



Walnut Street Public Realm **Study**

January 2018

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Acknowledgements

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All maps and graphics were created by Studio for Spatial Practice.

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Introduction

Walnut Street Public Realm Study

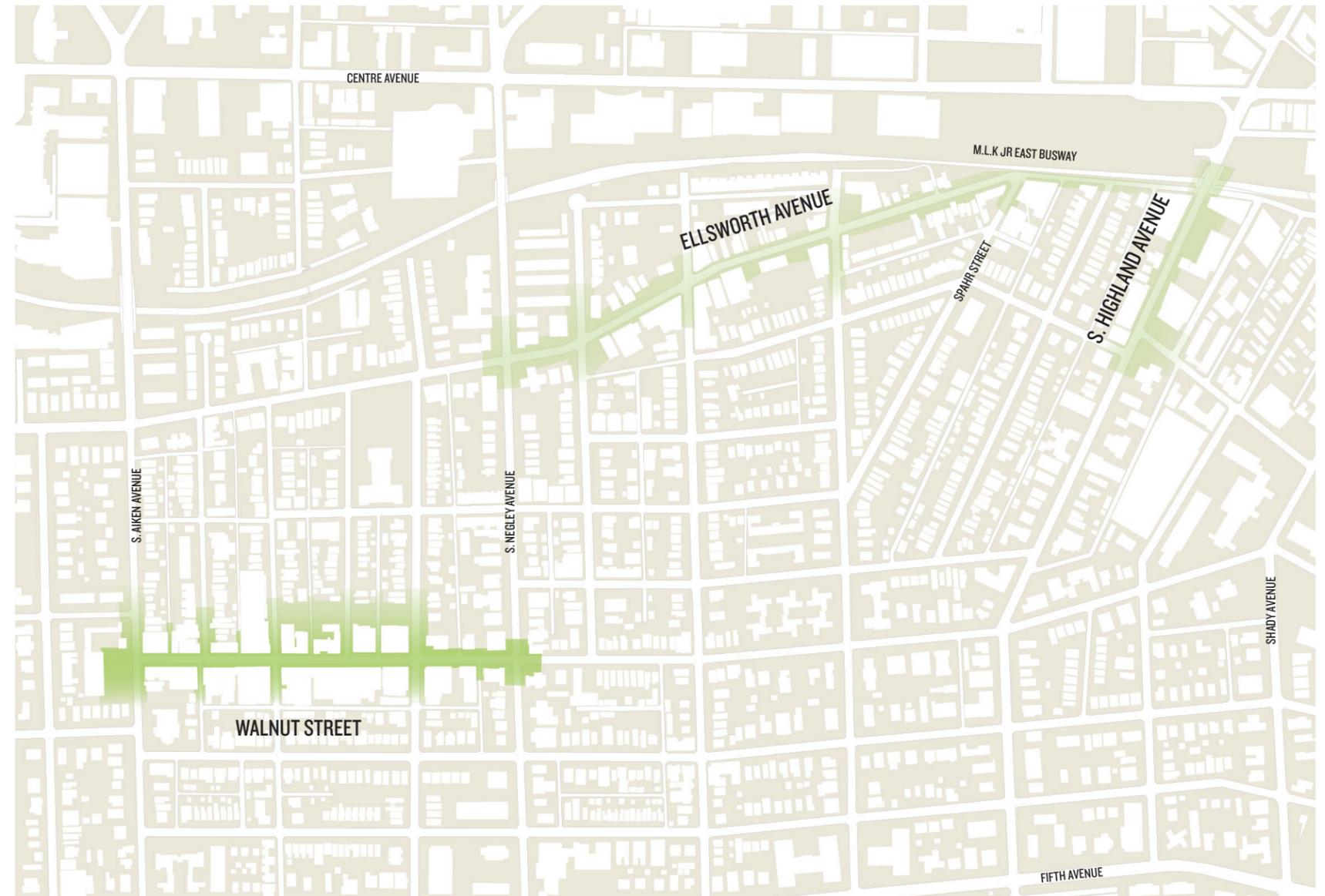
Located in the Shadyside neighborhood of Pittsburgh, the Walnut Street business district is bounded by South Aiken Avenue to the west and South Negley Avenue to the east. This section of Walnut Street, one of three business districts in the neighborhood, is frequented by visitors, commuters and the university community alike. Walnut Street, which includes storefront boutiques, restaurants and shops, has many attractions but few pedestrian amenities.

