

Dos Rios Station

The Center for Public Interest Design

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Twin Rivers residents

Urban Strategies

River District PBID

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Smythe Academy

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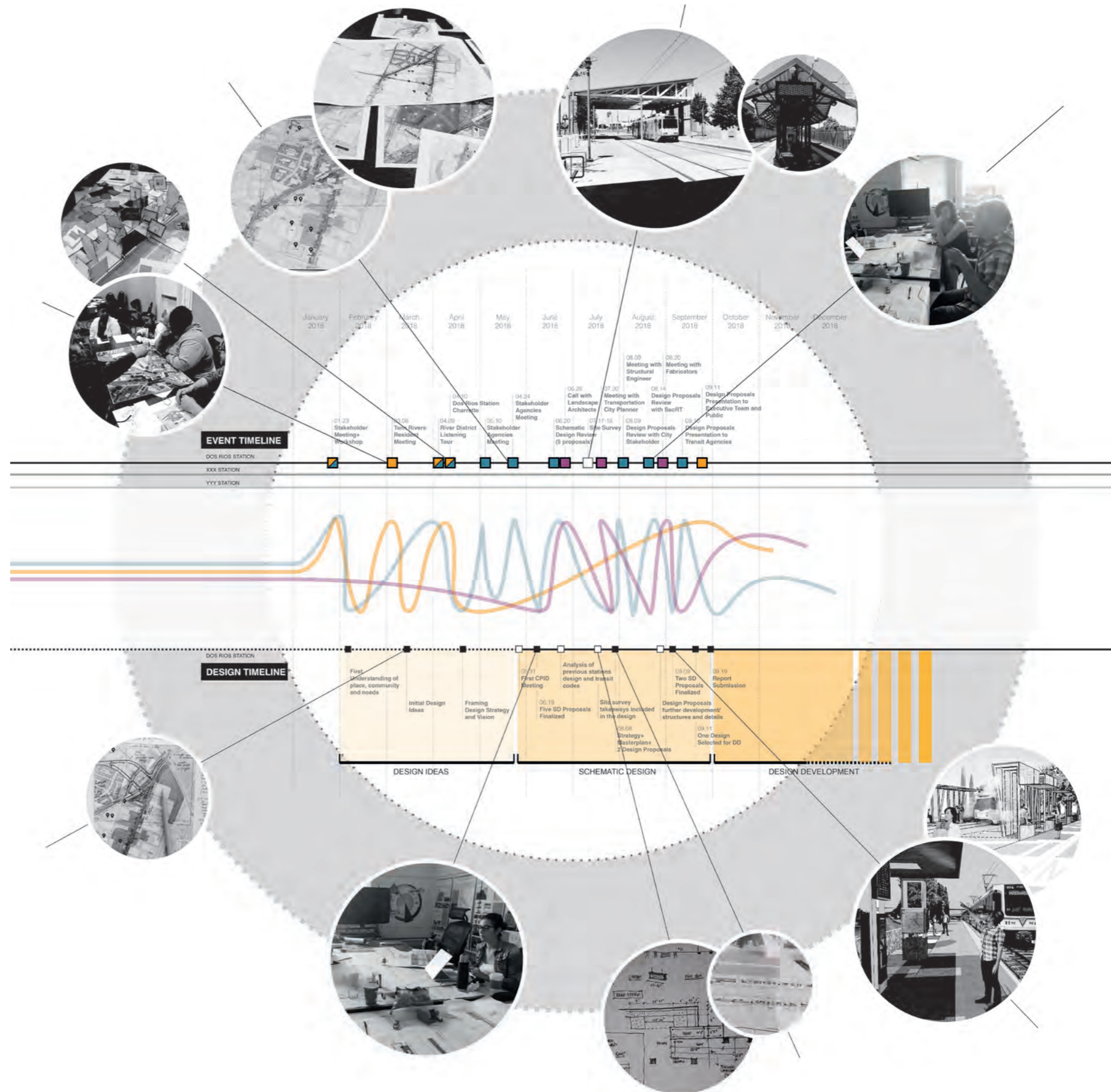
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Introduction

As part of an ongoing series of design research and engagement efforts in Sacramento, California, the Center for Public Interest Design accepted the Dos Rios Station design project in November 2017. In order to expand their principles of socially and environmentally conscious design, the team aspired to make this project a multi-organizational effort and create a station that fits within a larger shared-vision. This vision stems from the multiple stakeholders involved with the project – The City of Sacramento, Sacramento Regional Transit (SacRT), Sacramento Housing and Redevelopment Agency (SHRA), Sacramento Metropolitan Arts Commission (SMAC), Loaves and Fishes, Sacramento Area Council Of Governments (SACOG), Twin Rivers residents, Urban Strategies, River District Property Business Improvement Districts, SVA Architects, McCormack Baron Salazar, Smythe Academy, and the community members. The Dos Rios triangle has become the center of major urban development strategies like the North 12th St. and North 16th St. streetscapes, and include new transportation tracks and stops, road reconfiguration, new housing developments, and a long term goal for a new bridge. The timeline of the efforts, as well as the process of development, pose a complex and contemporary urban transportation design challenge. The following work and evaluation of practice demonstrates an effort to design a new transportation gateway to a city rich with layers of history and culture.

The key findings that informed the design proposals stem from multiple community workshops, meetings, and walking tours. An individual's local perspective on work being proposed can become meaningful to design while also empowering the existing community. While the results are formatted in a bulleted list, the insights remain much greater than a set of design parameters. The Twin Rivers community will experience the new station as a relatively significant urban change, and hopefully with a sense that their voices were heard. Providing a station that represents the identity and aspirations of a community proves to be most challenging in these scenarios. The design and research for this station aims to address local needs in the neighborhood while reconsidering the potential power in renewable energy and sustainable practices in the State of California - providing a local response that fits into a large, long-term vision. The Dos Rios station has potential to link communities through placemaking and sustainability efforts. A transportation project alone reconsiders energy use and carbon emissions, but a station that fits into a community, by providing additional amenities and resources through partnerships, establishes a precedent for resilient design.



The timeline diagram illustrates the various events along the design process that brought stakeholders together, resulting in design decisions and solutions to move forward. The events are indicated with dates on the top and the design strategies are in order along the bottom. The ribbons of color tie these aspects of the project together by showing the impact that each individual or stakeholder had on the design of the station.

Executive Summary

The Dos Rios Station area provides a wealth of opportunity to rethink the ways in which transportation can both support and transform a city as complex and culturally significant as Sacramento, California. The region claims the most diverse and robust agriculture in the United States and represents communities from all economic and cultural backgrounds. Led by sustainable values shared by the California Cap-and-Trade Program, this project provides an opportunity to create a sustainable and innovative light rail station through both architectural design and community programming, posing a contemporary, urban design challenge.

The process by which the Center for Public Interest Design (CPID) pursued this design project prioritized the community and local stakeholder expertise in Sacramento. A multi-stakeholder, transdisciplinary approach resulted in creating a larger urban vision in which the new station could participate. The research process included numerous meetings and community engagement events with the River District community to develop a project that both empowers the people of Sacramento and utilizes local assets. Through this engagement process CPID found that many concerns and aspirations could be addressed through the station design itself. In addition to community engagement, research of existing Sacramento stations and other light rail station precedents informed the design process. Analyzing the stations as “gateways to communities” resulted in the design proposals

functioning as hubs that provided additional amenities to the community and as a support system for existing assets. The ability for transportation to connect the community to city-wide resources enhances the strength of the asset-based station design.

The key findings of the research and engagement phase came from the voices of those that live and work in Sacramento. The various stakeholder meetings were planned in the hope that the community could participate at a more impactful level. Concerns such as the preservation of existing culture, safety of the station, incorporation of art and local resources, and creation of sustainable, resilient systems were heard throughout all meetings. The community needs included access to food, green space, shade, bikes, safe space for children, public art, water, public toilets, support for homeless community, connection to local culture, and support of local businesses. The feedback from stakeholders emphasized safety, city plans, durability, funding, and partnerships for programming.

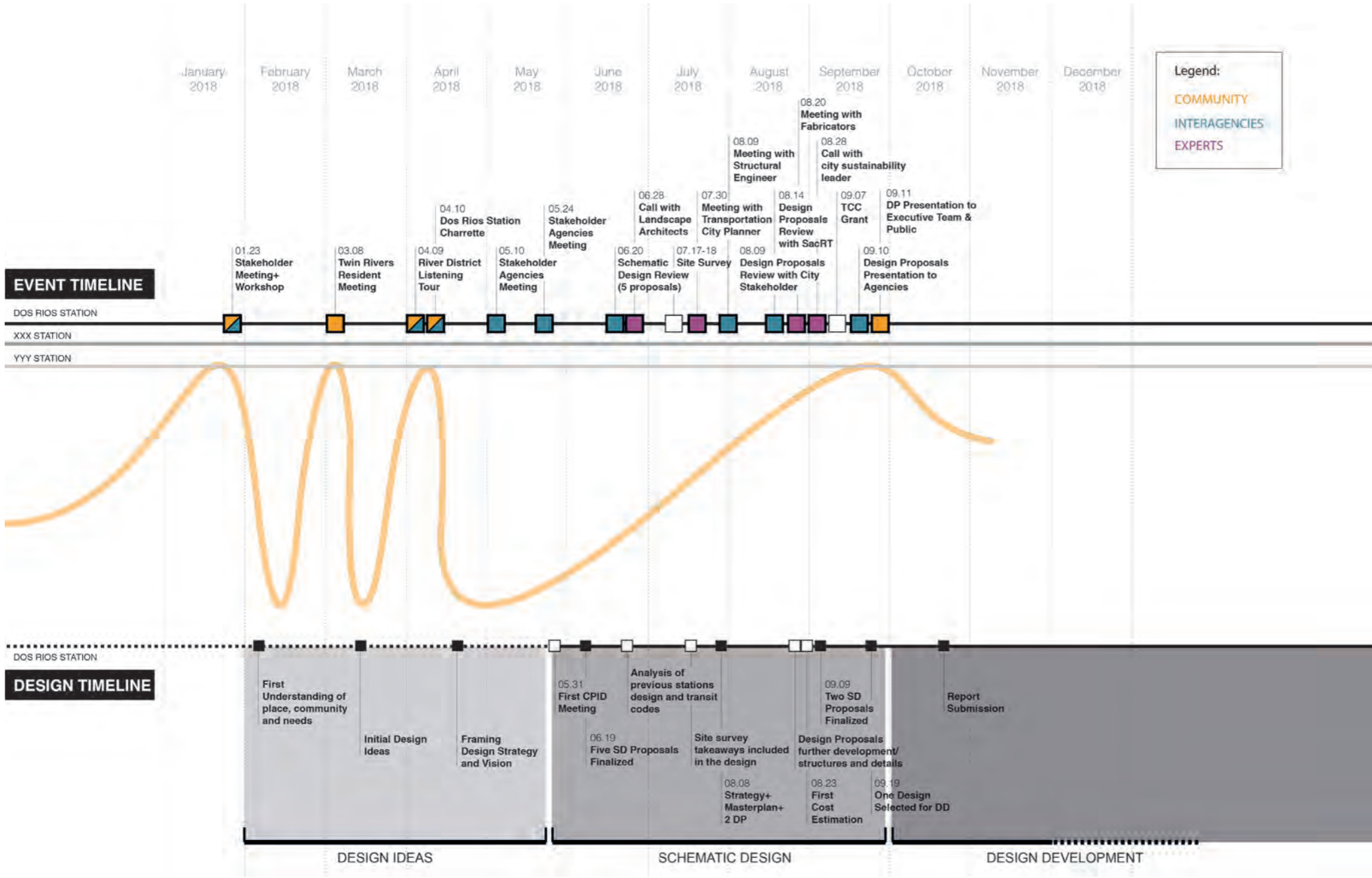
Two schematic design proposals, presented in this report, address the community and stakeholder concerns and aspirations through the design of fully functioning light rail stations for Sacramento Regional Transit that also incorporate additional, programmed amenities. They provide station amenities such as shelters, ticket machines, card readers, information screens, shaded waiting spaces, and green space. In order to enhance the potential that the station has as a community space, additional amenities have been realized through the proposal of partnerships that

are supported by the elements of the station design. For example, a column or shelter that also functions as a market stand, further activating the public space as more than transit stop. Other ideas include support of local business, musicians, and a health clinic. The recommendation by CPID for the further development and construction of the Rio Azul Station design stems from the additional capacity it holds for energy production, as well as support from the Sacramento community. The vision for this station is one of an intermodal nature, providing multiple forms of transportation to the residents of Sacramento and supporting a more sustainable future. Community feedback praised the station design for its name, extensive solar energy production, connection to the river, creative ‘amenities columns,’ material choice, green space, use of Jump Bikes, market stands, connection with housing through public art, as well as its safety, durability, and visibility design features. The station proposes an adaptation over time to address the phasing out of high board trains, as well as the incorporation of new technology, such as wayfinding information screens. The extensive landscaping and water detention design adds to the sustainable resilience of the station.

Participatory Process

Community Meetings

Since mid-January 2018 the Center for Public Interest Design (CPID) has been working with Sacramento Regional Transit (SacRT) toward the design of the Dos Rios light rail station. A key component in this process has involved reaching out to the full range of stakeholders over several months to gather feedback that will inform the station design. In support of the community engagement and station design efforts, the CPID has been creating new tools of engagement, researching precedents and project background, and formulating design concepts. The following descriptions of events are further explained in the Dos Rios report in appendix A.



Timeline depicting community engagement process.

Stakeholder Meeting/Workshop

SacRT and CPID invited stakeholders for a discussion on station concepts for Dos Rios (new station), South Sacramento (an existing station), and Rancho Cordova (an existing station).

Date: January 23, 2018 1:00 – 4:30 pm

Subject: Three LRT Stations

Location: Twin River Community Room 321 Eliza Street

SacRT and CPID invited stakeholders for a discussion on station concepts for Dos Rios (new station), South Sacramento (an existing station), and Rancho Cordova (an existing station).

1:00 – 1:15 Introductions

1:15 – 2:15 PSU Center for Public Interest Design –
Outreach and Design Approach

2:30 – 3:15 DOS RIOS AREA – Summary of Planning,
Projects, and Visions from City of Sacramento and SHRA.

3:15 – 4:30 DOS RIOS Station

SacRT and CPID led discussion with the City, SMAC, SHRA, SACOG, River District PBID, and the Twin Rivers Neighborhood, for their critique of previous design efforts, as well as their thoughts, visions, and hopes for the new station design.

Workshop Takeaways

Dos Rios Station Should:

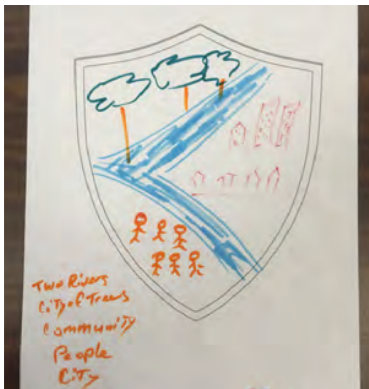
- *Meld new and old
- *Recognize the commercial context
- *Provide safety and protection
- *Integrate with public art efforts
- *Emphasize accessibility
- *Help change perceptions about district
- *Provide much-needed local amenities
- *Be sensitive to large homeless population
- *Serve as Front Door / Gateway



Looking down tracks at the end of the Dos Rios Station Site.



Dos Rios Triangle Map



Crest Drawing



"What this could be" drawing

Twin Rivers Resident Meeting

CPID invited residents of Twin Rivers and staff at Urban Strategies to offer their expertise on the community toward the design of a community friendly transit station.

Date: March 8, 2018 5:30 – 7 pm
 Subject: Dos Rios Station Design
 Location: Twin River Community Room 321 Eliza Street

CPID invited residents of Twin Rivers and staff at Urban Strategies to offer their expertise on the community toward the design of a community friendly transit station.

Conversations with residents brought attention to lifestyle and daily struggles - they feel isolated, fresh food is hard to come by, they take pride in spending time with their family. One woman mentioned that she would describe the entire area as defined by weekend BBQs. This is how she sees her neighbors and enjoys time with her own family and friends.

The kids were lively and suggested the most creative options for design, taking on leadership roles during the drawing exercise - one suggested a huge swimming pool at the station, another wanted a space for dance.

Twin Rivers Residents Meeting Takeaways

Dos Rios Station Should:

- *Provide protection from sun, rain, wind
- *Support safe crossing
- *Emphasize accessibility
- *Address lack of grocery store
- *Provide safe place for children
- *Serve as mini-park (place to be)
- *Recognize that communities eat/celebrate together



Twin Rivers residents working on the mapping activity together.



Walking the site with stakeholders



Walking the surrounding area

River District Listening Tour

Members of the CPID and SacRT teams spent the day meeting with strategic stakeholders in Twin Rivers in a series of candid conversations aimed at informing the Dos Rios Station design. This charrette was open to all stakeholders and included representatives from the City, SacRT, Twin Rivers Housing, River District PBID, transit users, accessibility advocates, local social service providers, and more. A series of activities aimed at gathering ideas and consensus toward a station design strategy.

Date: April 9, 2018
 Subject: Dos Rios Station Design

- * Sister Libby Fernandez, Founder of Mercy Pedalers, formerly CEO of Loaves & Fishes
- * Patty Kleinknecht, Director, River District PBID
- * Melissa Jewell, Principal, Smythe Academy
- * Noel Kammermann, Executive Director of Loaves & Fishes
- * Lauren Levrant, McCormack Baron Salazar, Vice President
- * Nathan Herrero, Senior Associate Partner at SVA Architects,
- * Megan Johnson Associate Civil Engineer, Dept of Transportation, Public Works

Listening Tour Takeaways

Dos Rios Station Should:

- * Be sensitive to large homeless population
- * Enable business and residential growth (density)
- * Support bike usage
- * Serve children/students (Smythe + others)
- * Consider public toilet in area (& implications)
- * Consider addressing lack of healthy food
- * Consider providing water station
- * Help change perceptions about district
- * Serve as Gateway to downtown and capital



Stakeholders at the listening tour and design charrette.



Charrette Card Activity



Charrette at Smythe Academy

Dos Rios Design Charrette

Date: April 10, 2018, 2:00-6:00 pm
Subject: Dos Rios Station Design
Location: Smythe Academy

This charrette was open to all stakeholders and included representatives from the City, SacRT, Twin Rivers Housing, River District PBID, transit users, accessibility advocates, local social service providers, and more. A series of activities aimed at gathering ideas and consensus toward a station design strategy.

Activity 1: (1 hour) Attendees were invited to visit the site with the design team and walk around the surrounding area to understand specific issues with the site.

Activity 2: (45 minutes) Following a brief presentation about what the CPID has heard so far from stakeholders in previous sessions, the group discussed challenges and opportunities discovered on the site walk. Participants in the site walk were asked to take photos reflecting challenges and opportunities which were projected on screen for group discussion and to convey the issues for those unable to visit the site.

