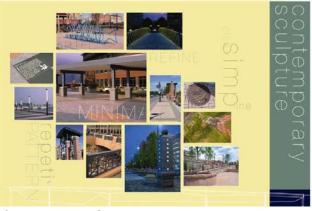
To select a theme for the project, four (4) options specifically developed from characteristics of Pueblo and the surrounding area were presented, along with a description of the character defined by each. Large format displays of each theme situated in the front of the room complemented the presentation and facilitated discussion and study on this important and guiding feature. Discussion and voting followed to determine the single theme that will be further developed to guide the design process. The four theme options presented are shown below:

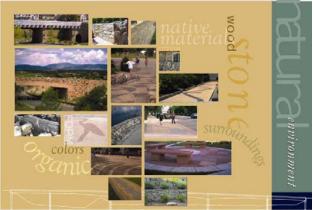




Pueblo Heritage







Contemporary Sculpture

Natural Environment



Industrial

Following the theme presentation, a group discussion was held during which the participants expressed their opinions on which of the four themes was the most appropriate for the project. The preference voting form for Project Theme was then distributed.



Project Theme Voting Results

The completed Project Theme voting preference forms were collected and results tabulated. Each participant's vote, a copy of the Project Theme voting preference form, results, and typed comments are included in Appendix C. A summary of voting results is included below.

Project Theme Preferences

Option	Score
Pueblo Heritage	6.4
Contemporary	
Sculpture	6.6
Natural	
Environment	7.3
Industrial	3.0



Conclusion

Participant comments on Project Theme are included in Appendix C. The highest average score in theme voting was for Natural Environment. However, scores for Natural Environment, Contemporary Sculpture and Pueblo Heritage were all very similar. Comments on the preference forms indicate that participants would like a blend of all three such that the clean, simple, timeless lines of Contemporary Sculpture and stylistic aspects of Pueblo Heritage are incorporated into the driving theme of Natural Environment. Pueblo Heritage concepts might include any of the categories presented including cultural, mission style, ornamental ironwork, and stonework. Participants also stated that design details should blend with those of the Historic Arkansas Riverwalk Project (HARP).

PEDESTRIAN RAILING

Pedestrian railing options were presented next. Prior to discussing specifics of possible railing types, it was reiterated that fencing meeting railroad specifications would be required for traffic and pedestrian railings over the railroad yard. The railroads require a 10-foot total height fence including solid barrier on the inside of the bridge adjacent to traffic, and an 8-foot minimum height (curved) or 10-foot minimum height (straight) fence for the pedestrian rails. The maximum fence gap is 4-inches. Away from the



railroad yard, a typical 4'-6" pedestrian rail is required due to bicycle traffic on the sidewalks. Aesthetic concepts will be incorporated around these requirements.

Four (4) pedestrian railing options were presented for discussion and voting. It was reiterated that these options were not mutually exclusive. The four (4) options were:



Solid Parapet



Open Railing - Plain



Lower Parapet with Open Railing Above



Decorative

Following the pedestrian railing presentation, the group discussed opinions on treatment of the bridge pedestrian rails. The preference voting form for Pedestrian Railing was then distributed

Pedestrian Railing Voting Results

The completed Pedestrian Railing voting preference forms were collected and results tabulated. Each participant's vote, a copy of the Pedestrian Railing voting preference form, results, and typed comments are included in Appendix C. A summary of voting results is included below.





Pedestrian Railing Preferences

Option	Score
Solid Parapet	2.1
Open Railing – Plain	5.1
Lower Parapet w/	
Open Railing Above	7.8
Decorative	7.3



Conclusion

Participant comments on Pedestrian Railing are included in Appendix C. A lower parapet with open railing above was the preferred option for the pedestrian railings on the outsides of the bridge. The score for decorative railing was very close indicating that the open railing above the parapet should be designed as decorative. This agrees with participant comments, which state that these two options should be combined.

Participants also expressed a desire to add a railing on top of the solid concrete barrier separating the sidewalk from the traffic lanes. In addition, design details should be incorporated into the sidewalk side of this barrier. Both the railing and barrier details should be consistent with the pedestrian railing details, creating a uniform experience for the user.

BRIDGE END TREATMENTS

Brad Smith of EDAW presented options for Bridge End Treatments focusing on aesthetic and urban design possibilities for accentuating the spaces at each end of the bridge. The project team developed several different options that could be further refined to reflect the selected theme and goals of the participants. Images of completed bridge projects incorporating the features discussed were used to show how these details could be used to reflect the community's vision for the project.