In 2017, Studio for Spatial Practice worked with Councilman Dan Gilman's office and the Shadyside Chamber of Commerce to conduct a public realm study of Walnut Street's business district to identify ways to improve the pedestrian and retail shopping experience. The term streetscape, or public realm, refers to the natural and built fabric of the activated street environment, including its design quality and visual experience. The street, including sidewalks, landscapes and vehicle cartways, is a public space where people are able to engage in various activities. A well-designed streetscape influences where people gather, encourages pedestrians to linger longer, and helps define a district's aesthetics.

As part of the project, the design team assessed Walnut Street's physical condition and worked with business and property owners to identify a set of prioritized enhancements to the district that could be implemented over time, as resources are secured. The resulting schematic-level streetscape plan, is intended to: be used as a tool for fundraising, help advance specific recommendations, raise awareness about the value of our public realm, and generally build interest in this study.

This document, which includes a schematic-level streetscape plan for the district, is intended to be used as a tool for fundraising, to help advance specific streetscape recommendations, to raise awareness about the value of our public realm, and generally build interest in this study.

This report summarizes the planning process, highlights Walnut Street existing conditions at the time the study was conducted, presents the streetscape scenarios that were reviewed by the stakeholder group, and provides a list of prioritized public realm improvements. Material palettes, referencing existing, already-built streetscape examples, were developed with guidance from the stakeholder group. The Appendix of this document includes relevant streetscape and planting details, recommended plant lists, and meeting minutes from stakeholder sessions.



District map highlighting the three Shadyside business districts. This report focuses on Walnut Street.

Process Summary

How the Walnut Street Public Realm Study Planning Process Worked

Commissioned by Councilman Gilman's office in the Winter of 2016, the Walnut Street Public Realm Study is a streetscape plan for Shadyside's Walnut Street business district, between South Aiken and South Negley Avenues. The schematic-level streetscape design incorporates and reflects stakeholder input that was obtained through three interactive stakeholder meetings, as well as a thorough inventory and analysis of Walnut Street's physical conditions. Participating stakeholders included Walnut Street business and property owners. Design scenarios were discussed, reviewed, and refined as part of the planning process.

The final plan identifies priority streetscape elements and initiatives, selecting and locating new landscape, street furniture, and lighting elements, and recommends key improvements to sidewalks, crosswalks, and bicycle parking. The report also highlights district-wide recommendations and suggests possible alternatives and/or additions to the proposed streetscape design.