Activity 3: (1.5 hours) Working in 5 groups of about 6 people, stakeholders were given a tool developed by the CPID that allowed them to discuss specific aspects of the station design using a series of graphic cards. The CPID facilitated a multi-stepped process where teams would choose station elements such as program, form, material, amenities, etc. and discuss with larger group.

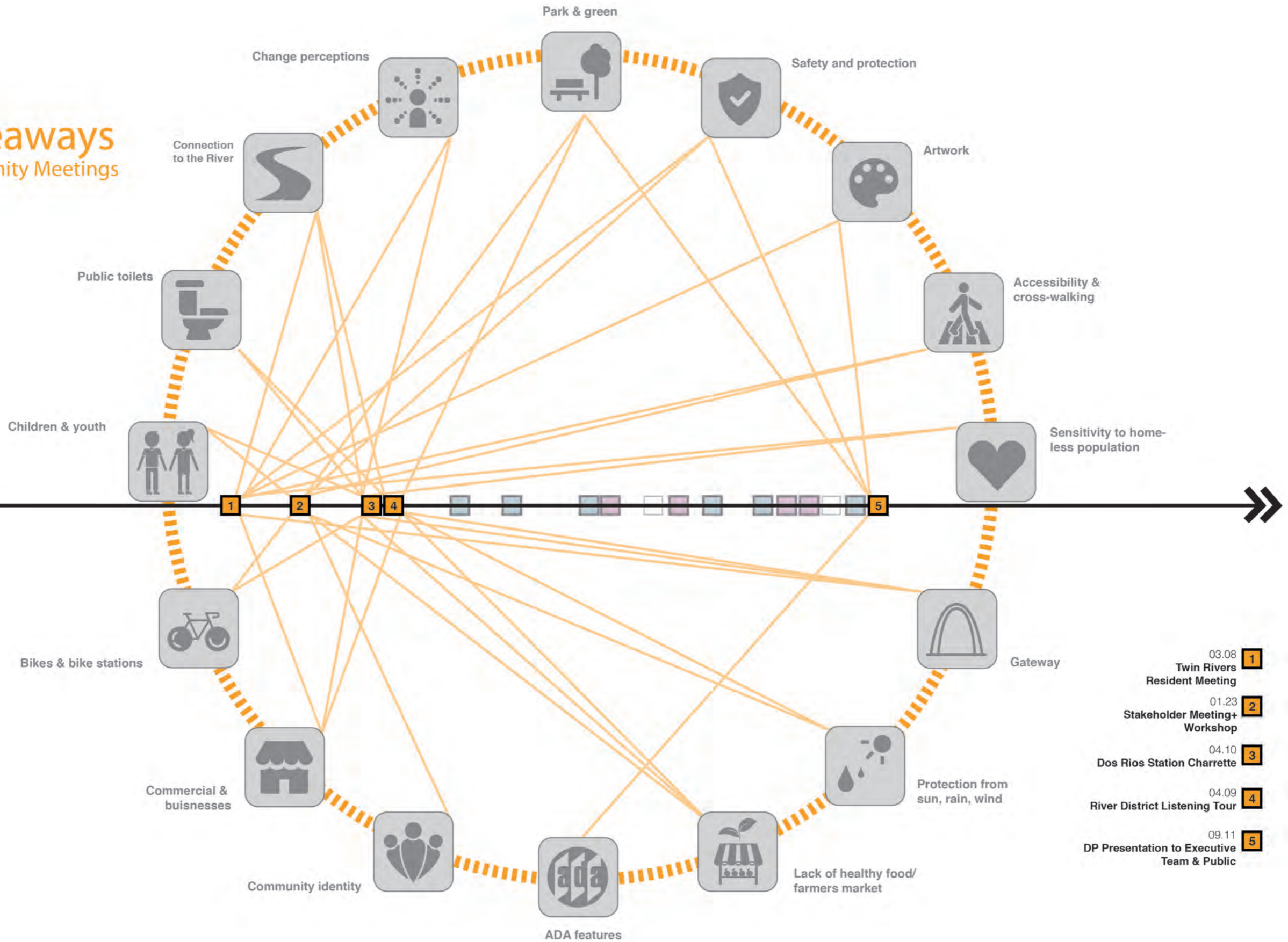
Activity 4: (45 minutes) Teams were asked to edit their stations by removing cards that weren't essential to their ideas. Teams then shared their final station design/elements with the larger group.



Residents working on the card building activity.

Takeaways

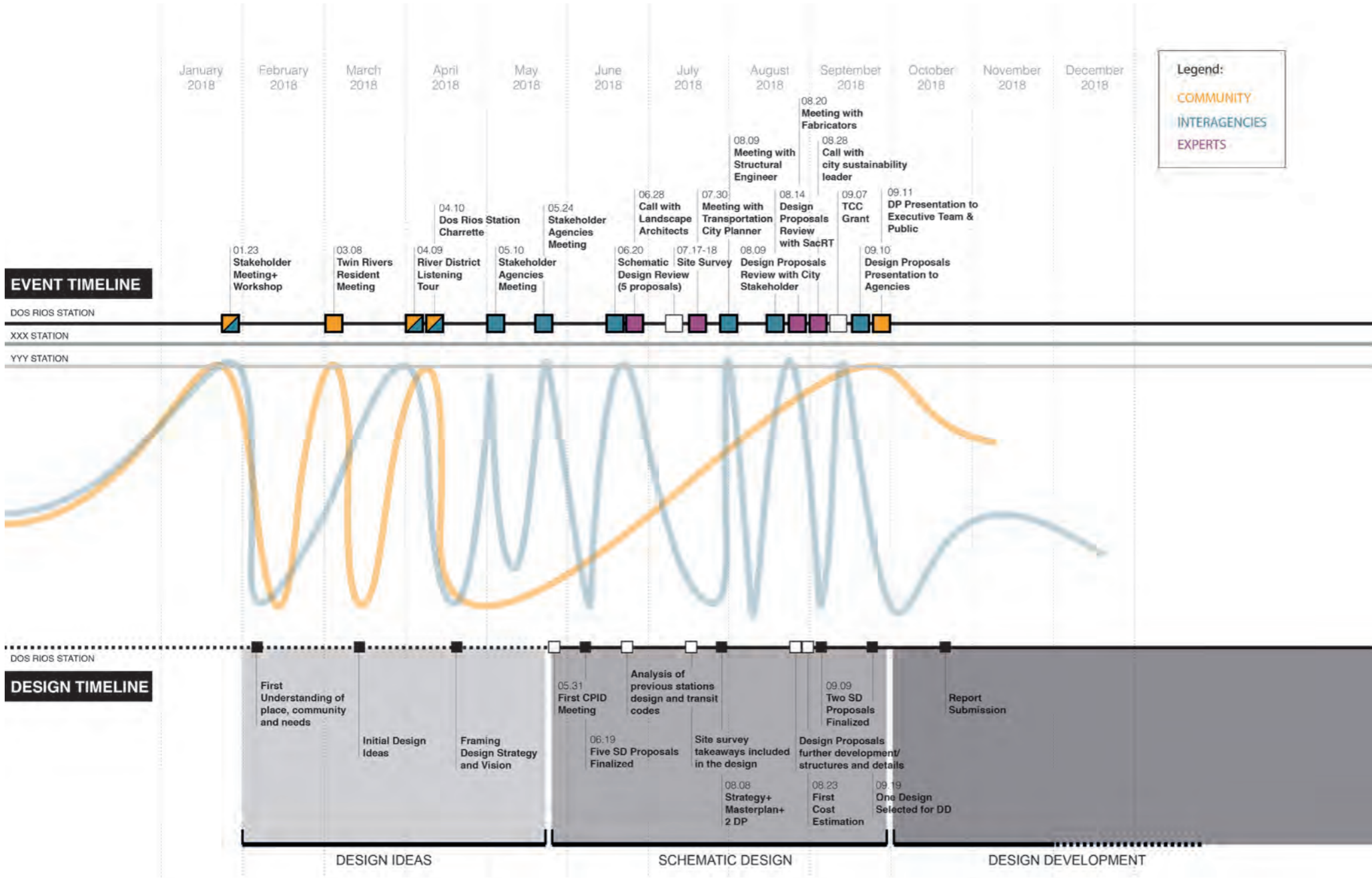
Community Meetings



Inter-agencies Meetings

The complexity of this project, composed by a variety of moving pieces, first required an understanding of what those pieces were, who was managing them and how they could productively work together. A collective conversation among the different stakeholders became essential, in order to better understand the challenges and opportunities of the project(s) while framing a collective vision for the area.

In order to achieve this, at the beginning of May 2018, the CPID suggested to have a shared conversation among the different agencies; for the first time, City partners, transit agencies and community organisation were all sitting at the same table.



Timeline depicting the overlap between community and inter-agency meetings.

Dos Rios/Twin Rivers Meeting

Date: May 10, 2018 1pm-4pm

Subject: Collaborate on a vision

Location: 300 Richards Boulevard Building

Participants: City, SHRA, SMAC, SacRT, CPID

Lead by the CPID, the meeting started by having each agency introducing itself, each member, and their respective roles. After clarifying the scope of the meeting - creating collaboration on achieving a collective vision for a “gateway” to Sacramento and its communities - a collage-map, produced by the CPID, was laid out on the table.W

For the first time, a unique map was illustrating, together, all the different projects, each updated to its latest version, revealing the intricacy and the complexity of the future development for the Dos Rios area. Through a projects-collage, this map attempted to support the conversation about visions, design impact, actions and potential collaborations surrounding the different projects. Each agency was asked to describe its project specificities, framed in space and along time, while explaining their vision for the overall development of the area and their potential contribution to it. By sharing this information with the wider audience, for the first time, an honest discussion about how different neighborhood projects could integrate with others took place while, most importantly, pointing out which aspects united the different efforts and how collaboration could be framed within this vision.

By using another similar map and some colored stickers (each color identifying a specific agency) CPID documented the conversation by labeling the information on the stickers and locating them geographically. During the meeting, the map became a cloud of colored comments, suggestions and information which significantly helped in visualizing missing elements as well as new opportunities. This powerful engagement tool revealed the key role of the Dos Rios triangle area, at the heart of the planning puzzle, and served as a first step for framing future collaborations and partnerships.
(photo of map with stickers)

Tools:

Map of projects

Site map and colored stickers

Takeaways:

-Richards Boulevard realignment is a priority in order to solve the critical street section, connect the two districts and support future development

-The Dos Rios triangle area is at core of this planning strategy and it is seen as a great opportunity for celebrating people and community identity

-Dos Rios triangle should serve as a gateway to Sacramento

-General improvement to circulation, mostly for pedestrians and bikers is needed



Stakeholder meeting with shared mapping exercise.



Richardson Blvd

Dos Rios St

N 16th St

HOUSING PROJECT

12th St

N 16th St

McCormack

Google

Suburban intent to settle the central city

possible corner road (parking)

will be identified & probably offer parking

if need to be bought

with the mid-point it became a pattern

map: they may leave

after the bridge you have to slow down to integrate into the city (12th) & you have to stop

7th St = outside street (dashed markings) and other lot markings potential for flow transition / opposite fabric - industrial

Pod = where the access to the area to park happens?

A lot of stuff

signage on the side of the lot

minutely owned (person)

piece owned by the city

not a strategic piece

No intervening build up

housing expansion large expansion with for support or replication

40M to create a transit center meeting to transit

the city owns 7th

B

D

year = possible design

who owns it?

who owns it?

E (historic building) with other things not depend from design

central city

503 Ave - the link piece

F (20-21) street it can not be built till the station is built (10M)

NO FOUND for it (20-22) with landscape

Richardson Blvd may stop here due to the presence of water tower

Pod - part of some of the city on the waterfront. restored or redeveloped all there - appears to be

ENDLESS AUTO BODY

Small or large scale vacancy (garden + more) + parking lot

Important the sidewalk for waves & PISUMS

and the building into building opportunity - but the historical site - keep your place. But it may be worth also

multiple projects completed & others

property also for a lot (but not)

could be a lot

David close the connection with the street



Richard Blv realignment has to be prioritize in order to solve the actual critical cross section, connect the two sides of river district and create a new potential core

Blocks A-B-C-D-E/ Housing project ending in 2018

This triangle is a huge opportunity for connecting to the station

SHRA purchase- Housing

Critical cross between 12th and Sunbeam

Block E- 4 stories buildings which can be pushed up in order to not depend from block F

property- left space should be purchased

The idea is to create an art corridor connecting the tunnel to the gateway

Poten for sl trans and city)

Owned by the city- Proposal for basketball courts

What this triangle can be? Let's envision a new town center here

It is a gate to the city, ideal place artwork

Owned by the city

Station: 1 year= finalized design 2 years= construction

Block F- Proposed dates of construction 2020-22/ Built after the station

Consider the interface between the station and housing

Close the access to 12th and connect the two corner streets

Potential for sale but it is protected as historical heritage

Opportunity for landscaping interventions along the cycle bollard line

Sidewalk & bike line project approved

MLS (Traffic mitigation Plan)- Potential area of impact/ It does not affect 12th Street

Lack of sidewalk and amenities on this side of the 12th Street

Improvements required for the street connecting the station to Loaves & Fishes

Important to have a sidewalk around Loaves and Fishes

16th street plan approved but no funding- need of landscaping and amenities

General improvements to circulation mainly for pedestrian and bikers should be thought

Main problems:



Dos Rios/Twin Rivers Meeting 3

Date: September 10, 2018 1:30 - 3:30 pm

Subject: Interagency Meeting for the Dos Rios Light Rail Station

Location: 300 Richards Boulevard Building

Participants: SHRA, SacRT, City, McCormack Baron Salazar, SVA, SMAC, CPID

The meeting began with SacRT introducing the different stakeholders in the room and provided a smaller discussion about potential partnerships that could aid in the success of the new light rail station design. This time allowed for questions and concerns to be vocalized in regards to the need for an agreement about community partnerships for the market, toilets, water reuse, and solar energy capacity. During this time, elements of the Transformative Climate Communities (TCC) grant application were discussed, and elaborated, in terms of the station design elements. After providing insights about ways to implement funded and programmed public spaces, potential partnerships with SMUD, and additional need for community feedback and engagement in the design process, CPID presented the two schematic station designs.

The presentation covered the entire schematic design process, highlighting meetings, key takeaways, overall design concepts, design progression, urban schemes, and two designs for the light rail station. Drawing on the success of past precedents, CPID proposed stations that function in terms of technical requirements for SacRT's light rail, but also incorporate additional amenities for the community. These amenities included public toilets, public artwork implementation, electric car and bike stations, and a proposal for a station that doubles as a farmers market. The meeting presented time for feedback about the difficulties of putting in place the different additional amenities, including concerns about funding and maintenance. However, the meeting also resulted in time to discuss the fact that winning the TCC grant relied on these types of partnerships and would benefit from them greatly. With the shared motivation of the TCC grant, certain aspects of the stations' additional amenities, all feasible within the initial budget, became more of a reality.

Tools:

Diagrams, plans and sections, larger urban design maps, etc.

Round-table discussion

Takeaways:

-The design strategies of the Rio Azul and Folded Pavilion schemes provide energy and amenities to the community, and were accepted by the various stakeholders present

-The designs also fit the requirements of the TCC grant application and will aid in the collaborative effort to win the grant funding for the Dos Rios area



Meeting and presentation of design proposals to project stakeholders.

Dos Rios/Twin Rivers Meeting 4

Date: September 11, 2018 4:30-6:30 pm

Subject: Public Presentation

Location: Smythe Academy 700 Dos Rios St.

Participants: The community of Dos RiosSHRA, SacRT, City, McCormack Baron Salazar, SVA, SMAC, CPID

The public presentation of the two schematic design proposals for the station took place in Smythe Academy, just across the way from the station site. SHRA, the City, and CPID presented work on the TCC grant, the upcoming road and track realignment plans, and the station design, respectively. The presentation called attention to the ways in which the streetscape and surrounding amenities will be improved for the community both living there and returning there after construction of the new housing. The stakeholders emphasized the amount of time and effort that has gone into the project as a whole and expressed excitement in being able to present a clearer timeline with the collaboration between SHRA, the City, SacRT and CPID. The work was described alongside images and drawings of the designs. At the end there was time for Q&A, and the audience was asked to fill out response cards with their preferred station proposal.

Tools:

Diagrams and drawings

Open discussion // Q&A

Takeaways:

- The community was not opposed to the station designs or elements
- The designs supported the narrative of the overall Dos Rios development as well as the TCC Grant application
- The community members favored the Rio Azul proposal, but liked both designs for the use of sustainable strategies, creativity, artwork, a market, and river aesthetic
- Concerns about safety, job creation, timeline of construction, and maintenance were most prevalent.

- Questions asked during the public presentation on September 11th:
- What is the timeline for completion and funding sources for the project?
 - Did the route optimization influence the change of location for this [transit] stop?
 - Was there consideration into how the station would impact 7th St. regarding connectivity?
 - How did the community influence the design?
 - Will this presentation be made at the TCC meeting?
 - Do any of the topics have to go to council or Board of Supervisors for them to go forward?
 - What kind of jobs would this create for Twin Rivers residents ages 18-64?