The following five (5) options were presented for discussion:









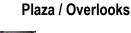
None

Horizontal Lower





Vertical Monument





Gateway

Following the presentation, participants discussed these bridge end treatment options and which might be most appropriate given the nature of the site. The discussion focused on existing conditions, project improvements, and future planned uses of the surrounding area. The preference voting form for Bridge End Treatments was then distributed.

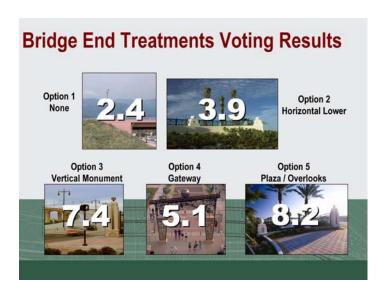


Bridge End Treatments Voting Results

The completed Bridge End Treatments voting preference forms were collected and results tabulated. Each participant's vote, a copy of the Bridge End Treatments voting preference form, results, and typed comments are included in Appendix C. A summary of voting results is included below.

Bridge End Treatments Preferences

Option	Score
None	2.4
Horizontal Lower	3.9
Vertical Monument	7.4
Gateway	5.1
Plaza / Overlooks	8.2



Conclusion

Participant comments on Bridge End Treatments are included in Appendix C. As shown by voting and feature prioritization results, vertical monuments are the most important, followed by overlooks and end plazas. Participants requested incorporation of vertical monuments and small plazas at one or both ends of the bridge, and overlooks on the bridge at one or more pier locations for river and railroad viewing.

SIDEWALK TREATMENT

Following discussion and voting on Bridge End Treatments, sidewalk treatment options were presented. The presentation first focused defining the possibility and limits of potential sidewalk treatment. Options included no treatment, continuous along the bridge, or at intermittent locations. The second part of the presentation focused on possible sidewalk treatment details such as patterns, textures and colors.

The six (6) sidewalk treatment options are shown below:









Continuous

None



Intermittent







Patterns

Textures

Colors

Participants then discussed Sidewalk Treatment options and completed the corresponding preference voting form.

Sidewalk Treatment Voting Results

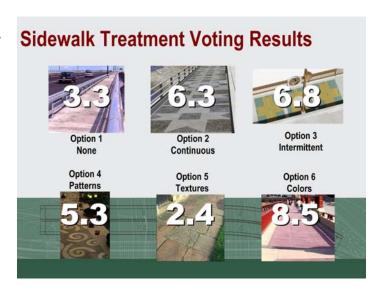
The completed Sidewalk Treatment voting preference forms were collected and results tabulated. Each participant's vote, a copy of the Sidewalk Treatment voting preference form, results, and typed comments are included in Appendix C. A summary of voting results is included below.





Sidewalk Treatment Preferences

Option	Score
None	3.3
Continuous	6.3
Intermittent	6.8
Patterns	5.3
Textures	2.4
Colors	8.5



Conclusion

Participant comments on Sidewalk Treatment are included in Appendix C. Intermittent sidewalk treatment had the highest average score, but continuous treatment was a close second. Use of color had a much higher average score than use of patterns or textures. Drawing conclusions from this voting as well as participant comments, it is apparent that the sidewalk treatment should include use of color continuously from one end of the bridge to the other with intermittent areas where distinction is made through a change in design details. These areas might include bridge ends, piers, and/or any overlooks.

COLOR

Following discussion and voting on Sidewalk Treatment, a presentation was given on possible color palates for the new bridge. Color can be integrated into structural and urban design elements to complement and enhance the other selected features. Four (4) possible color palates were presented. These are shown below:



Concrete Gray Tones



Earth Tones









Raw Materials

Contemporary

Once color palate options were established, visual displays of completed bridges illustrating each palate were shown to give the participants a feel for the look of different colors on a realistic scale.

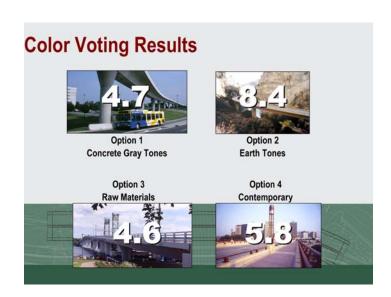
Group discussion on Color followed. Preference voting forms were then distributed and participant voting completed.

Color Voting Results

The completed Color voting preference forms were collected and results tabulated. Each participant's vote, a copy of the Color voting preference form, results, and typed comments are included in Appendix C. A summary of voting results is included below.

Color Preferences

Option	Score
Concrete Gray Tones	4.7
Earth Tones	8.4
Raw Materials	4.6
Contemporary	5.8



Conclusion

Participant comments on Color are included in Appendix C. Charette participants overwhelmingly selected Earth Tones as the preferred color palate for the project.