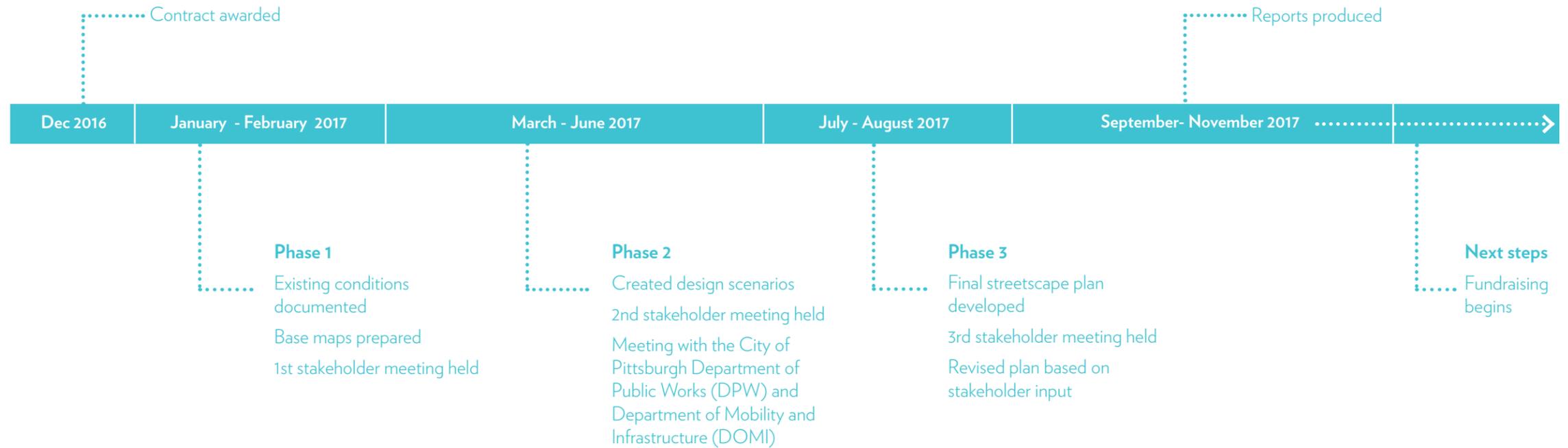
This study consisted of three phases.

Phase 1: Understanding Needs and Documenting Existing Conditions

During Phase 1, the design team documented existing Walnut Street physical conditions, identifying and locating physical elements within the public right-of-way, including: sidewalks, benches, light poles, bike racks, parking pay stations, planters, and tree pits. The team compiled this data into a detailed plan of the study area, and presented the information to a stakeholder group to solicit feedback and better understand issues and opportunities relating to the corridor.

Stakeholders placed stickers at locations where an enhanced pedestrian experience, greenery, public art, district identity, and/or

Project Timeline



better lighting are needed. They added notes to the plan drawing, and identified places that experience mobility conflicts between business operations (deliveries, dumpsters, loading and unloading), patron parking areas, and pedestrian and bike infrastructure. The group also identified places that currently accommodate, or could potentially accommodate, district-wide or community events.

Phase 2: Exploring Design Scenarios

During Phase 2, the design team processed the feedback and data compiled during Phase 1, and started to explore a series of design options for Walnut Street which would incorporate streetscape alterations, including new/ modified landscape elements, street furniture, lighting, and other improvements. Possible modifications to Walnut Street's traffic patterns were explored: converting a portion of the

roadway into a one-way street, and reclaiming on-street parking spaces to expand pedestrian zones. The design team considered "shared-street" precedents as possible long-term solutions to increasing the pedestrian realm. The shared-street approach to urban design minimizes separations between vehicles and pedestrians by removing curbs and traffic markings, creating space for recreation, socializing, and leisure.

Preliminary design alternatives were presented at a second stakeholder meeting. Photos of streetscape elements were also presented and meeting participants used stickers to select their preferred precedents. The preferred material palette, identified by stakeholders, guided the design team in developing the style and character of the street and in selecting complementary street furnishings.

In conjunction with the second stakeholder meeting, an initial meeting with City of Pittsburgh's Department of Public Works (DPW) and Department of Mobility and Infrastructure (DOMI) was held to discuss the maintenance implications of physical modifications to Walnut Street. DPW requested the use of City-approved pedestrian light standards. The Director of City Planning cautioned the design team about the effects of long-term construction projects on a business district, stating that 20% of businesses do not usually survive the transition.

Phase 3: Final Streetscape Plan

Based on input gathered during Phase 2 meetings, the design team refined the streetscape design direction for Walnut Street. An updated schematic design was presented as a series of illustrative drawings showing how a set of discrete