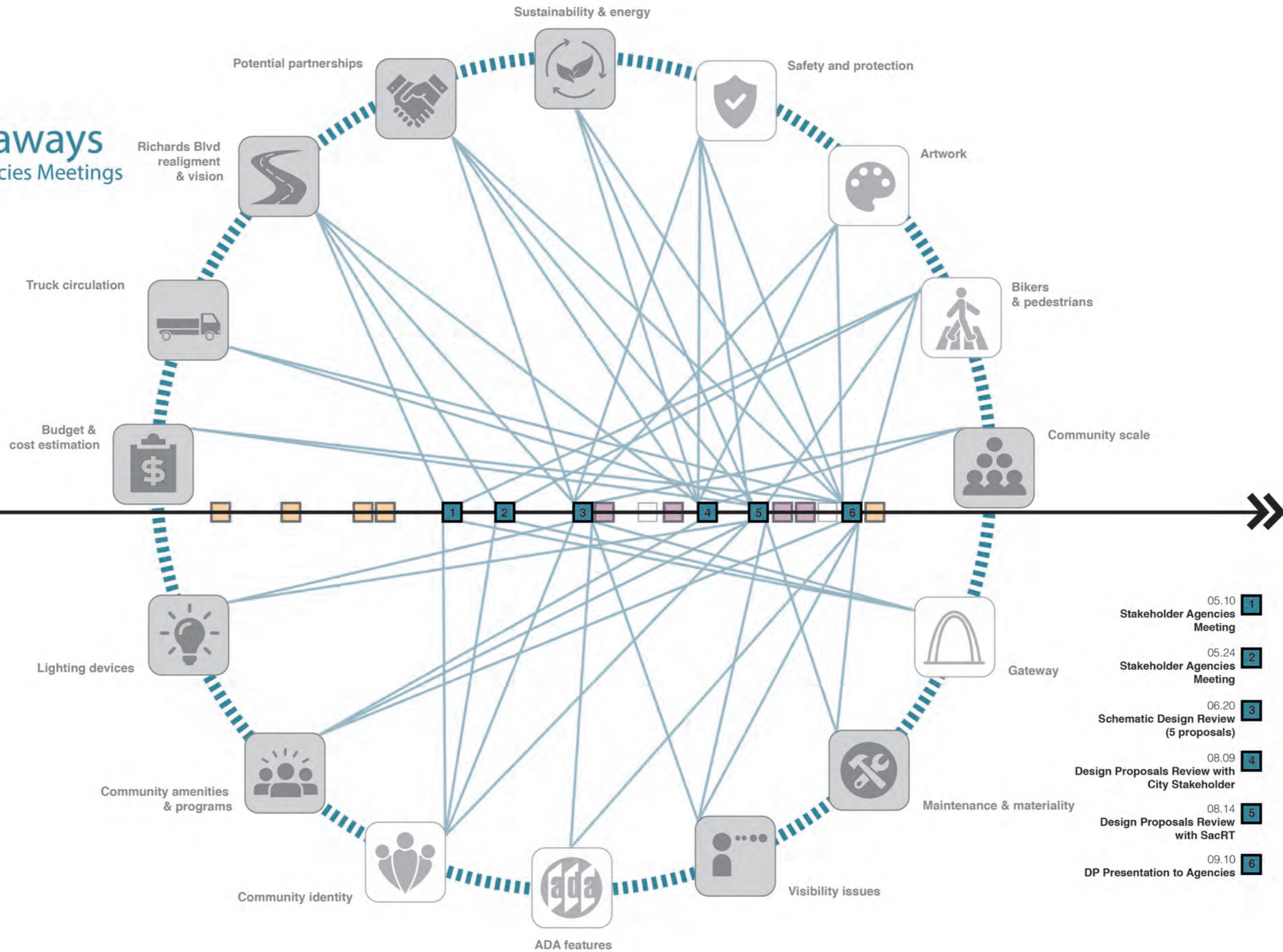
The various presenting groups responded to the questions of the community members. From the Q&A, it became clear that the multiple projects were working together in defining a greater vision for the building of the Dos Rios area. The presentation covered the community engagement aspects of the design process - community meetings, design activities, walking tours, etc. while also responding to technical information, like road realignment and its impact on the new and existing surrounding neighborhoods. These meetings and design input manifest greatly in the proposed shared programming of the space - i.e. the market, local business spaces, and safe public plaza. The timeline was explained by SacRT as cleared by the city but still a few years out in terms of breaking ground.



Public Presentation of station design proposals.

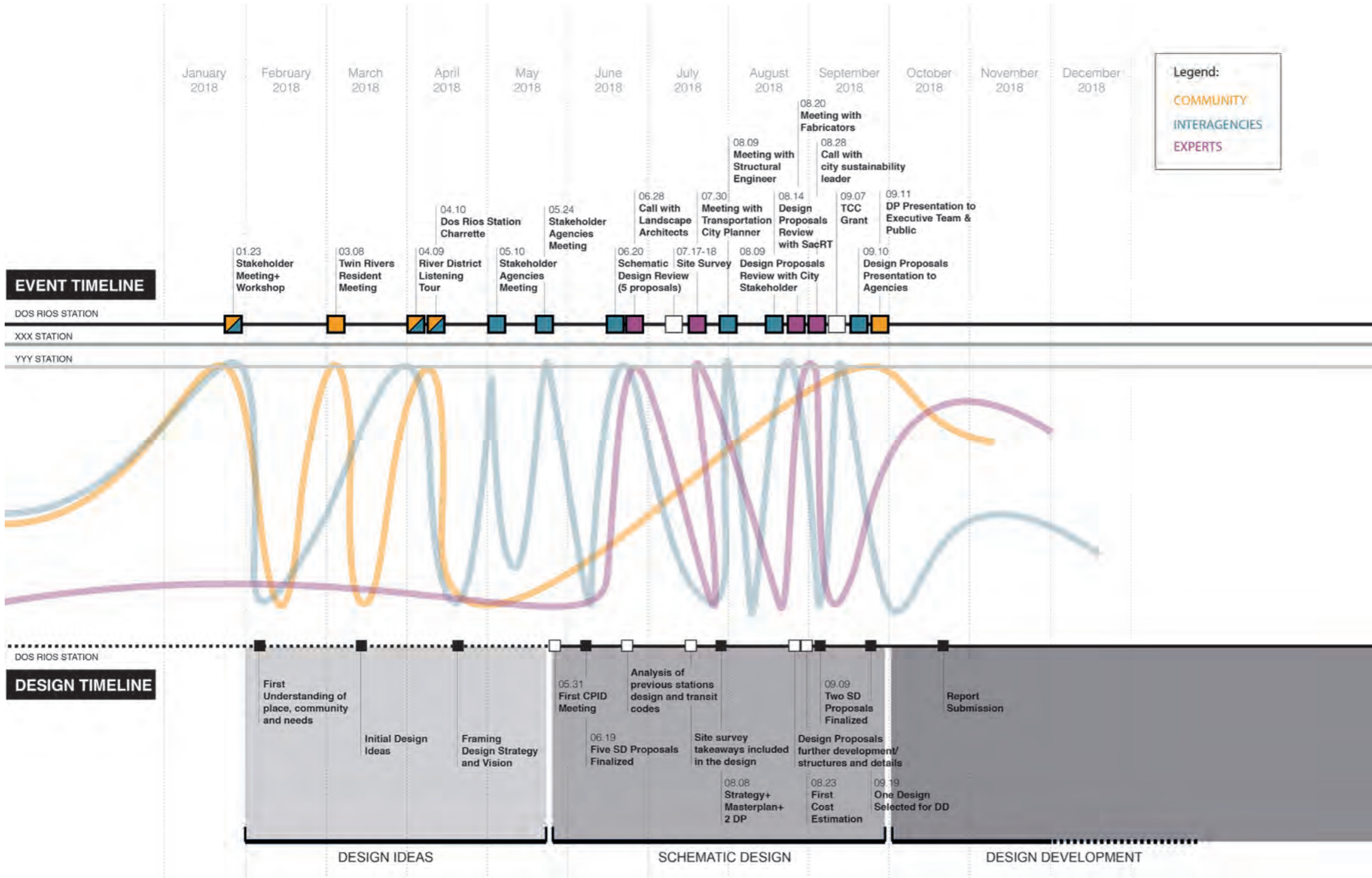
Takeaways

Interagencies Meetings



Experts Meetings

The team met with multiple consultants to guide the schematic design process. Mark Raggett, a senior planner, Carl Kloos, a structural engineer, and Figure Plant fabricators provided insights about the feasibility of the light rail station proposals. The first meeting with Mark Raggett, a senior planner in Portland, resulted in a better understanding of Portland's Transportation strategies and how they could apply to other lightrail systems. Discussion about loading, waiting, sight lines, material choice, and solar panels helped refine the proposals further. For both proposals, the meetings with Figure Plant clarified the nuances of the technical aspects of the design. These two meetings with Ben and Crystal provided information about joining strategies, material strategies, and potential moveable connections for the interactive aspects of the two station designs. In the case of the Rio Azul design, the choice to have the triangular supported elements unfold from the column was clarified in the second meeting with Figure Plant. For the Folded Pavilions, the conclusion that large movable shelters would be dangerous for the public to move led to a more stagnant, but functional market stand design strategy. Meeting with Carl Kloos for the design of the structure of each station provided insights to the correct structural systems for the seismic zone of Sacramento as well as conclusions about material choice and fabrication strategies.



Timeline depicting the overlap between all stakeholders.



Crossing at end of station site

Site Survey

While evolving with the design process and starting to detail the two station proposals, it became evident the lack of technical information about train stations in general and, more specifically, their design requirements in Sacramento. As a consequence, the necessity for a site survey emerged, in order to better understand dimensions but also design challenges and opportunities of existing train stations and their related amenities. On the 17th and 18th of July, part of the CPID team flew to Sacramento and spent two days observing and documenting. Through photos, video, sketches and notes, five existing train stations were analyzed: Township 9, Globe Ave, La Valentina, Fruitridge and 47th Ave. Fruitridge, most contested by Sacramento Regional Transit for maintenance, resulted in having a nice pedestrian, and leveled, surface over the track. However, poorly designed artwork and many unused benches located under the sun make the station undesirable overall. Globe Ave. and La Valentina, probably due to their location and space constraints, have critical concrete pavement overlapping with the tactile warning strips which result in a dysfunctional paving strategy. In addition, some of the mini-highs are not sheltered and the stations generally perceived as low quality in terms of materials and use.

The station at 47th Ave results in being successful for many of its aspects. The light tensile structure, able to catch and drain rainwater into concrete pools, also generated a wide, shaded and open plaza which seems



Dos Rios Station Site



Area around the Dos Rios Site

to work well for both the placement of amenities and the use of space by waiting passengers. Also notable is the well-maintained landscaping and the variety of plants present on and surrounding the station. Investment on the construction of two lateral concrete walls was questioned.

Township 9, the newest of the five station, proves to be an efficient, well-designed station. The large trussed roof, the quality and reuse of the materials, the relation to the street, and the successful cross-ventilation, all contribute to the success of this station.

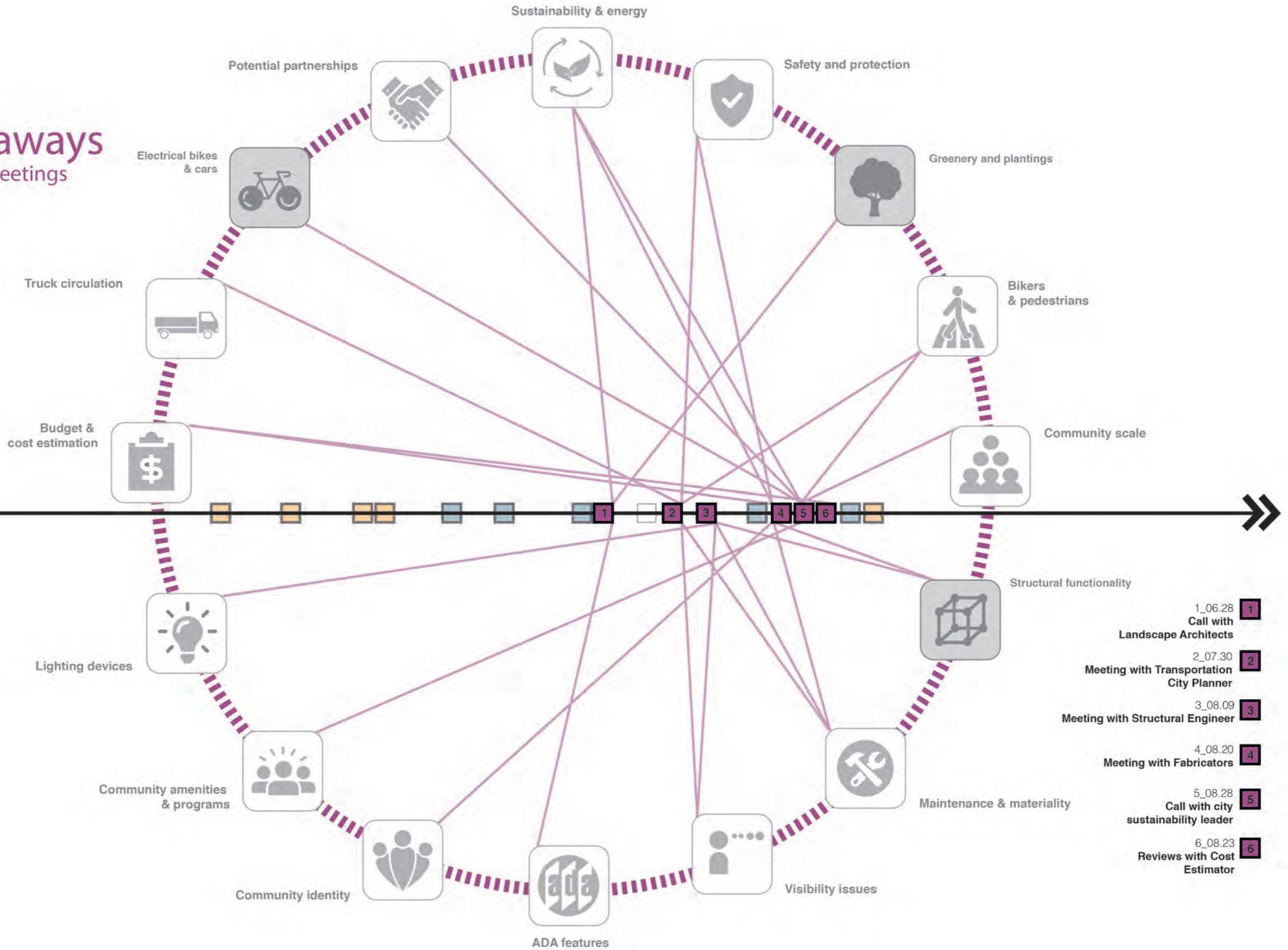
Through the different tools, CPID team reported a variety of information related to standard dimensions, distance of clearances, location of amenities and ADA related facilities - such as the mini high, which is a key element present on the extreme of every platform (see Appendix C). In a deeper reflection, one of the most important lessons learned was that Township 9 works perfectly as station in terms of function, circulation and accessibility. For these reasons, this case study became the key precedent for our proposals in acknowledging that the Dos Rios train station was aiming to become a vibrant, active public space for the community, in addition to being a functional train station.



Township 9 Station, a stop near the Dos Rios Station Site.

Takeaways

Experts Meetings



Design Concepts



Collaborative site map from stakeholder meeting.

Station Masterplan

In order to visualize this Light Rail Station design within a larger urban vision, a series of diagrams summarize the complexities of the site and surrounding context. The diagrams address the key principles – technical requirements, sustainability, and community – while forming smaller partnerships to create the larger urban vision. The site is situated along North 12th Street and resides between two new housing developments, an old warehouse, multiple businesses and car dealerships. The city plan to redirect North 12th as well as Richards Blvd determined the placement of the tracks as well as proximity to the new housing that will be built south of the station platform. In the future, the area across from the station, now North 12th St., will become a large public pedestrian plaza and the main flow of traffic will be directed to Richardson. The design of this station addresses this through an attention to potential future programming of the new public space. Throughout the design process, a series of diagrams were made to explain the formation of local partnerships and the richness of additional programming. These partnerships address the concerns of the public that were vocalized throughout the various stakeholder meetings – design for access to fresh food, restrooms, health clinics, safe spaces, local business development, public art, as well as support for the houseless population. The station design provides space to support these additional programs and therefore creates a strong network by which the community

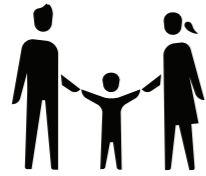
of Dos Rios can be connected to both local resources and the greater City of Sacramento. The urban scheme takes these micro solutions and visualizes them in a larger, city scale to successfully connect transportation to a greater vision of sustainable and healthy living.

DESIGN CONSIDERATIONS

A TRANSPORTATION SYSTEM THAT PROVIDES AMENITIES LOCALLY TO SUPPORT THE CITY AS A WHOLE



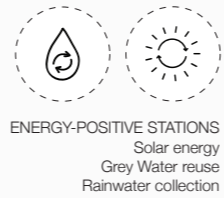
Technical Requirements
Sustainability
Community



“ WHAT WE HEARD//COMMUNITY FEEDBACK: ”

- Meld new and old
- Be sensitive to houseless population
- Recognize the commercial context
- Provide safety and protection
- Integrate with public art efforts
- Emphasize accessibility
- Help change perceptions of the district
- Provide much needed local amenities
- Serve as front door // gateway

- January 2018
Stakeholder meeting/Workshop
- March 2018
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ENERGY-POSITIVE STATIONS
Solar energy
Grey Water reuse
Rainwater collection



Toilet and water amenities



Access to food and water



Shade and native plants



Access to medical services



Access to bikes and storage



Safe Places for children



Public Art

FARMERS MARKET PARTNERSHIP
Sacramento Farmers, Twin Rivers Housing, The City of Sacramento, Sacramento Regional Transit

Developing a Farmers Market requires additional space around the new housing to create an urban plaza large enough to gather on market day. Funding and support would come from the City or a Farmers Market Organization. The design of the shelters on the station and multi-purpose market stands allows a market “combo” to be created, activating the station. This acknowledges that fresh food can be integrated to the whole community through the support of the city’s transportation system. During times that the market is not in service, the shelters provide shade and seating for waiting passengers.

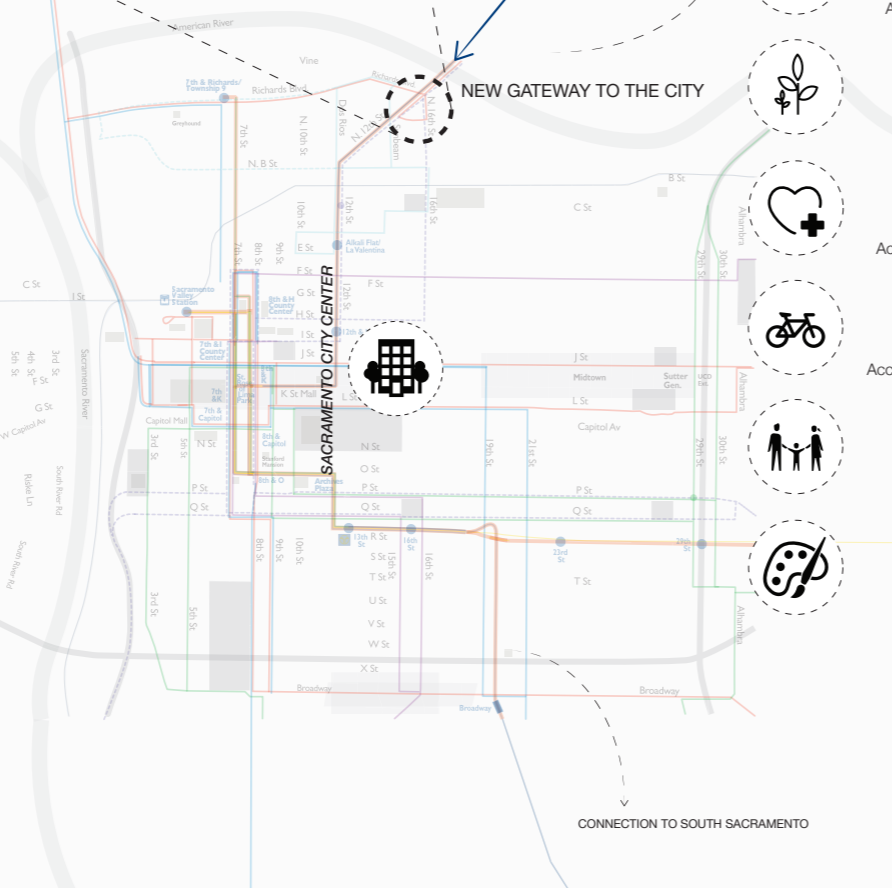
WATER PARTNERSHIP
Sacramento Regional Transit, Twin Rivers Housing, The City of Sacramento

A station that provides clean water amenities to the surrounding community strengthens its sense of place and requires collaboration between the City, Sacramento Regional Transit, and the Twin Rivers housing developments. Access to clean water and restrooms creates a public space that acknowledges all members of the community. In addition to drinking water and restrooms, the station and housing could form a partnership to use recycled grey water for the surrounding plantings.