However, they commented that the use of contemporary highlights should also be incorporated in a limited fashion. This might include treatment of railings, light fixtures, end treatment details, points of interest, or other local elements. Participants referenced the HARP Project, Pueblo Sun Logo, and images of the Wabasha Freedom Bridge in St. Paul, Minnesota as examples.

DECK LIGHTING

Two presentations were given on lighting. The first presentation, given by Steve Fultz of FIGG, focused on options for required traffic lighting on the bridge. Aesthetic lighting was covered in the second presentation, given by EDAW.

Lighting of the bridge deck is required for safety; however, options exist for pole locations. This is an important consideration given the presence of wide multi-use sidewalks on each side of the bridge. Pole location should compliment sidewalk treatments while providing required lighting levels.

Lighting context was also explained. Since the structure crosses the Pueblo railroad yard, under-viaduct lighting will be required. This entails installation of lights on the piers and underside of the bridge to provide adequate light for railroad facilities, as per their requirements. Under-viaduct lights are also required to light the Loop Ramp roadway passing under the structure at the east end. Floodlights mounted on high towers provide overall lighting of the railroad yard. These will remain, except that two towers intersected by the new bridge alignment will require replacement. High-mast style lights will be used with directional fixtures meeting "Dark Skies" legislation, thus reducing glare, over-lighting, and spillover of light from these towers. The Midtown Mall and surrounding areas at both ends of the bridge are also lit. This lighting context is important to consider when making lighting decisions for the project.

After completion of the lighting context discussion, three (3) options for Deck Lighting were presented:



Centerline of Bridge



Edge of Deck



Following the presentation, there was a group discussion on deck lighting and the location of lighting poles and fixtures. Mr. Will Mettling from The Szynskie Group (consultant) was in attendance to answer additional questions on lighting and electrical design possibilities. The preference voting form for Deck Lighting was then distributed.

Deck Lighting Voting Results



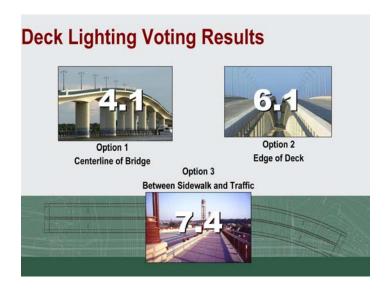
Between Sidewalk and Traffic

The completed Deck Lighting voting preference forms were collected and results

tabulated. Each participant's vote, a copy of the Deck Lighting voting preference form, results, and typed comments are included in Appendix C. A summary of voting results is included below.

Deck Lighting Preferences

Option	Score
Centerline of Bridge Edge of Deck	4.1 6.1
Between Sidewalk	
And Traffic	7.4



Conclusion

Participant comments on Deck Lighting are included in Appendix C. Participants selected between the sidewalks and traffic lanes as the preferred location for deck lighting poles. This location highlights the separation of pedestrians and vehicles and provides the opportunity to either mount pedestrian lights to the same poles, or place them along the same line of sight at a regular interval between the deck lighting poles.





AESTHETIC LIGHTING

The Aesthetic Lighting presentation explained that the lighting context previously discussed is also important when considering aesthetic lighting possibilities. The context could influence the ability to benefit from certain light sources within the urban lightscape.

Aesthetic lighting options discussed are not required for safe use of the bridge; however, aesthetic light can greatly affect the character of the structure in the evening hours.

Six (6) options for Aesthetic Lighting were presented. These are shown below:



Necklace (String of Pearls)



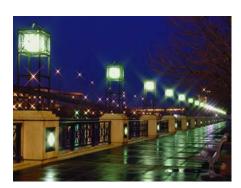




Soffit Lighting



Pier Lighting



Sidewalk Accent Lighting



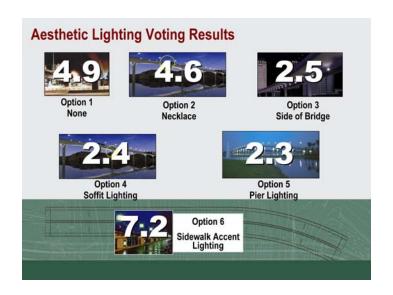
Following the presentation, participants expressed their views on the possible aesthetic lighting treatments and possible benefits given the lighting context presented. Participants then completed the preference voting form for Aesthetic Lighting.

Aesthetic Lighting Voting Results

The completed Aesthetic Lighting voting preference forms were collected and results tabulated. Each participant's vote, a copy of the Aesthetic Lighting voting preference form, results, and typed comments are included in Appendix C. A summary of voting results is included below.