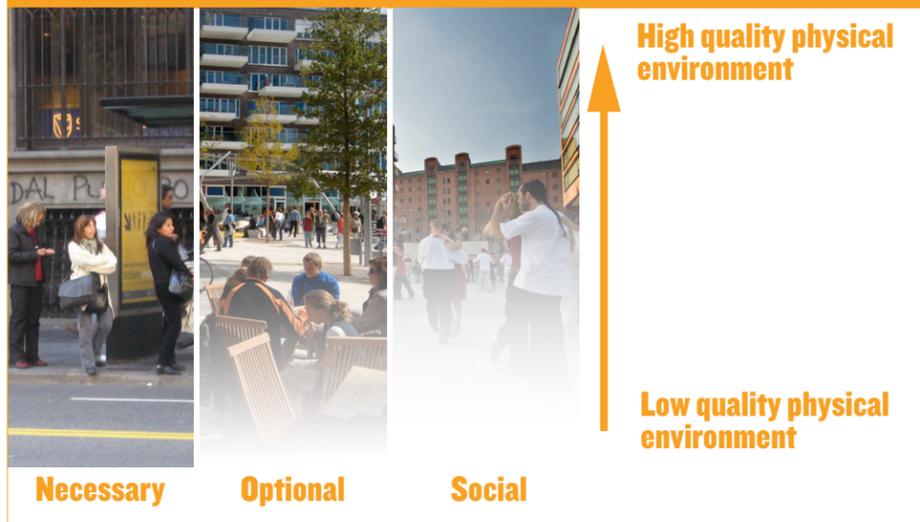
elements and interventions could each be implemented independently, as funding is secured. At the final stakeholder meeting, participants selected their top three priority elements, and a lively discussion ensued. Input from the final meeting influenced the development of the final streetscape plan, and meeting notes are incorporated into this report.

Next Steps

After completing the Walnut Street Public Realm Study, Councilman Gilman's office will pursue funding for prioritized elements that are defined in greater detail in the following pages. Further design, engineering and utility coordination will be required prior to any construction project along Walnut Street.

Phase 1 Understanding Needs & Documenting Existing Conditions

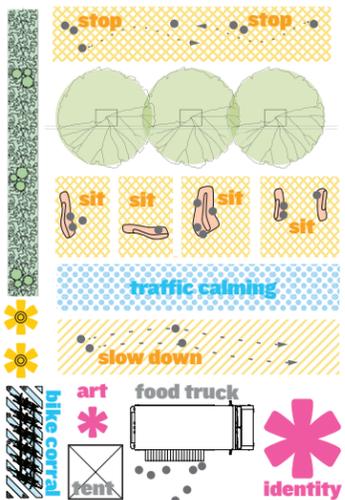
Jan Gehl's theory of public realm activity



SFSP presented Jan Gehl's theory of public realm activity which relates a high-quality physical environment to the presence of social functions beyond "necessary" and "optional" streetscape elements.



Existing Conditions Board 1 from the first stakeholder meeting.

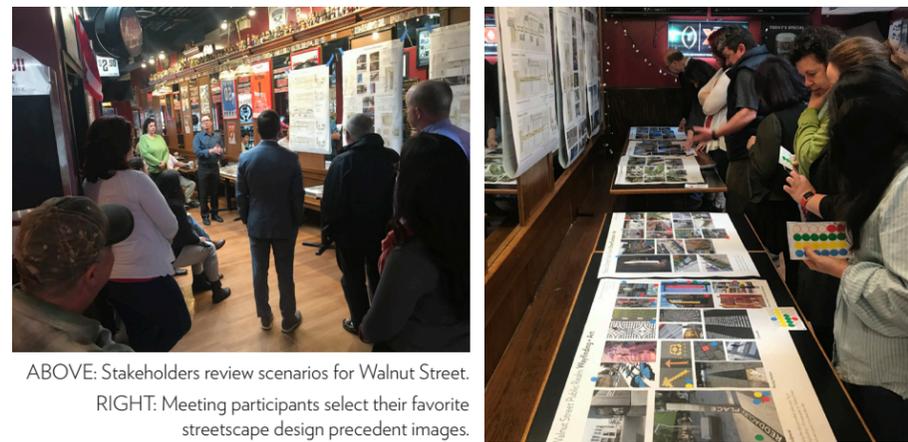


Palette of elements (stickers) used during by stakeholder participants to identify areas requiring enhanced streetscape attention.