PROGRAMMING PARTNERSHIPS
Sacramento Regional Transit, Twin Rivers Housing, The City of Sacramento, Social Services Agency

The connections formed by transportation throughout a city provides an opportunity to localize amenities and address the concerns of houselessness, food deserts, and unwelcoming places. The Twin Rivers housing, if supported by the city and the transportation agency, could develop programming on their first floor that connects with the station and its transit users. Programming such as a small clinic, a place to do laundry and showers, a cafe, a small grocery store, or a local business give the station a greater role and meaning in the urban fabric.

KEY POTENTIAL PARTNERSHIPS



NEW GATEWAY TO THE CITY

CONNECTION TO NORTH SACRAMENTO

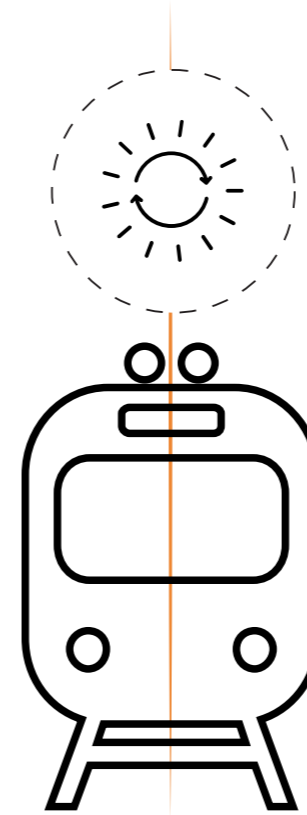
CONNECTION TO SOUTH SACRAMENTO

The diagram to the left illustrates the commonalities between the two design proposals that support the station as well as the concerns of the community members. ‘What we heard//Community Feedback’ resulted from the multiple stakeholder meetings, outlined in the timeline on the top right. “Meld new and old, be sensitive to houseless population, recognize commercial context, provide safety and protection, integrate public art efforts, emphasize accessibility, help change perceptions of the district, provide local amenities, and serve as a front door or gateway” came from the voices of the many individuals involved. Below, the diagram uses icons to show the stations solutions – toilet and water amenities, access to food and water, shade and native plants, access to medical services, access to bikes and storage, safe places for children, lighting, and public art. The diagram also emphasizes the ability of Sacramento Regional Transit to connect the north and south of the city to central resources. However, while the station provides the space to support these, the diagrams on the bottom left emphasize that without local partnerships, the amenities will not thrive long term. This provides opportunity to create resilient solutions that bring together multiple assets – city, agriculture, social services, housing, transportation, art, music, and local businesses. All together supported by responsible use of energy and water.

The following diagrams analyze the potential partnerships that would increase the longevity of the station design by providing additional resources to the community members of Dos Rios. Access to these resources along a transit line makes them accessible to more populations and central to a sense of ownership and place.



Station can produce approx. 80,000 kWh of solar energy per year

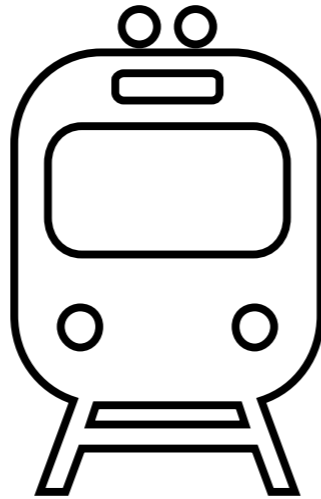
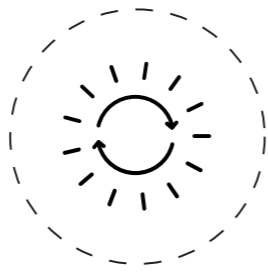


Funding from station solar energy production **supports additional programs** for the surrounding community.

WATER PARTNERSHIP



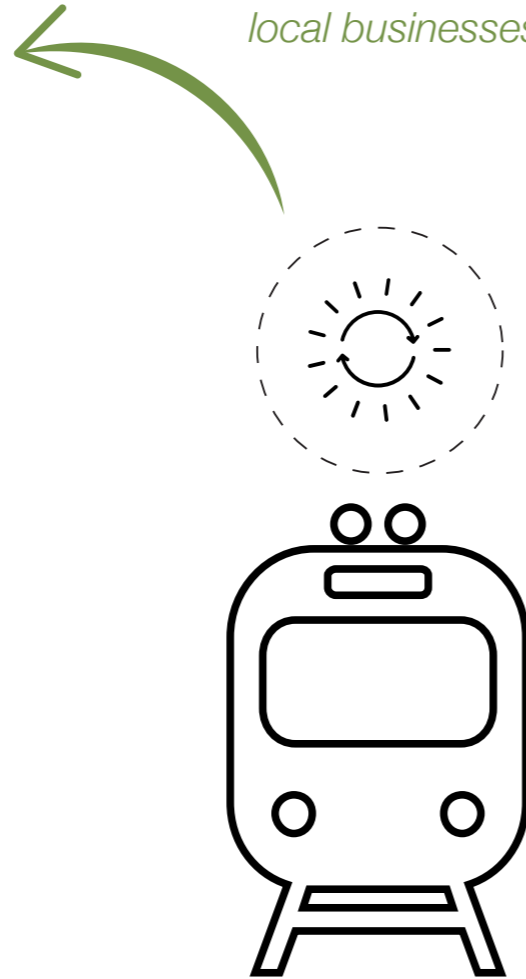
A station that provides clean water amenities to the surrounding community strengthens its sense of place and requires collaboration between the City, Sacramento Regional Transit, and the Twin Rivers housing developments. Access to clean water and restrooms creates a public space that acknowledges all members of the community. In addition to drinking water and restrooms, the station and housing could form a partnership to use recycled gray water for the surrounding plantings.



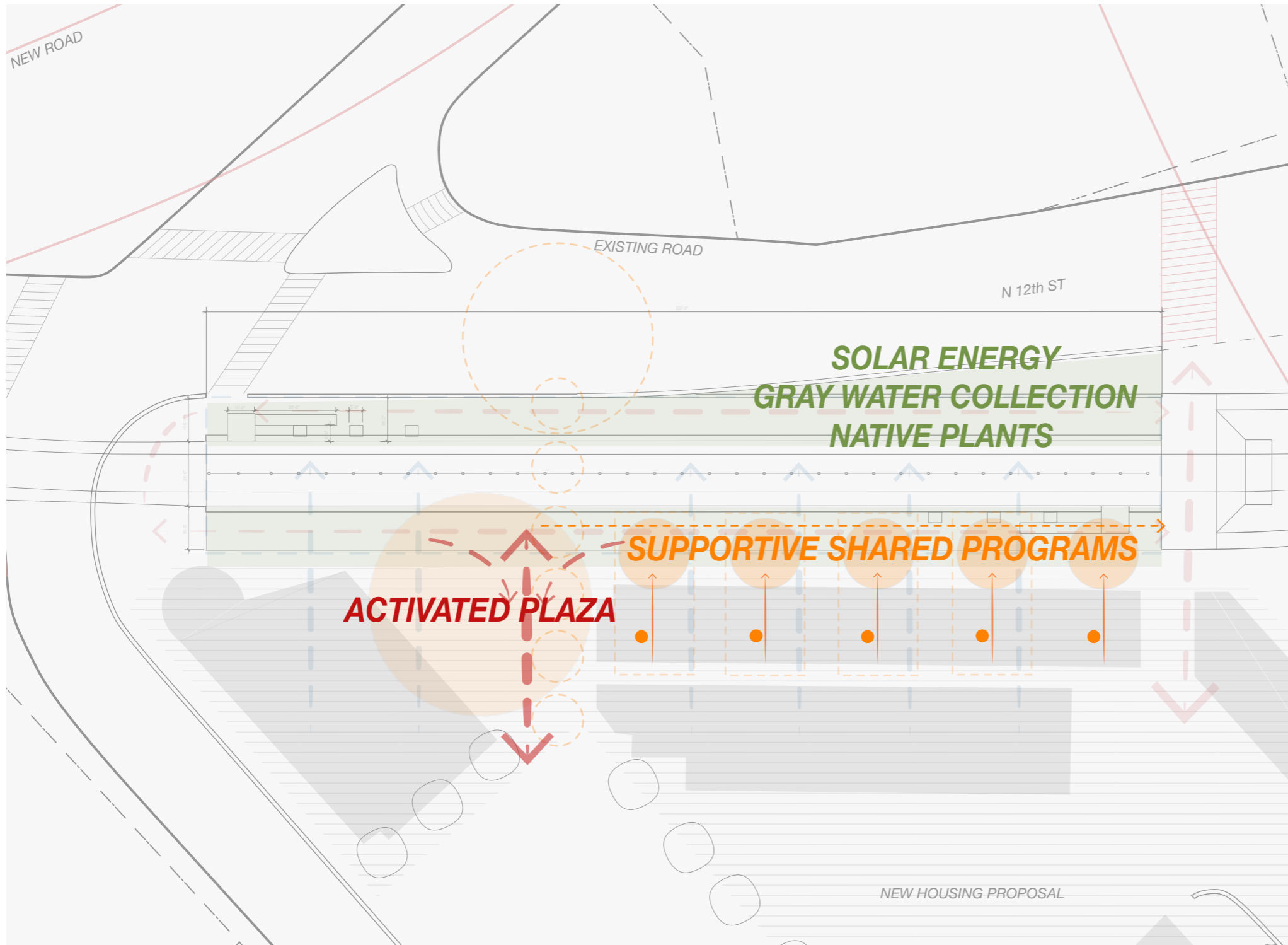
Responsible use of gray water supports both the plantings on the station as well as the environmental resiliency of the new housing.



Providing opportunity for fresh food along transportation routes reduces the impacts of food deserts and supports local businesses.



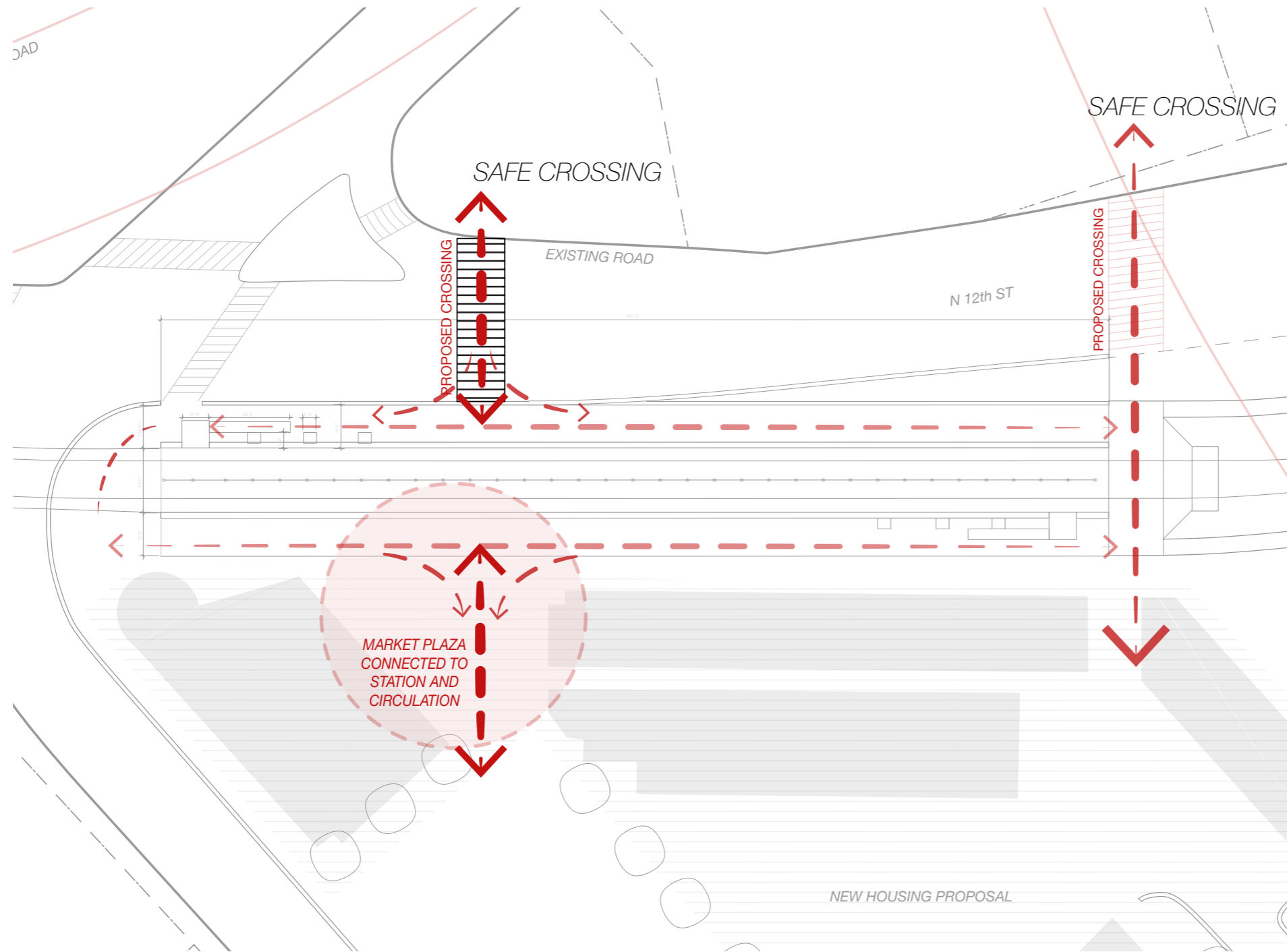
Farmers Market Partnership Diagram



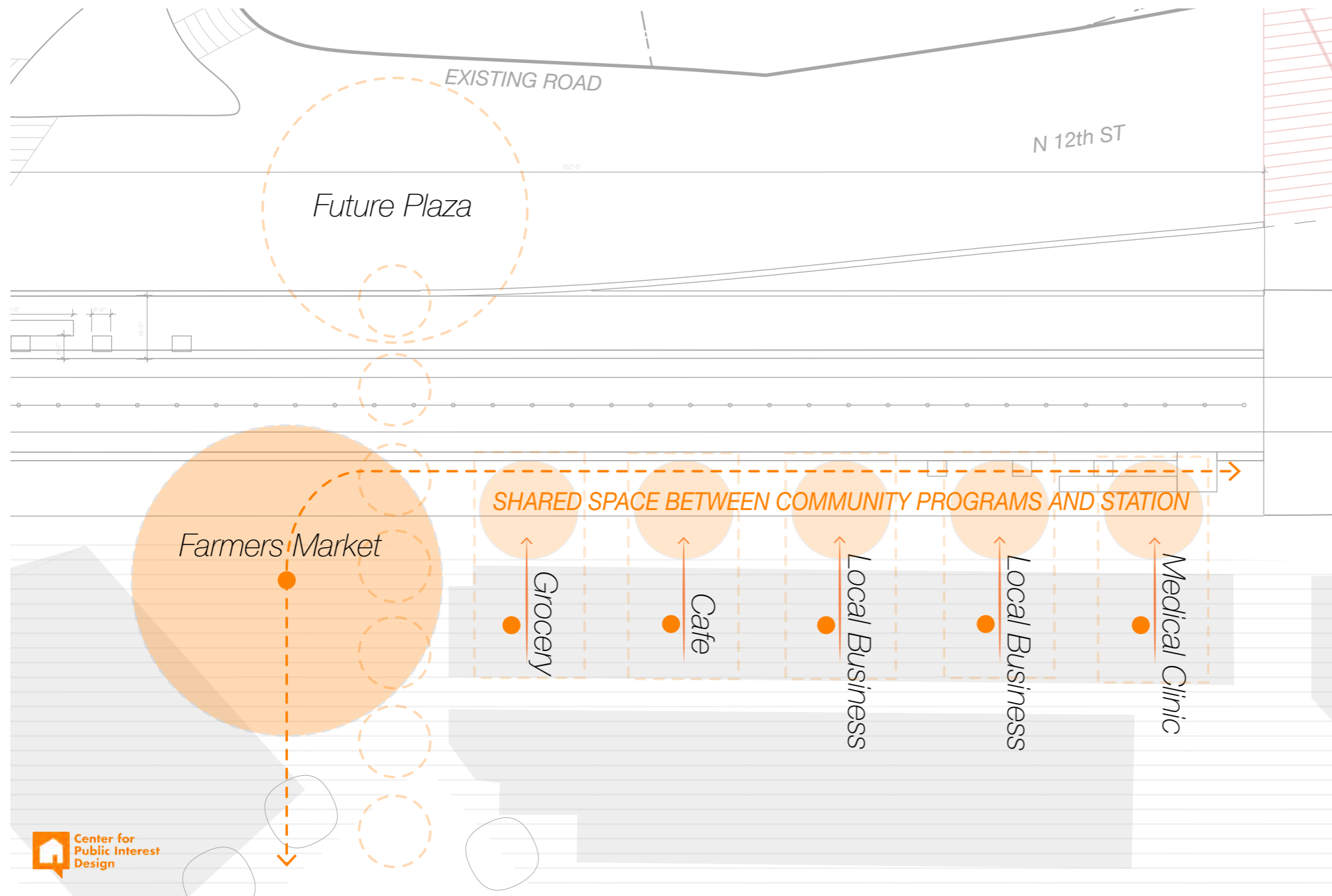
Masterplan Diagrams

The diagrams overlaying the site of the station highlight the key shared design moves applicable to both stations. They cover water reuse, shared programming space, solar energy capacity, and potential landscaping with native plantings. This diagram combines these strategies to further emphasize the activation of public space through incorporating all strategies on the station itself. In addition to lively public space, the station remains net-zero and responsibly uses energy and resources.