Aesthetic Lighting Preferences

Option	Score
None	4.9
Necklace	4.6
Side of Bridge	2.5
Soffit Lighting	2.4
Pier Lighting	2.3
Sidewalk Accent	
Lighting	7.2



Conclusion

Participant comments on Aesthetic Lighting are included in Appendix C. Due to the uncertainty from the presence of multiple other light sources in the immediate vicinity, participants chose sidewalk accent lighting as the only form of aesthetic lighting to include. However, several comments were made that the Necklace lighting option should be considered as an extension of the sidewalk accent lighting (shine both in towards the sidewalk and outwards away from the bridge) if this lighting would be visible through the high-mast yard lights, under-bridge roadway and under-bridge railroad yard lights. It was also suggested that the deck and pedestrian lights could accomplish the necklace effect.

FEATURE PRIORITIZATION

Next, the importance of feature prioritization was discussed. By prioritizing the aesthetic and urban design features discussed during the charette, the project team will have clear direction on what features are the most representative of the community and the most



important to the participants. This will help the team refine the design focus and make decisions on feature implementation in accordance with the CDOT project budget.

During the charette, the participants decided that a more detailed list of options would enhance the prioritization of the Bridge End Treatments feature. As such, this feature was subdivided into vertical monuments, plazas, and overlooks.

The features for prioritization (as modified by the participants) included:

- Pedestrian Railing
- Vertical Monuments
- Plazas
- Overlooks
- Sidewalk Treatment
- Color
- Aesthetic Lighting

Following a brief discussion, the preference form for Feature Prioritization was distributed and instructions given to modify the form for the additional items as discussed above.

Feature Prioritization Voting Results

The completed Feature Prioritization voting preference forms were collected and results tabulated. Each participant's vote, results, and typed comments for Feature Prioritization are included in Appendix C. A summary of voting results is included below.

Feature Prioritization Preferences

Option	Score	Rank
Pedestrian Railing	8.0	2
Vertical Monuments	8.2	1
Plazas	5.4	6
Overlooks	7.0	4
Sidewalk Treatment	5.8	5
Color	7.4	3
Aesthetic Lighting	4.5	7

	Score	Rank
Feature 1 Pedestrian Railing	8.0	2
Feature 2 Vertical Monuments	8.2	1
Feature 3 Plazas	5.4	6
Feature 4 Overlooks	7.0	4
Feature 5 Sidewalk Treatment	5.8	5
Feature 6 Color	7.4	3
Feature 7 Aesthetic Lighting	4.5	7
		1





Rearranging options according to rank indicates that implementation of vertical monuments is most important to the participants, followed by pedestrian railing, color, overlooks, sidewalk treatment, plazas, and aesthetic lighting.



3. Summary of Results

Summary sheets with overall averaged ratings for each feature and option presented during the day were printed and distributed to the participants at the conclusion of the charette. Alan Phipps of FIGG provided a summary of these results focusing on which options the participants chose and the direction the project team would take towards developing bridge details that incorporate them.

Feature Preferences

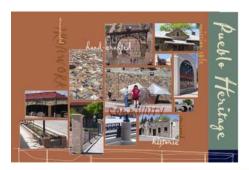
The following options were selected by the charette participants and will direct the design focus of the project:

Feature	<u>Preference</u>
Project Theme	-Natural Environment -Contemporary Sculpture -Pueblo Heritage
Pedestrian Railing	-Lower Parapet with Open Railing Above -Decorative
Bridge End Treatments	-Vertical Monuments -Plaza / Overlooks
Sidewalk Treatment	-Continuous -Intermittent -Colors
Color	-Earth Tones
Deck Lighting	-Between Sidewalk & Traffic
Aesthetic Lighting	-Sidewalk Accent Lighting

A collage of photographs depicting the selected options is shown on the following page. These preferences will be used by the design team to further refine and develop details appropriate for the selected themes, creating a unique and exciting new 4th Street Bridge for Pueblo.



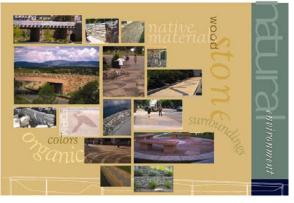














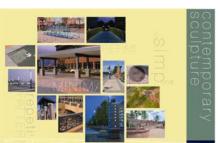
















Feature Prioritization

Below is the order of importance determined from a feature prioritization vote taken after all features had been presented, discussed, and voting results provided. Only those features whose implementation is optional were included.

Feature	<u>Score</u>	Rank
Vertical Monuments	8.2	1
Pedestrian Railing	8.0	2
Color	7.4	3
Overlooks	7.0	4
Sidewalk Treatment	5.8	5
Plazas	5.4	6
Aesthetic Lighting	4.5	7