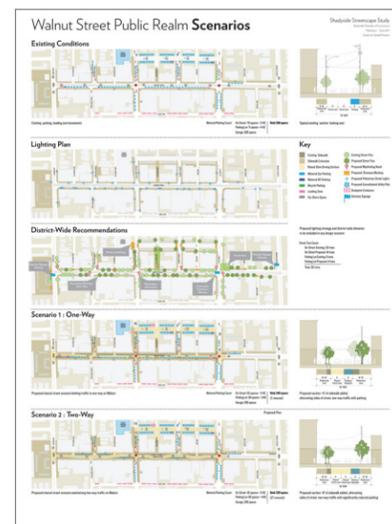
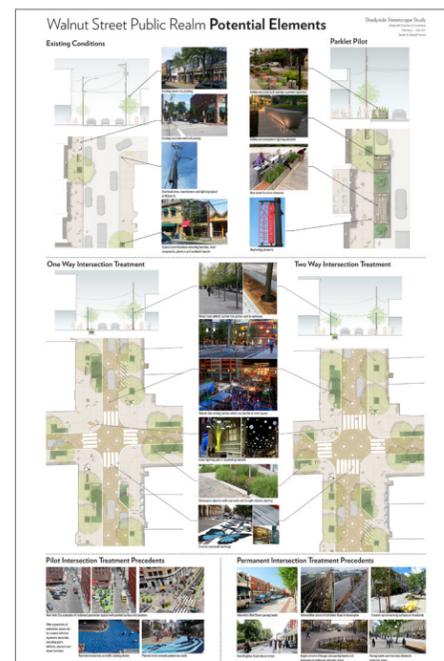


SFSP presents an overview of the Walnut Street Public Realm Study process at the first stakeholder meeting.

Phase 2 Exploring Design Scenarios



ABOVE: Stakeholders review scenarios for Walnut Street. RIGHT: Meeting participants select their favorite streetscape design precedent images.

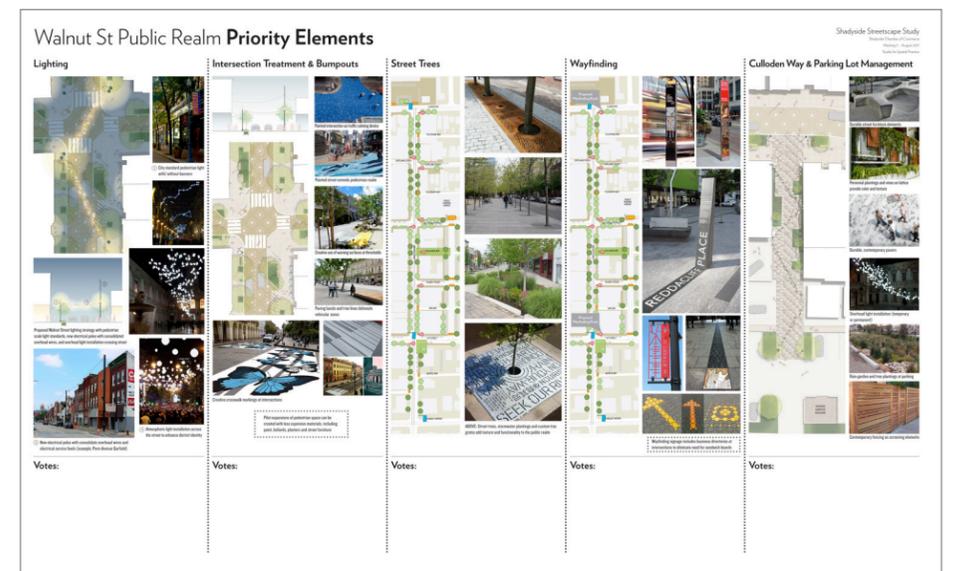


ABOVE + LEFT: Design and material boards presented at second meeting. Participants selected their favorite precedents that might appear on Walnut Street and provided feedback on scenarios and elements.