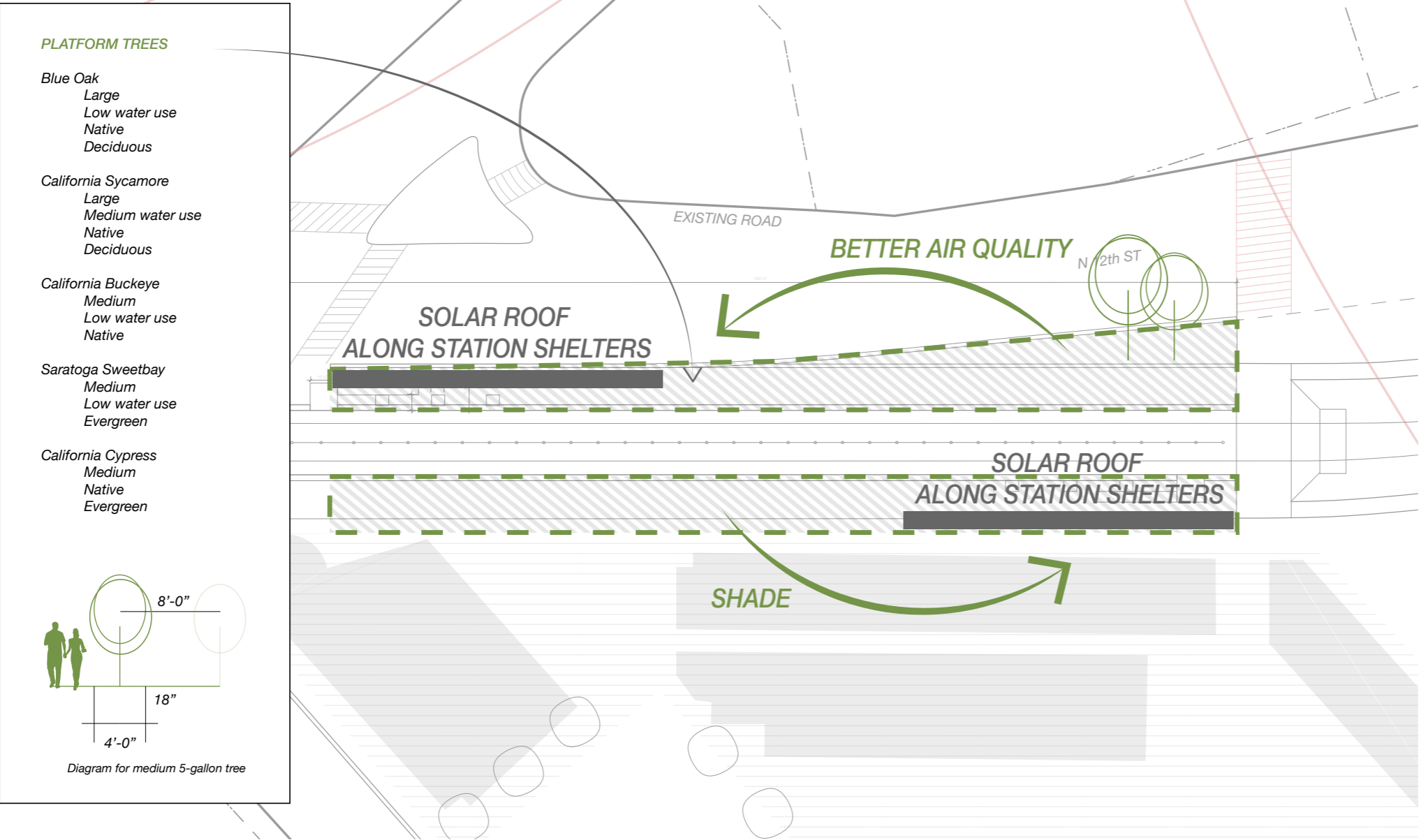
Diagram combining all aspects of the masterplan schemes.



Overall site strategy showing the crossing and potential urban plaza between station and housing.



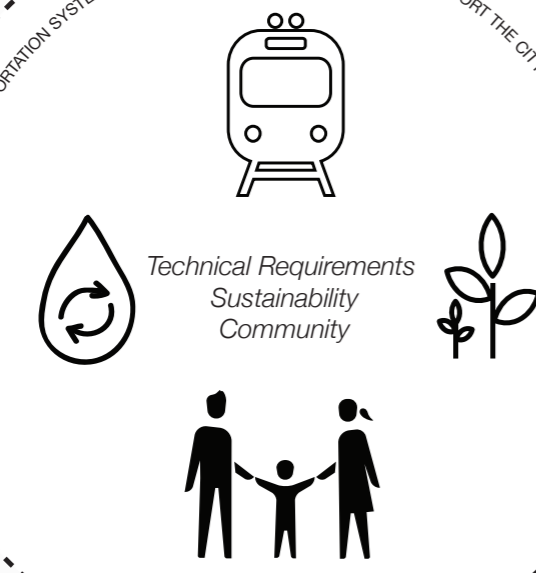
Overall site strategy showing the potential shared program space along the station.



Overall site strategy showing the quality of space based on shade and natural plantings.

DESIGN CONSIDERATIONS

A TRANSPORTATION SYSTEM THAT PROVIDES AMENITIES LOCALLY TO SUPPORT THE CITY AS A WHOLE



“ WHAT WE HEARD//COMMUNITY FEEDBACK: ”

Meld new and old
Be sensitive to houseless population
Recognize the commercial context
Provide safety and protection
Integrate with public art efforts
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Access to bikes and storage



Safe Places for children



Public Art

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Sacramento Farmers
Twin Rivers Housing
The City of Sacramento
Sacramento Regional Transit

Developing a Farmers Market requires additional space around the new housing to create an urban plaza large enough to gather on market day. Funding and support should come from the City or a Farmers Market Organization. The design of the shelters on the station as multipurpose market stands allows a market "canopy" to be created, activating the station. This acknowledges that fresh food can be provided to the whole community through the support of the city's transportation system. During times that the market is not in service, the shelters provide shade and seating for waiting passengers.

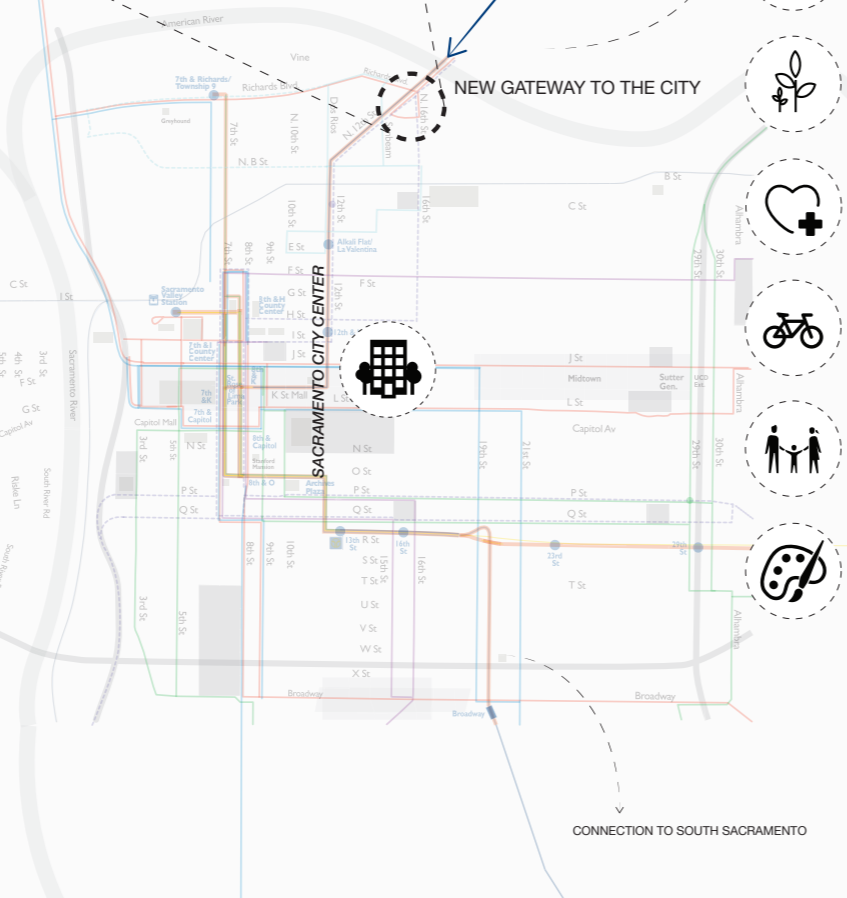
WATER PARTNERSHIP
Sacramento Regional Transit
Twin Rivers Housing
The City of Sacramento

A station that provides clean water amenities to the surrounding community strengthens its sense of place and requires collaboration between the City, Sacramento Regional Transit, and the Twin Rivers housing developments. Access to clean water and restrooms creates a public space that acknowledges all members of the community. In addition to drinking water and restrooms, the station and housing could form a partnership to use recycled gray water for the surrounding plantings.

PROGRAMMING PARTNERSHIPS
Sacramento Regional Transit
Twin Rivers Housing
The City of Sacramento
Social Services Agency

The connections formed by transportation throughout a city provide an opportunity to localize amenities and address the concerns of homelessness, food deserts, and unwelcoming places. The Twin Rivers housing, if supported by the city and the transportation agency, could develop programming on their first floor that connects with the station and its transit users. Programming such as a small clinic, a place to do laundry and shower, a cafe, a small grocery store, or a local business give the station a greater role and meaning in the urban fabric.

KEY POTENTIAL PARTNERSHIPS



Station Designs

The following two schematic design proposals, The Folded Pavilions and Rio Azul, developed from the overall community engagement process and extensive site analysis. They share many of the same overall strategies in terms of providing community assets and a response to energy resilience.

The Folded Pavilions



Overall Axon of the Station.

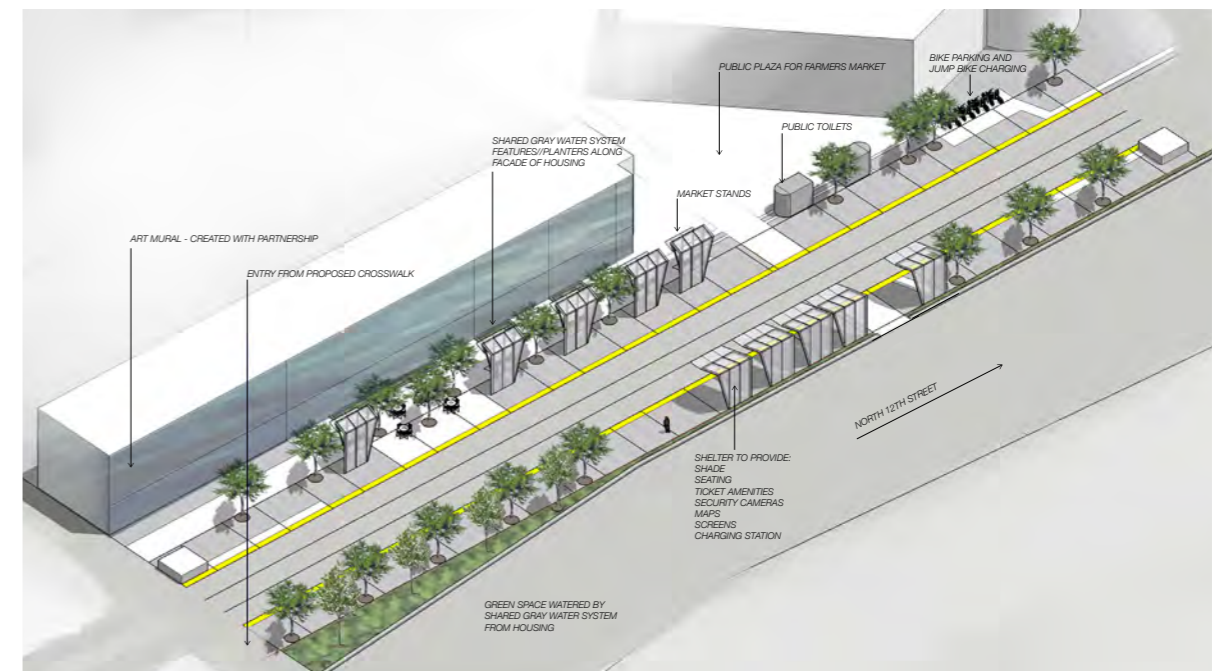
The Folded Pavilions

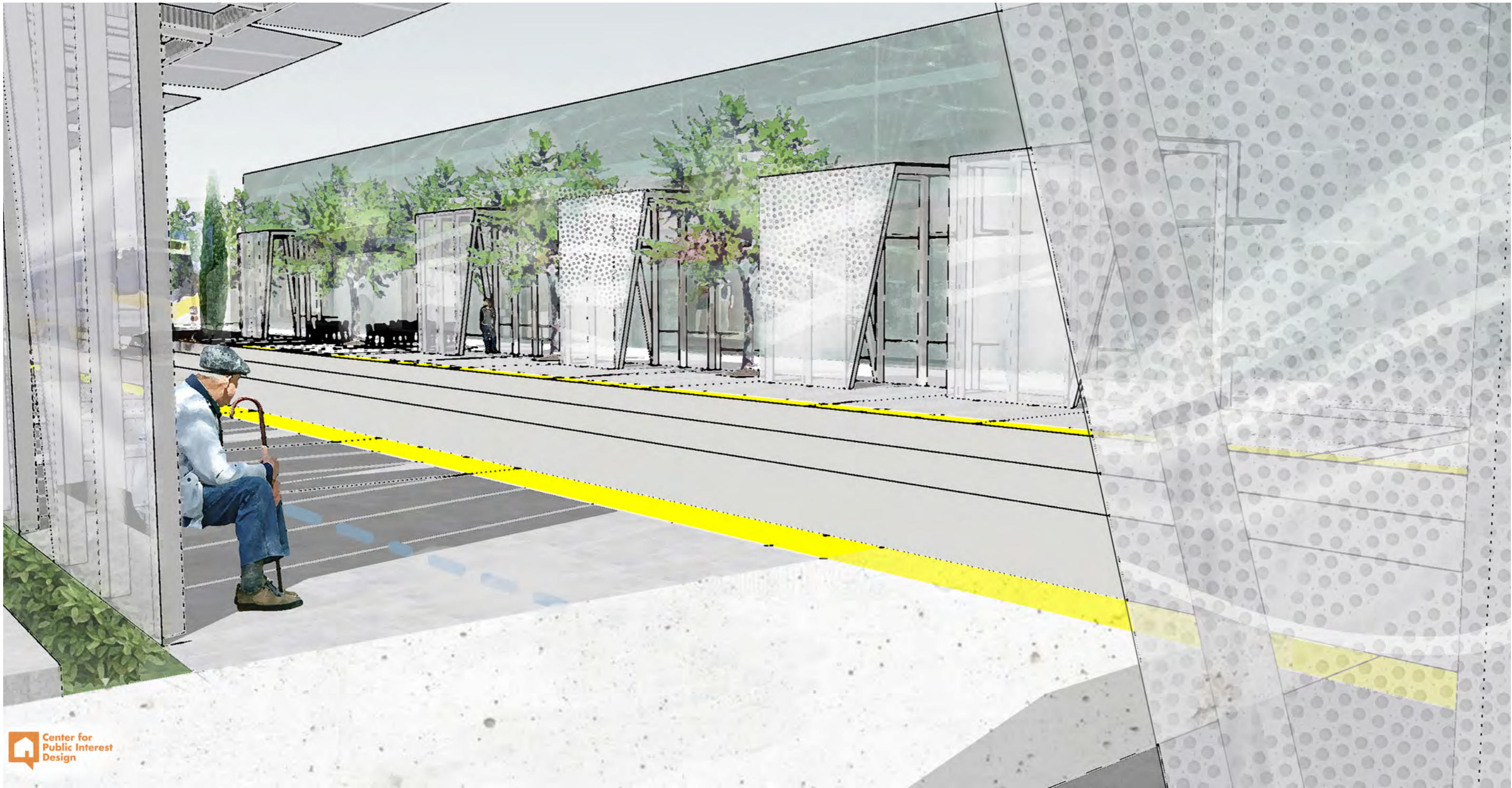
Concept: The Folded Pavilions scheme light rail station developed from a desire to create a sustainable, functional shelter with a wrapping form that reflects the beauty of the two rivers embracing the city of Sacramento. Its design incorporates sustainable solutions, such as solar energy for power and water reuse for native plantings along the platform. The roof integrates the solar panels as shelter while also collecting water through a drain system. The station provides fresh water, drinking fountains, and two public toilets for all the members of the community, resulting in a welcoming public space. Electric car parking, as well as electric bike parking are incorporated into the overall design. The shelters, designed to both shade and provide seating, can also become vendor stations for a market day. With a shared programming system, like the MARTA Market in Atlanta, the station creates space to be both a farmers market and an activated public space. A lively corridor between the new housing project and the platform enhances the possibility for a successful public space - a cafe, a grocery store or a local business become part of the transportation network and connect the community to healthy resources. The materials of the shelter are durable but also function as potential metal work canvases for local artists. The perforated panels are removable for easier maintenance and together with lighting design, increase the visibility and safety of the station. Additional seating and trees along the platform create pleasant areas to wait for a train or enjoy

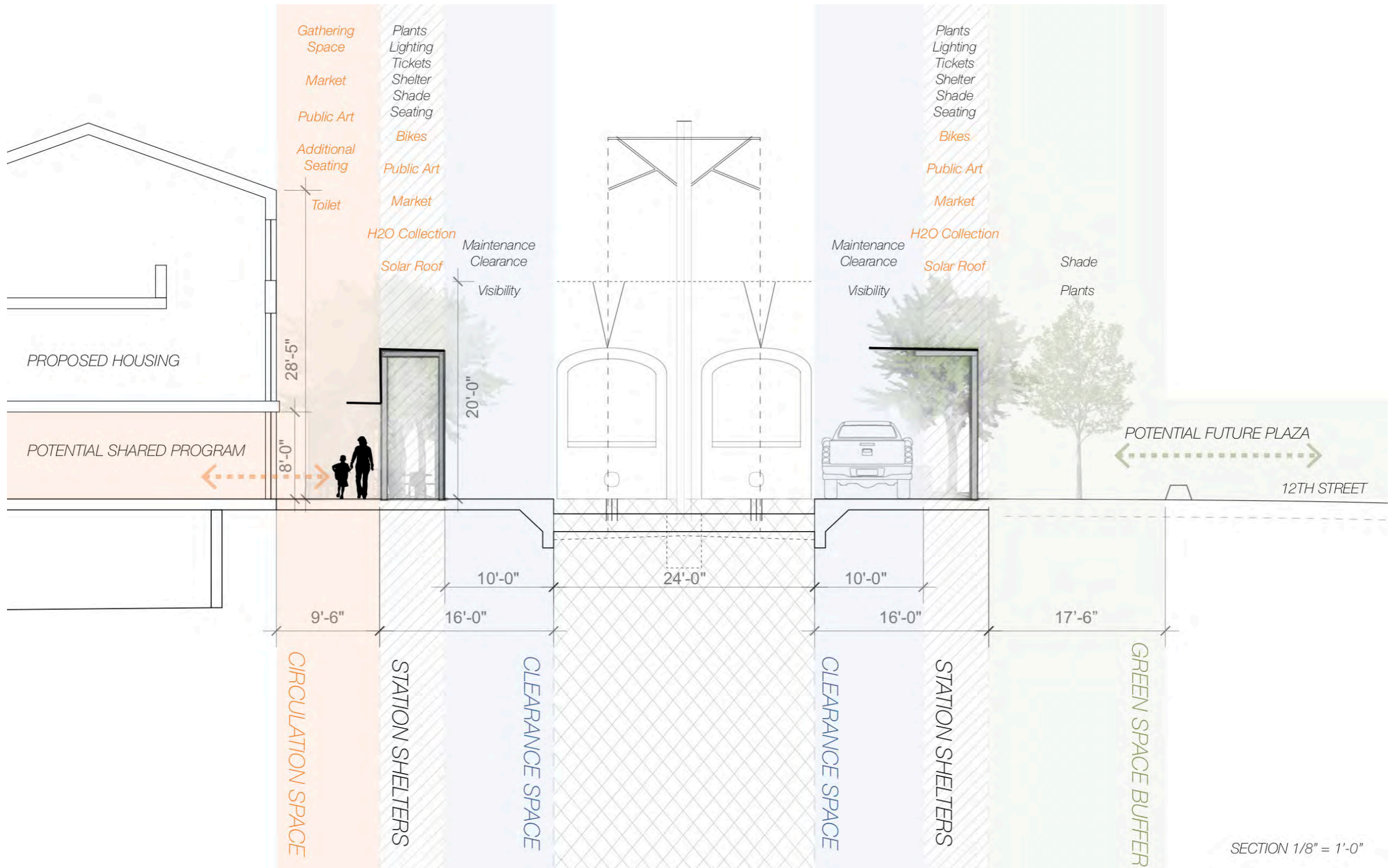
lunch from the farmers market. The shelters, as well as the proposed water mural along the housing, reflect the river in their image as a new gateway to the city of Sacramento. As a gateway to the community, the station connects the community members of Dos Rios to the resources of the city while also forming meaningful, resilient partnerships.

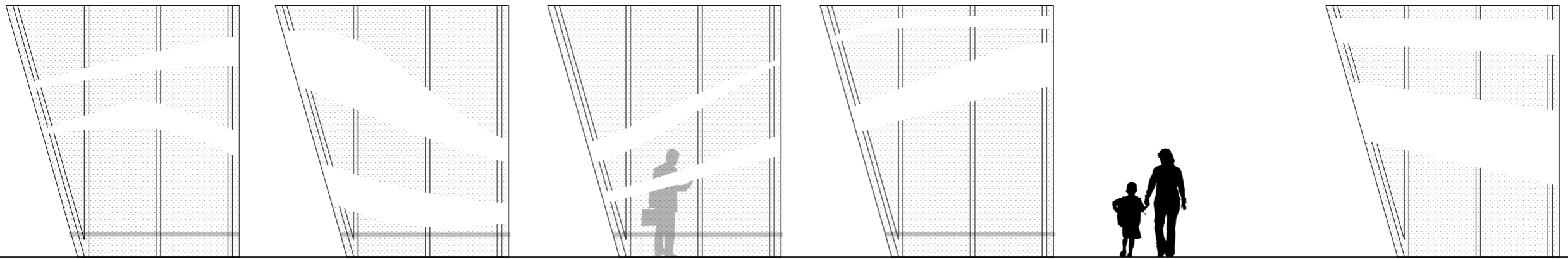
Design: The station shelters are made of tube steel, powder coated perforated steel panels, and wood detailing. The panels are attached with bolts and can be removed and replaced over time for maintenance or the addition of an artist designed panel. The roof is made of integrated solar panel glass with a metal frame. The platform is concrete and incorporates painted wayfinding graphics along the ground. Wooden benches sit at the base of some of the trees throughout the platform. Two Portland Loos, made of durable metal, are located on the housing side of the platform. The plan envisions space for a farmers market that includes the plaza of the new housing as well as the station shelters themselves. If not a market, the additional space could be used for public events, health fairs, etc.

Cost: See cost estimation package in appendix E.

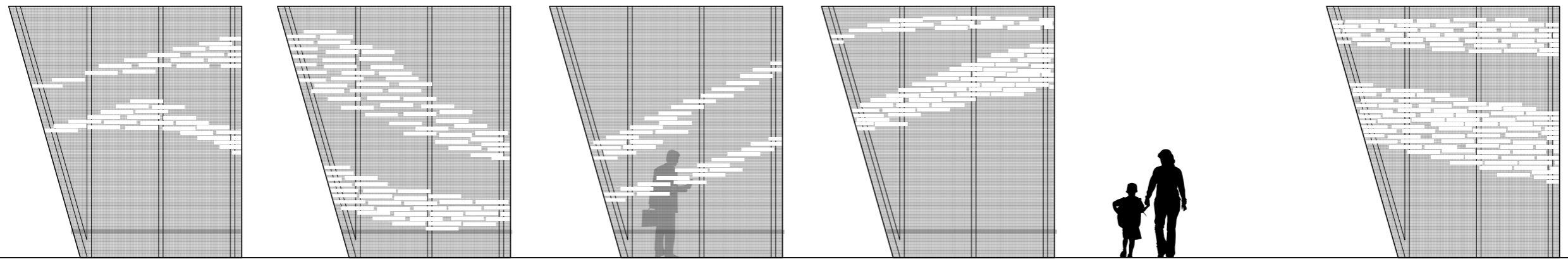




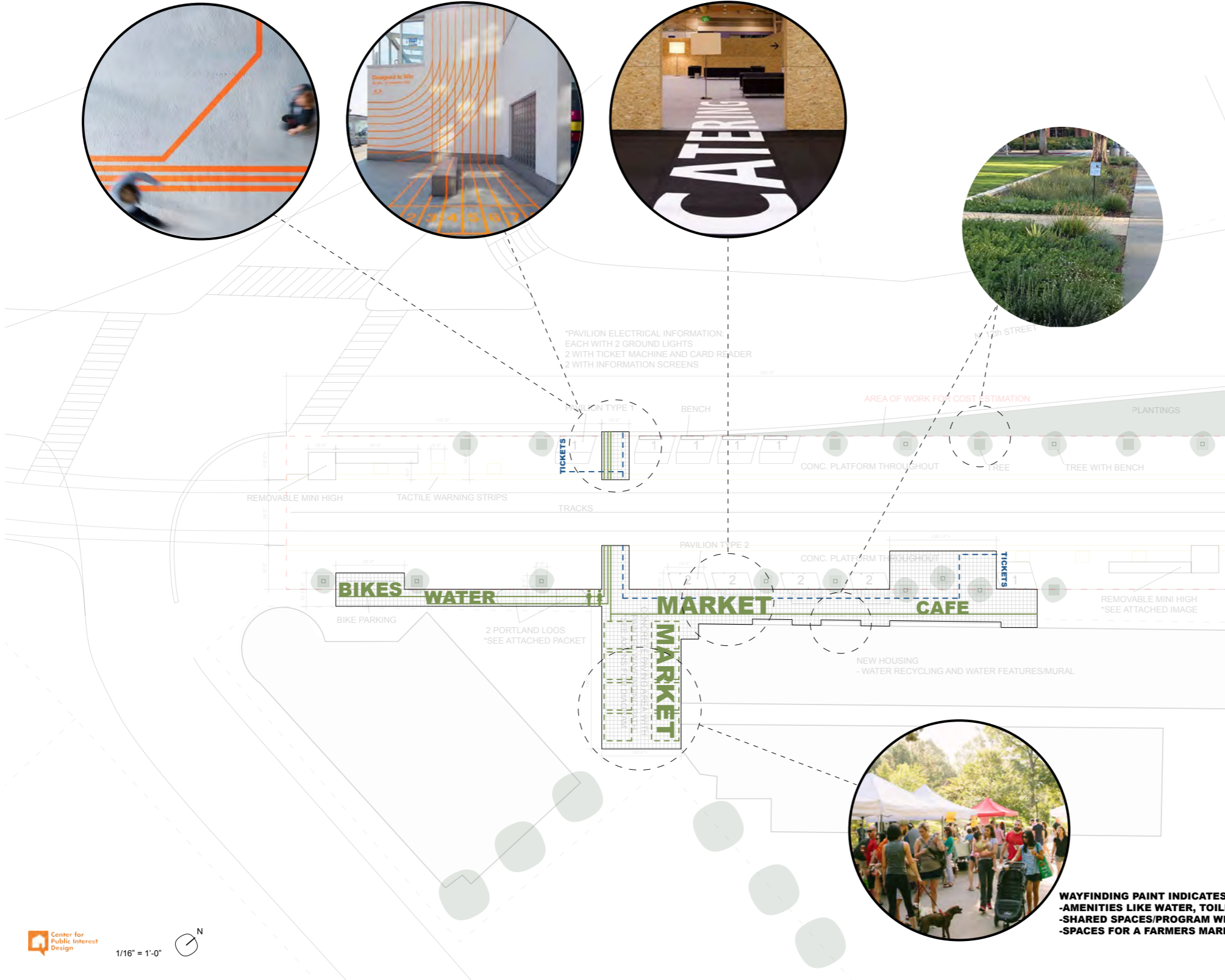
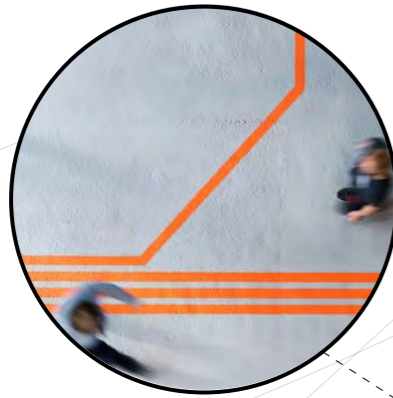




Iteration 1



SAMPLE GRAPHIC WAYFINDING PAINTING



FARMERS MARKET PARTNERSHIP
Sacramento Farmers Twin Rivers Housing The City of Sacramento Sacramento Regional Transit

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WATER PARTNERSHIP
Sacramento Regional Transit Twin Rivers Housing The City of Sacramento

A station that provides clean water amenities to the surrounding community strengthens its sense of place and requires collaboration between the City, Sacramento Regional Transit, and the Twin Rivers housing developments. Access to clean water and restrooms creates a public space that acknowledges all members of the community. In addition to drinking water and restrooms, the station and housing could form a partnership to use recycled gray water for the surrounding plantings.

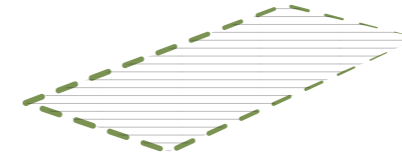
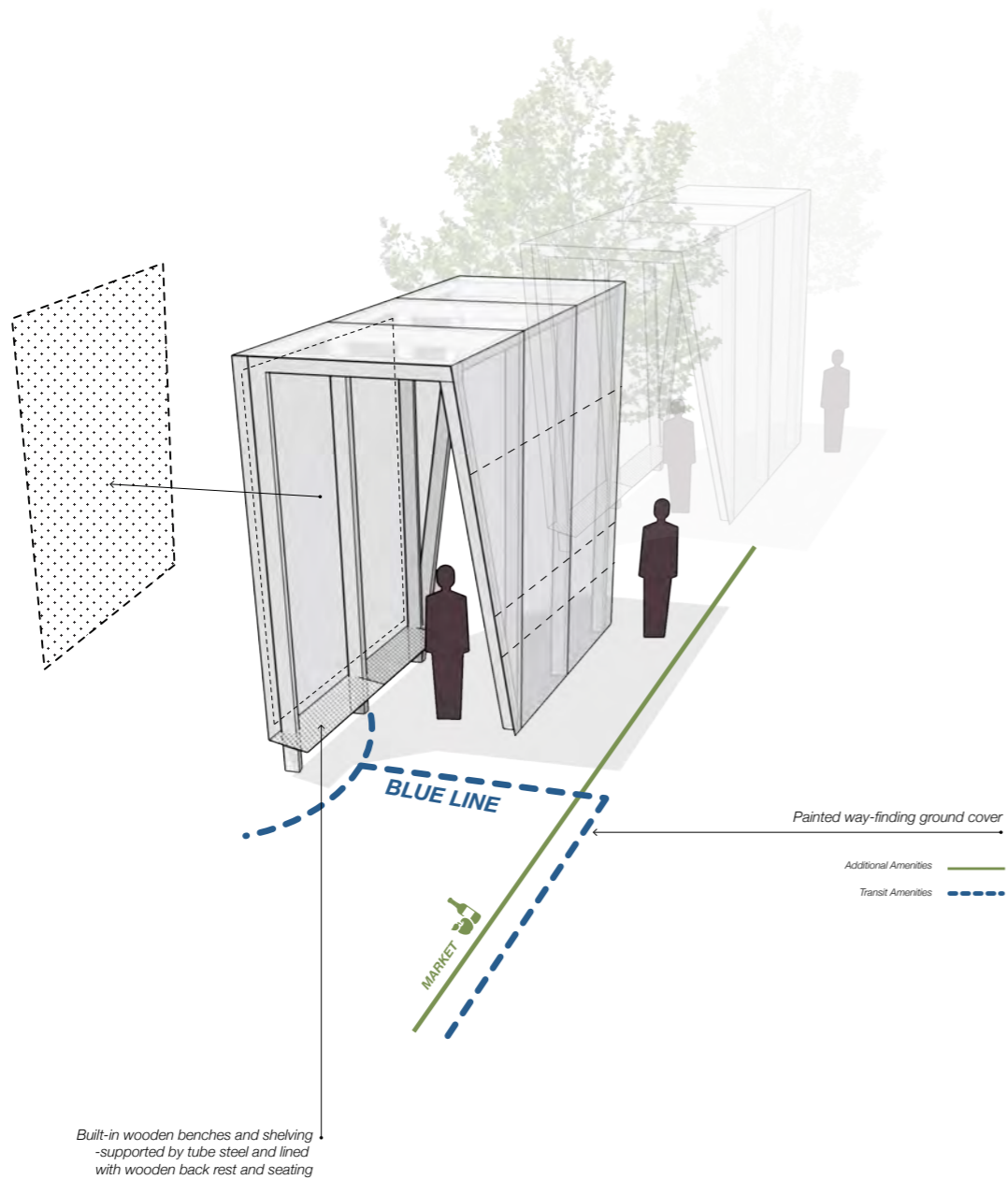
PROGRAMMING PARTNERSHIPS
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WAYFINDING PAINT INDICATES :
-AMENITIES LIKE WATER, TOILETS, BIKE LOCK STATIONS
-SHARED SPACES/PROGRAM WITH THE NEW HOUSING (CLINIC, CAFE, GROCERY, ETC.)
-SPACES FOR A FARMERS MARKET TENTS



Removable perforated metal panel
 - custom designed by local artists
 - to be added to market //housing side of platform
 - river pattern added to N 12th side



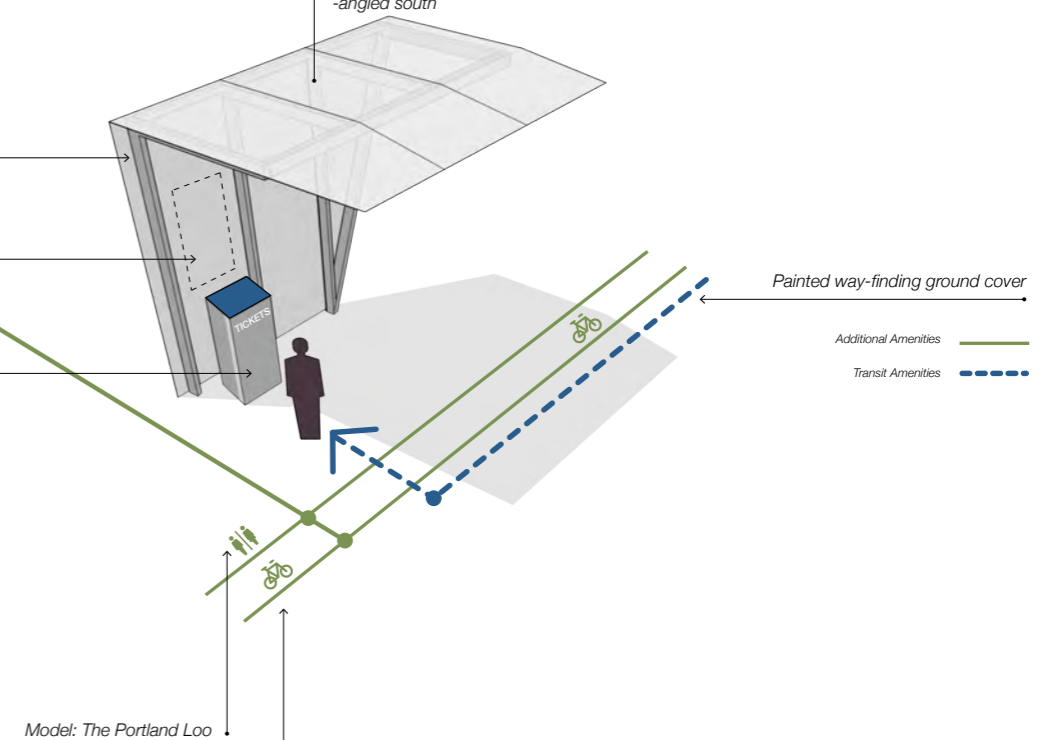
Solar Array for each shelter roof
 -integrated steel and glass roof with solar array
 -power lighting
 -power heating for winter months
 -additional metal frame to attach above perforated screen
 -angled south

Exterior Shelter
 White Perforated Metal Screen
 Tube Steel Frame
 Wooden Interior Covering
 Built-in Bench

Transit Line Map

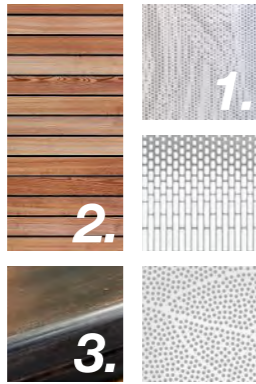
Ticket Machine

Additional Amenities:
 Screen
 Security Camera
 Card Reader
 H2O Fountains
 Lighting
 Signage
 Charging Station



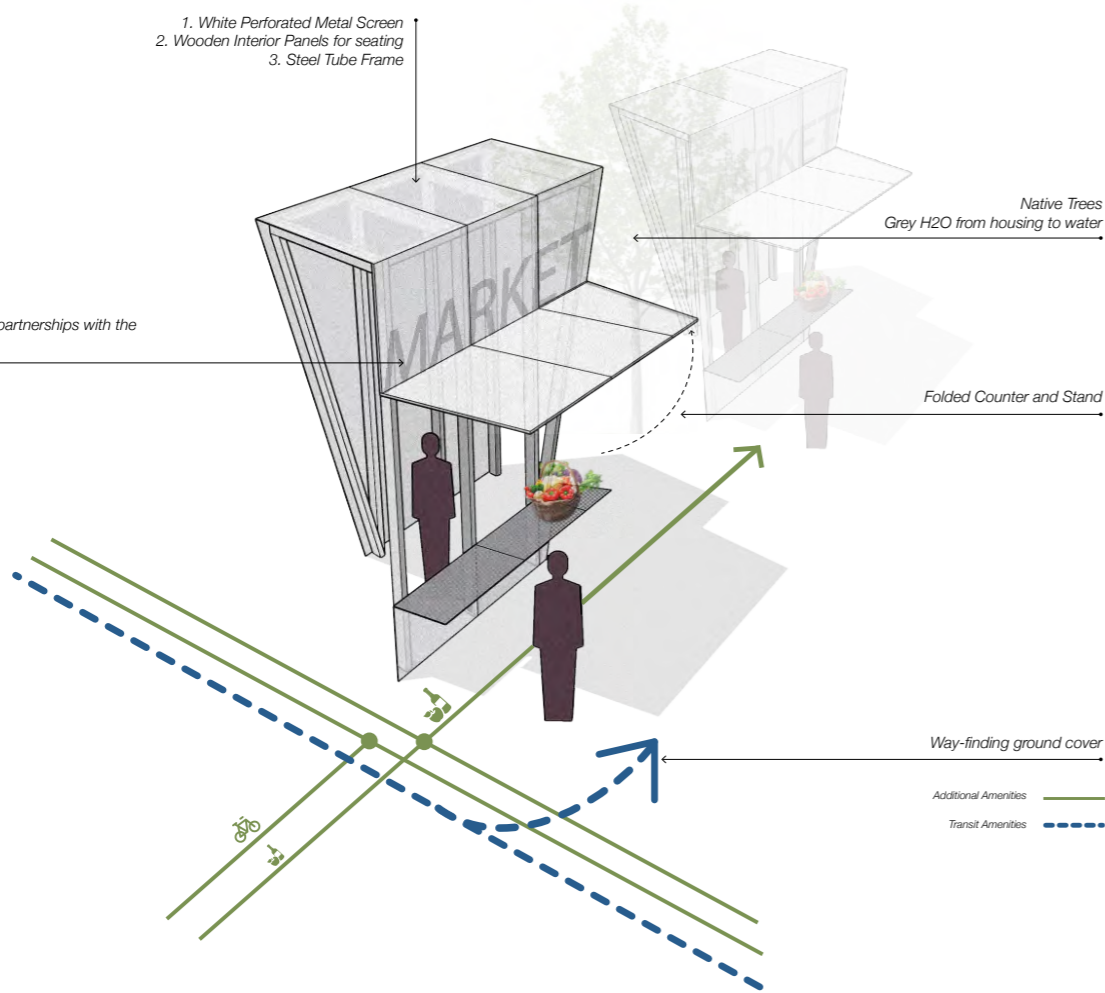
Way-finding icons to highlight additional amenities that the station will provide to the community :