Phase 3 Final Streetscape Plan



ABOVE: Participants at the third stakeholders meeting debate priority initiatives for Walnut Street.



ABOVE: Final Priority Elements board presented at the third meeting. Stakeholders helped prioritize elements by selecting their preferred top three initiatives.



ABOVE: Alternative material palette boards were presented to stakeholders to help identify preferences for an enhanced Walnut Streetscape design.

Existing Conditions



Existing Conditions

This spread summarizes the existing physical conditions of Walnut Street's business district. The defined study area includes Walnut Street between South Aiken and Negley Avenues. The design team also discussed connections to Ellsworth Avenue, a nearby Shadyside business district, to better understand Walnut Street within its larger context. This plan was presented and reviewed at the initial stakeholder meeting to help inform future discussions about streetscape design.

MOBILITY AND ACCESS

With public transportation serving Negley and Aiken Avenues, it is easily accessible without a car. An under-utilized parking garage, a surface parking lot, and on-street parking also serve the district. Numerous

bicycle racks, a bike-corral, and a bikeshare station provide multi-modal options. Walnut Street has numerous crosswalks, curb ramps and stop signs, but pedestrian visibility and safety is often compromised by cars parked illegally, too close to intersections.

STREET CHARACTER & LIGHTING

A regional destination best known for upscale shopping, fine dining, major chain stores and independent boutiques, Walnut Street's bustling pedestrian realm hosts annual festivals as well as local and regional musical concerts. On weekends, its sidewalks are filled with shoppers, diners and dog-walkers, leaving little space for additional amenities such as: expanded planting zones, street furniture and wayfinding signage. In addition, the abundance of overhead wires, transformers, telephone poles and cobra head lights detract from the overall street character. The streetscape, which

has not had a major update since the 1980s, now looks dated and in need of repairs.

PAVING AND FURNITURE

Walnut Street's sidewalks are a patchwork of paving materials demonstrating incremental changes/repairs made over time. In some areas, the paving has heaved due to tree roots or freeze and thaw conditions. Other surfaces are slippery, cracked, or damaged and in need of repair. A variety of planters, often maintained by business owners, line the street and share sidewalk space with City-issued benches and trash / recycling receptacles. Sandwich boards placed along sidewalks often clutter the route, eliminating accessible passageways and reducing available pedestrian circulation space.

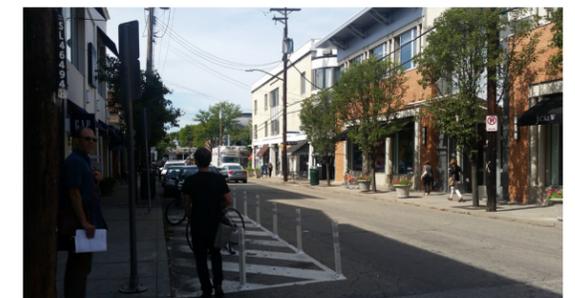
PEDESTRIAN PASSAGE

The southern portion of Culloiden Way, which connects the parking field north of Walnut to

Walnut Street proper, is a dedicated pocket park with abundant pedestrian light poles, some seating, and space for temporary artwork. This passage serves as the district entrance for everyone using the surface parking lot. The passage would benefit from additional seating, ambient lighting, and a paved extension to the parking field. It also illustrates the need for a better trash maintenance, loading, and parking strategy for businesses utilizing the northern half of Culloiden Way.

LOADING

As with any small business district, mobility conflicts abound. Loading and unloading goods causes traffic congestion along Walnut Street when loading zones are unavailable. The Shadyside Chamber of Commerce initiated a designated loading time program that may help reduce traffic slow-downs along the street.



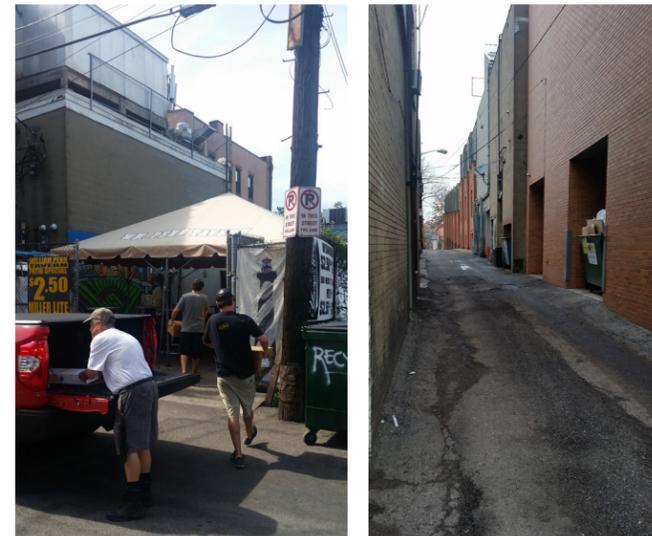
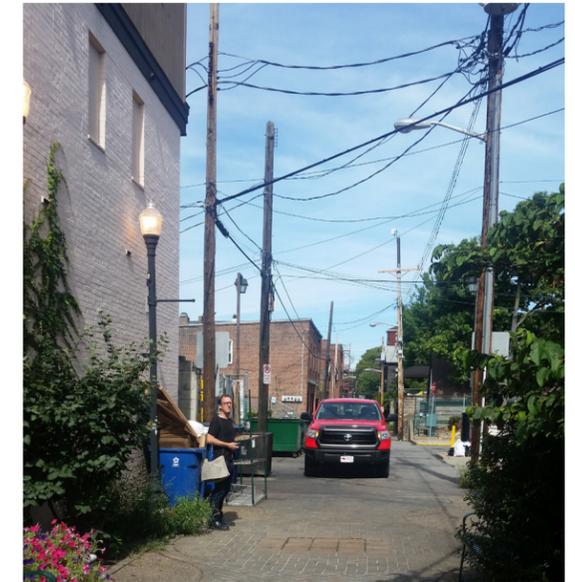
Typical streetscape conditions along Walnut Street.



Two dimensional plan documenting the existing conditions along Walnut Street, locating street trees, planters, street lights, telephone poles, mailboxes, pay stations, and paving material changes.



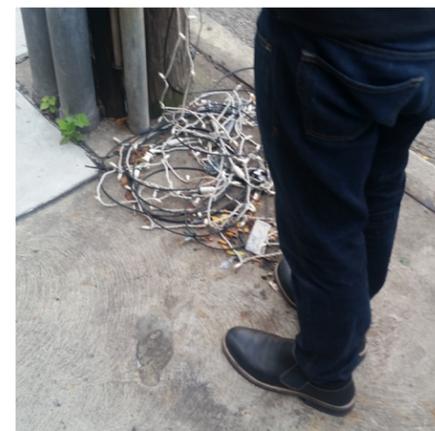
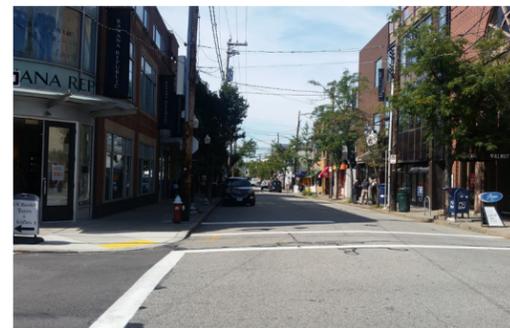
Existing section through Walnut Street showing the abundance of overhead wires, transformers and the lack of pedestrian scale light fixtures.



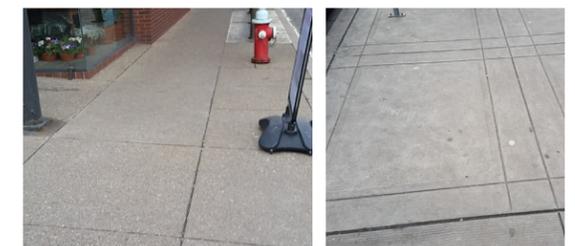
ABOVE: Unloading, loading and dumpster storage in alleys. BELOW: Typical streetscape conditions along Walnut Street.