- Bike Storage + Jump Bike station
- Toilets
- Public Artwork
- H2O Station
- Market
- Clinic Space
- Local Business Support



- 1. White Perforated Metal Screen
- 2. Wooden Interior Panels for seating
- 3. Steel Tube Frame

Market to be formed through partnerships with the local farmers of Sacramento



Native Trees
Grey H2O from housing to water

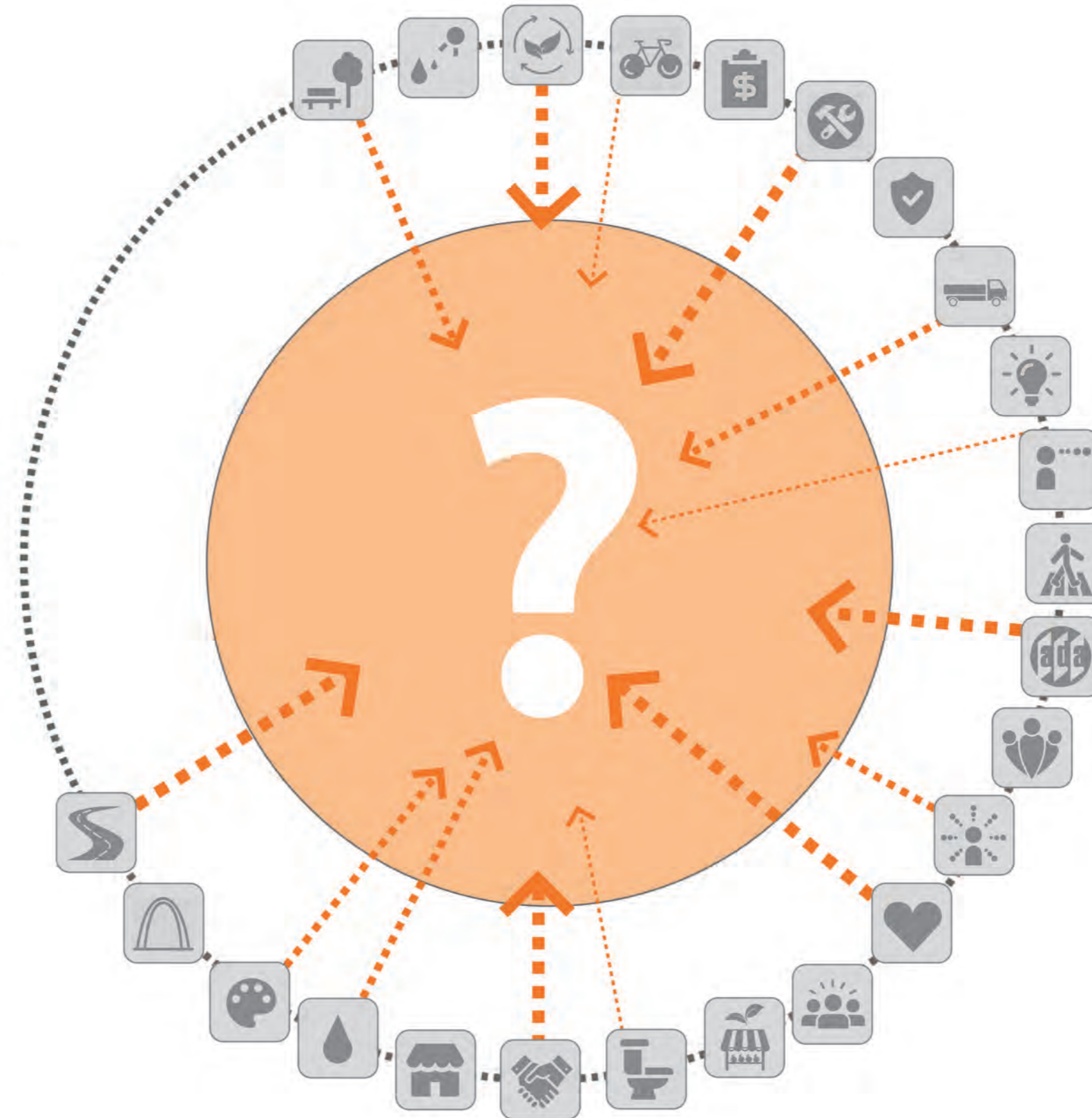
Folded Counter and Stand

Way-finding ground cover

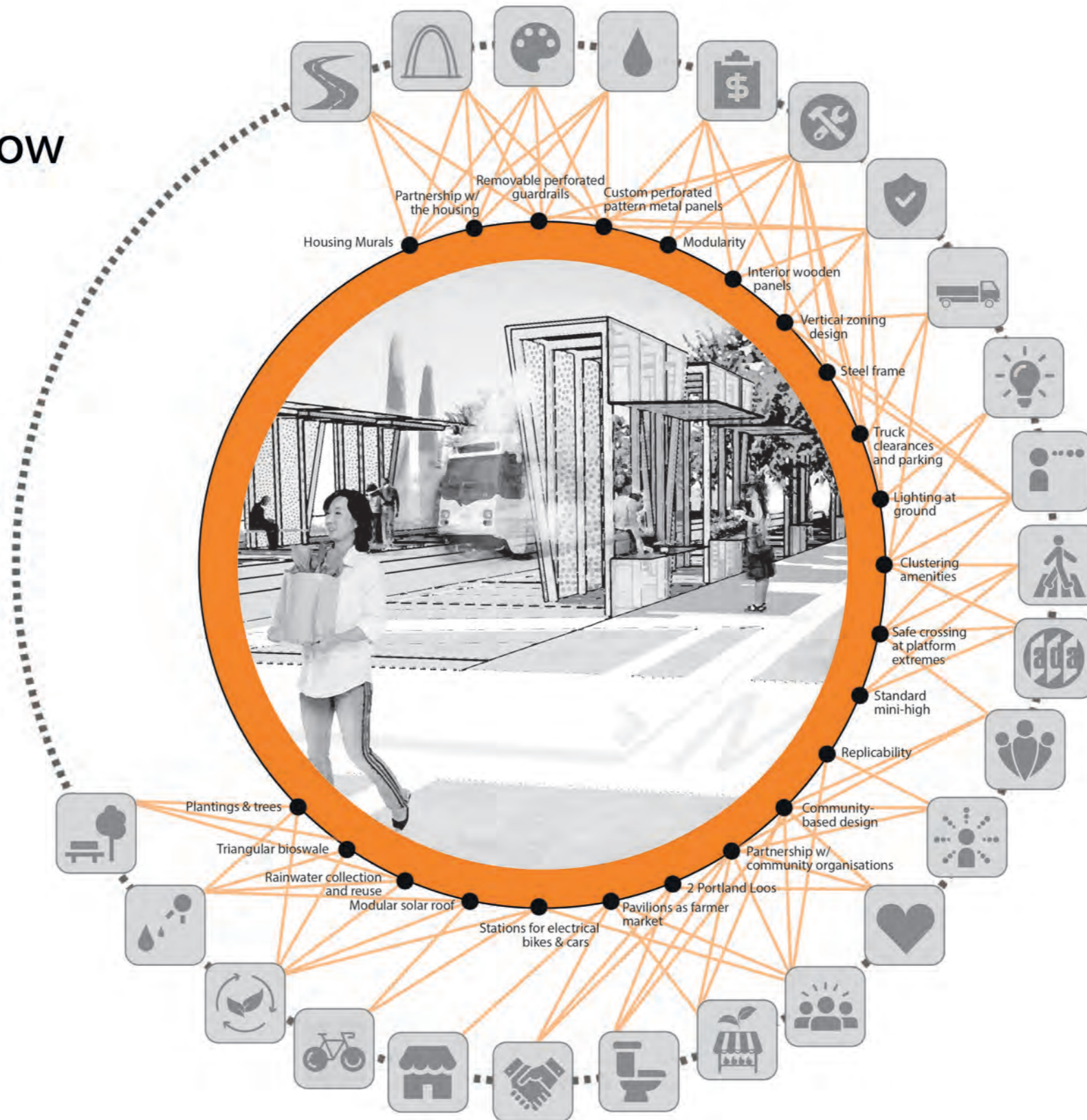
Additional Amenities
Transit Amenities



How do
Takeaways
impact the
Design?



Visualizing how Takeaways **impact** the Design



Rio Azul



View of Rio Azul Station from platform

Rio Azul

Concept: Rio Azul, which literally translated means Blue River, is a scheme for the Dos Rios light rail station that takes its name from the adjacent American River that provides the threshold to Sacramento and the River District. The presence of this river is reflected in this station design's deep commitment to the ecology of the area and its communities. It's also present in the design features that create its character, such as the rich blue terrazzo floors and powder coated metal roofs that provide shelter and form the primary identity of this proposal. While originating from the presence of the river, this proposal embraces a wide variety of features that support community, functionality, and sustainability.

Conceived of as a key piece of a larger puzzle in a quickly developing neighborhood, the station aims to integrate into its current and future surroundings. From creating shared programming with the neighboring housing development, to expansive solar capacity built into the shade canopy with the potential to support car and bicycle charging stations, to providing space for public toilets on the plaza, to planting ecological gardens that provide natural cooling and rainwater catchment, this station proposes a vision of a facility which enhances the community and acts as one of its must go to public spaces.

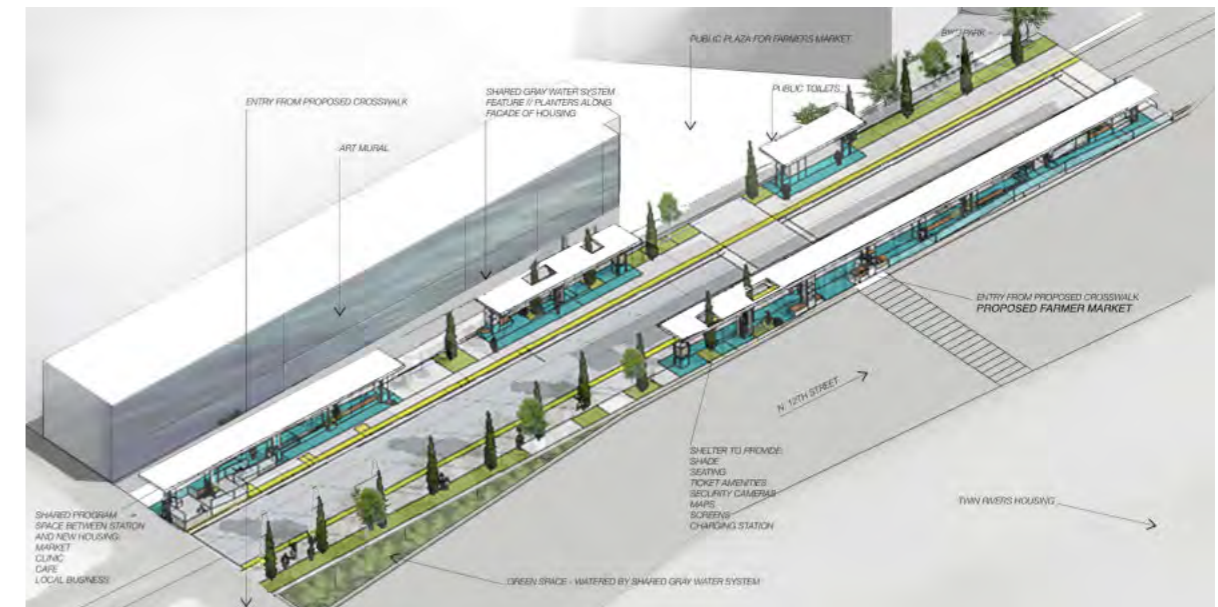
Design: The Rio Azul station design concept originated from community feedback and a

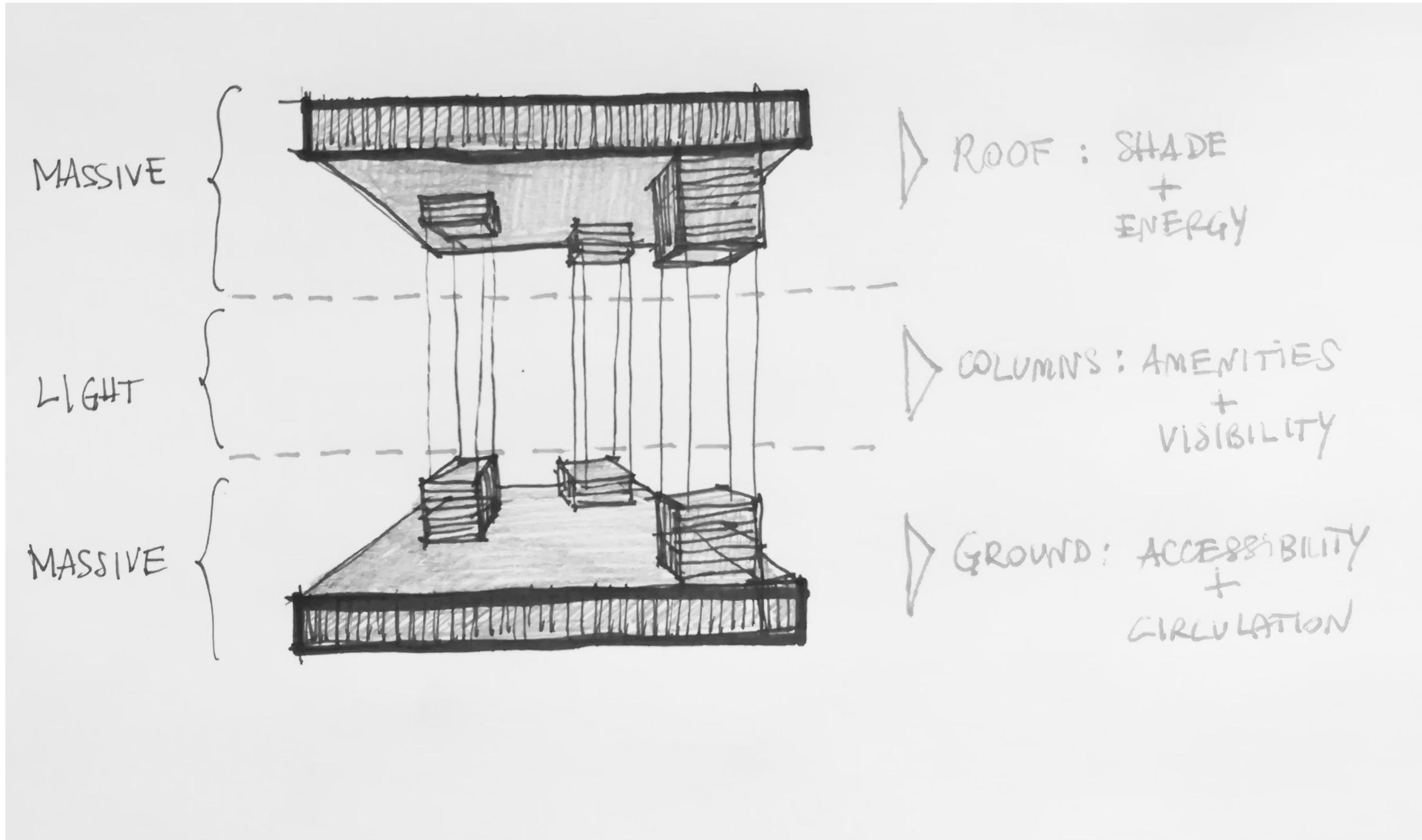
deep observation of existing train platforms with a desire to improve station circulation, accessibility, and experience. Toward these goals, exploring possibilities within the ground plane led to a strategy of rethinking the required ADA ramp to become a central feature that improves rider experience for both transit users with mobility issues and the general population by decreasing ramp slopes and utilizing the structure as a placemaking element. At the same time, the clear need for shade and shelter allowed the design team to take advantage of the opportunity to produce energy through solar collectors on large roofs. In-between these two planes, a lighter space composed of steel columns was created in order to contain amenities while maintaining high visibility.

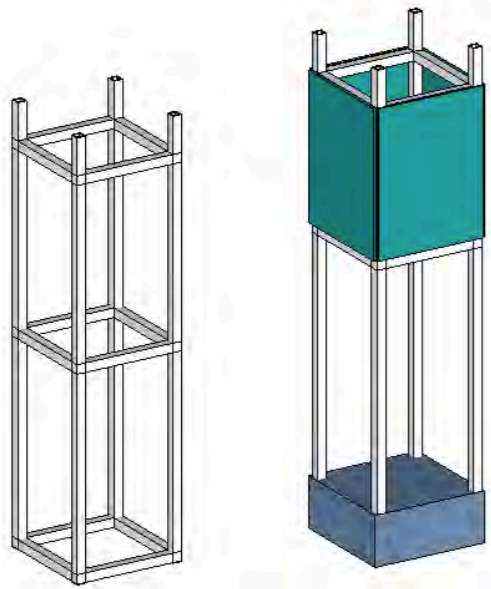
In addition to hosting transit and community amenities, the columns also act as light fixtures, punctuating important moments within the station and offering a safe and vibrant space in the night and early morning hours. Four different types of columns were developed, that we have labeled A, B, C and D here, with the peculiarity of having column C “open-able” and “expandable” into two lateral shelves. Indeed, while column A and B are conceived as static containers for transit amenities, such as ticket machines, maps and drinking fountains, the “unfoldable” mechanism of column C allows it to be flexible, able to open and host different types of programs and activities, such as a farmer’s stand for selling fresh food, a need expressed consistently by the local community.

The resulting scheme is a station design that seeks to leverage underutilized opportunities, from the infrastructure investment of ADA ramps, to available space within structural columns, to local partnerships toward a healthier community. With a healthier environment also being a core value, the 1,815 square feet of station roof will both collect significant rain water to feed station plantings and host 110 solar panels which will generate approximately 47,080 kWh per year - the equivalent energy used by approximately 6 American single family houses. The Rio Azul scheme for the Dos Rios station aims to serve as a gateway to the city of Sacramento and key element for the River District that empowers, connects, and supports the local community and ecology.

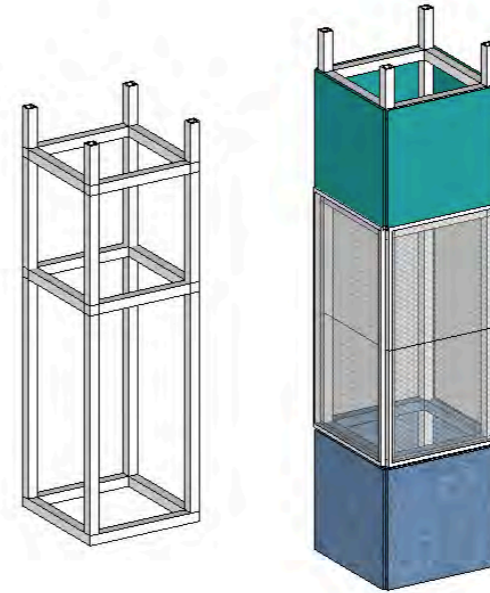
Cost: See cost estimation package in appendix E.





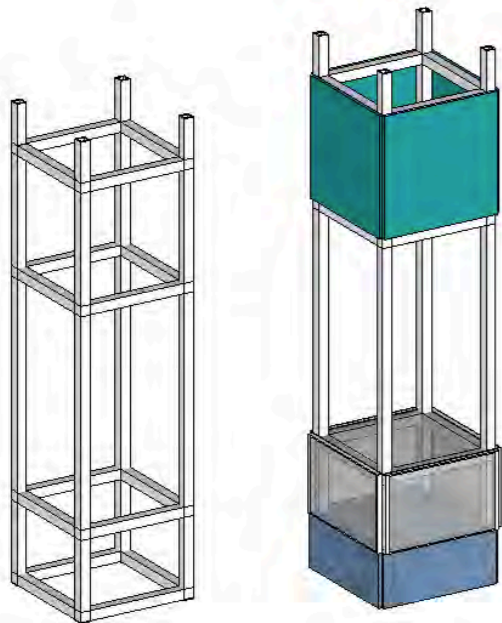


Column A

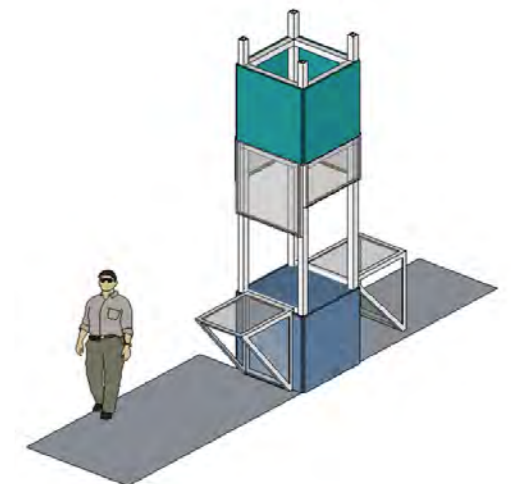
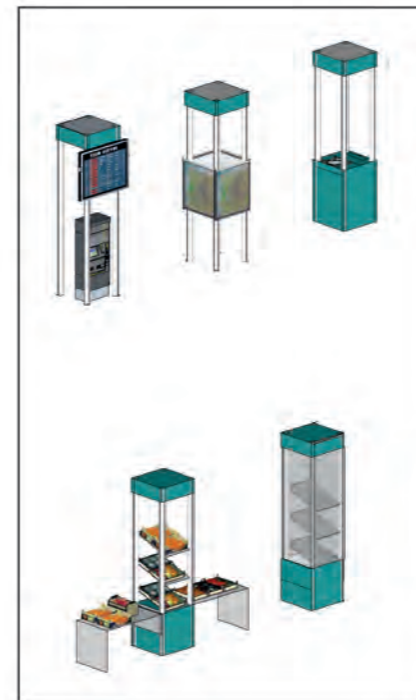


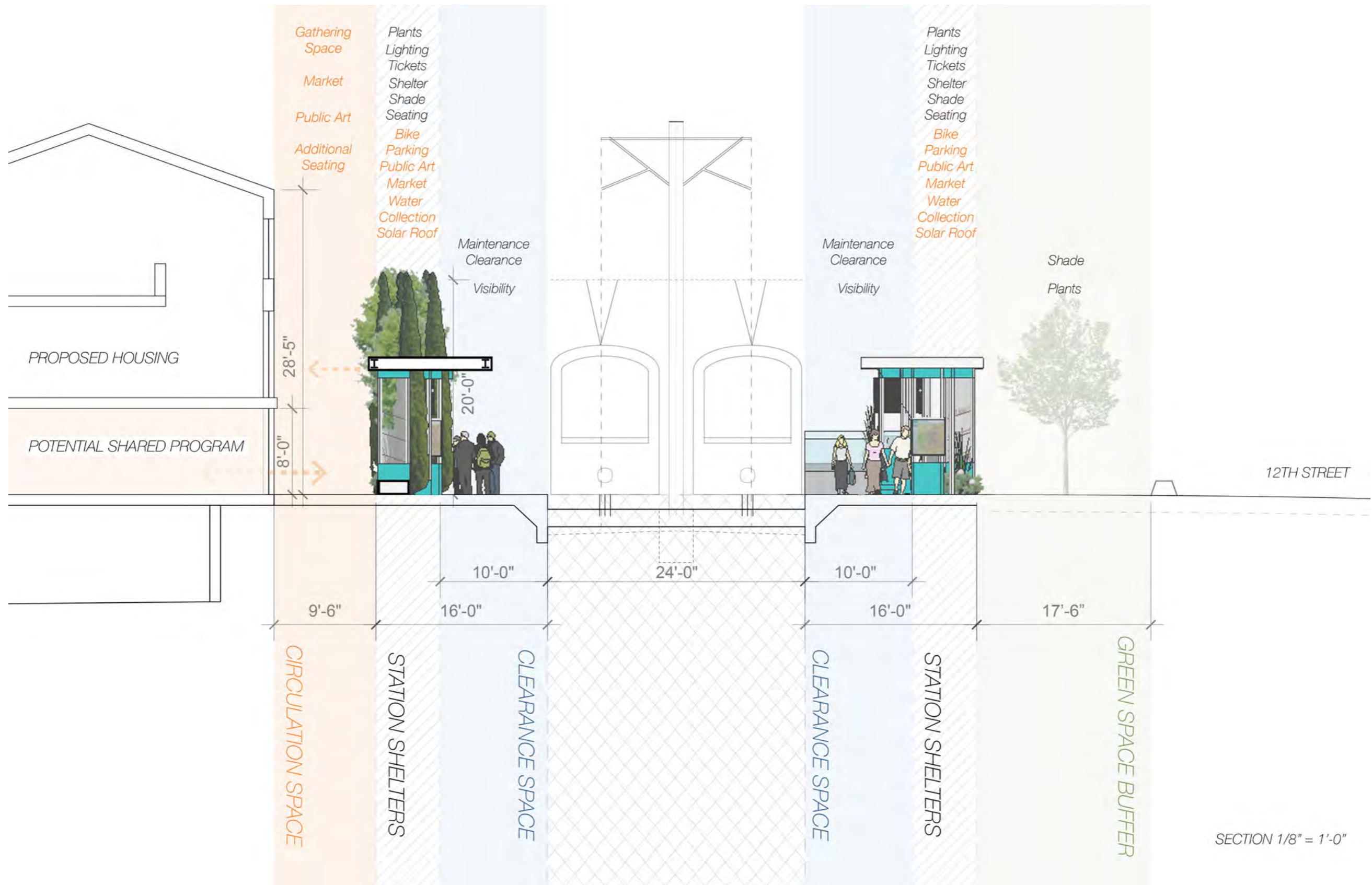
Column C

The diagrams below show the column types with their different strategies to host amenities. For example, the unfolding type C can become a market stand for hosting small pop-up markets. Types A and B hold the station maps, ticket machines, and other station necessities.



Column B

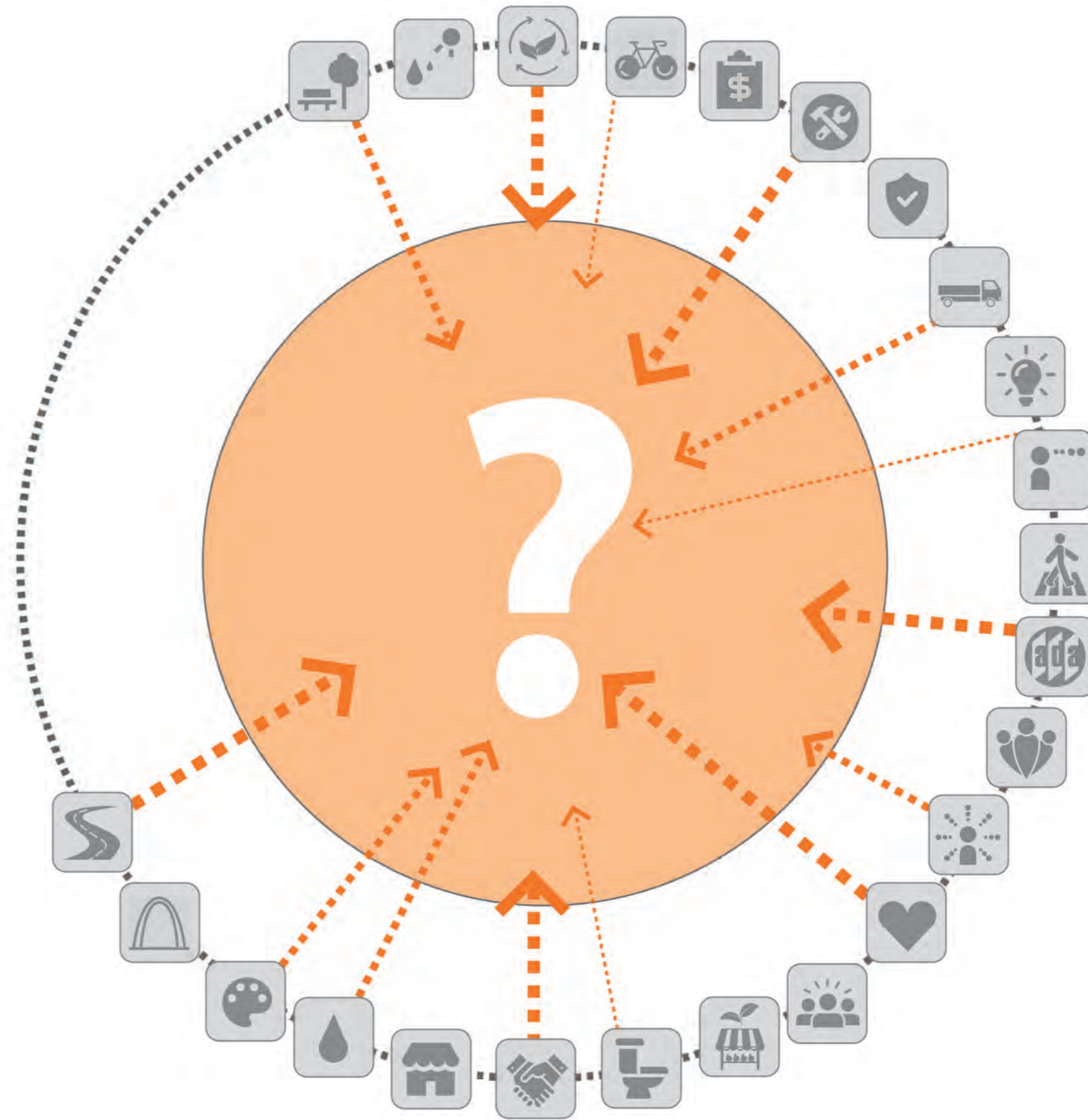




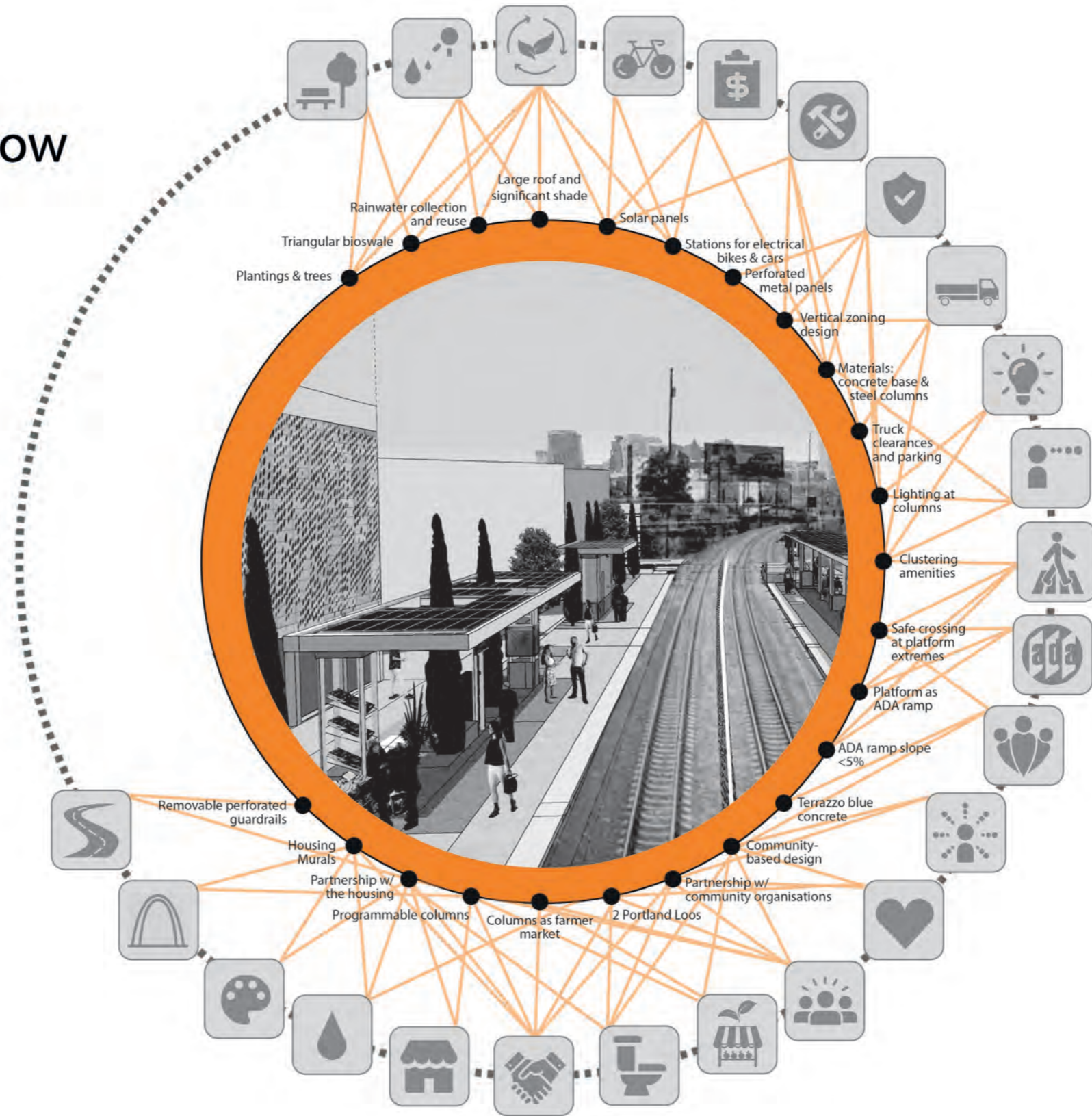
SECTION 1/8" = 1'-0"



How do
Takeaways
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Design?



Visualizing how Takeaways **impact** the Design



Recommendation

Recommendation

Community feedback from the stakeholder meetings and public presentation on September 10-12th resulted in support for the Rio Azul Scheme. The favored aspects of this proposal were the larger solar capacity, the significant shade, the simpler construction, the successful visibility, the “river-like” materials, the color, and the creative column types. For the Folded Pavilions design, community comments included the appreciation for farmers market stands, the solar energy, the incorporation of art panels, the screens but also concern for graffiti, accessibility, and durability in function. In alignment with stakeholders feedback, we recommend the Rio Azul proposal to move forward into design development and construction. In order to justify this decision, a list of positive design aspects has been created. While both proposals share many of the same beneficial elements, the Rio Azul functions at a higher caliber in both sustainability and community support.

The positive design aspects supporting the choice of the Rio Azul design are:

- large square-footage of roof and PV panel coverage for solar energy collection
- large square-footage of roof also provides extensive shade
- connects to river through material choices,

color, and name

- connects to community through partnerships for amenities within the column designs
 - space for market
 - space for mini library
 - space for small business stand
 - space for information “booth” (i.e. clinic, childcare services, local events, etc.)
- provides electric bike parking that can partner with Jump Bikes
 - further opportunity for electric car partnership
- makes accommodations for public toilets in adjacent public plaza
- provides safe, well lit, waiting and seating areas
- provides native plantings and trees as well as plant-based drainage and filtration systems
- incorporates water collection and reuse with the roof structure
- incorporates new technology for transit information/screens within the column designs

The design addresses both the concerns of the community as well as the various stakeholders in the City of Sacramento. By acknowledging the complexities of merging new with old, and by working with existing residents but also visualizing long-term impacts of this station in terms of the sustainability of Sacramento, the Rio Azul design visualizes a

new gateway to the city. It integrates public art as well as a potential design connection, in the form of a mural, with the new housing development. The lighting, the shelters, the security cameras, but most importantly the creation of an activated and heavily programmed, public space provides a secure station for the Dos Rios area. The station design provides level, accessible boarding and a ramp strategy that addresses the integration plan of the new, low-board trains. The most successful aspect of the design stems from the creation of partnerships that would connect this station to a larger urban scheme of amenities for the community. These amenities are further supported by the multi-transit scheme that brings together pedestrian ways, bike paths, electric cars and a city-wide transportation network.

‘In terms of third party vendors, the cleaning and maintenance can be written into a lease agreement. These have been done in the past and for this project could develop with SHRA and the developer. In addition, this could create local job opportunities for residents. The additional energy from the solar panels will likely be sold back to SMUD.’*

Video Presentation:

As part of the design process with the community, a video presentation was made to describe the two proposals that were presented to the stakeholders. The video explains the overall concepts of the designs in an effort to make the process more transparent to community members that might not have

known about the project until the public release. It is posted here: <https://vimeo.com/292996802>

*Information provided by SacRT.