ABOVE: There is an abundance of pedestrian light poles within the Culloden Way parklet. The transition from parking field to parklet is abrupt and apparently lacks a trash management strategy.



LEFT TOP + BOTTOM ROWS: Typical streetscape conditions on Walnut Street showing typical paving, furniture and signage. ABOVE: Non-functional lighting strands are in place on telephone poles along Walnut Street.



ABOVE: Typical paving conditions.

Plan Development

Approach

The design team worked with Councilman Gilman's office to develop a multi-faceted planning approach incorporating the following Design Principles:

- Design the street as a stage for public life. Walnut Street is more than just a cartway; it is a critical public space that animates the social and economic life of Shadyside.
- Improve the physical quality and character to draw more people to the district and encourage them to linger.
- Enhance and amplify Walnut Street's existing identity.
- Apply a palette of elements, contributing to a sequence of unique places, rather than establishing a generic standard.
- Integrate Pittsburgh's Complete Streets policy* into the design.

These Principles guided the design team in preparing for the first stakeholder meeting.

A Palette of Elements

At the first stakeholder meeting, the design team asked participants to consider where, along Walnut Street, a more robust public realm would be desirable. Participants were provided with a Palette of Elements, in sticker format, to aid in the interactive streetscape design discussion.

The Palette included the following:

1. PEDESTRIAN EXPERIENCE. This category focused on pedestrian improvements that would enhance and help diversify social activity in the street. Possible improvements might include design scenarios through which sidewalk space could be expanded in permanent or temporary ways.
2. GREENING. This category includes: low plantings (decorative and performative, helping to absorb stormwater), hanging baskets, street trees in planted areas and within grates, planters, and planted pots.
3. ART, IDENTITY & LIGHTING. The following items can be combined in the public realm to help celebrate and express Walnut Street's unique character: identity and wayfinding signage and banners, City-standard pole lights, light swags across Walnut Street, building-mounted lights, and public art.
4. MOBILITY. These elements / actions include: calming traffic with crosswalk enhancements and bumpouts, making loading zone improvements, creating designated bike share stations and parking, and instituting a strategic parking management plan.

5. EVENTS. This category of elements includes permanent or temporary structures and / or infrastructure to support vendor festivals, food truck access and operations, film screenings, concerts, and other events in the district.

Stakeholders located these elements on a map of Walnut Street at locations where they would make the greatest impact. The design team reviewed the feedback provided, tested element locations and design strategies, and finally produced the Conceptual Plan that follows.

After documenting existing conditions and holding the first round of stakeholder engagement meetings for Walnut Street's Public Realm, it was clear that generic recommendations or a one-size-fits-all design for the street would not suffice. The Palette of Elements is a kit of parts that will:

- help reinforce the character and identity of the district, while also
- enhancing the pedestrian experience by creating a series of unique spaces along Walnut Street.

For each of the Priority Initiatives listed in the following pages, relevant components from the Palette of Elements are identified.

Parking / Vehicular Movement Inventory & Early Scenarios

At the first stakeholder meeting, stakeholders identified numerous locations within the Walnut Street district where there are conflicts between pedestrians, moving vehicles, visitor parking areas, loading operations, and trash management, resulting in sub-optimal public realm conditions. The design team took a careful inventory of existing parking locations and capacities, loading areas, and vehicle movement patterns to better understand the flow of people and cars throughout the district. This inventory, shown to the right, was presented at stakeholder meeting 2.

At the second stakeholder meeting, two alternate design scenarios were presented for review and discussion. Both scenarios explore alterations to parking and street geometry designed to prioritize pedestrians by expanding sidewalks and slowing traffic movements. The scenarios also explore the potential of using special paving markings or a curbless environment to create a shared street to further prioritize pedestrians.

In Scenario 1, a portion of Walnut Street, from Aiken to Ivy, would be converted to one-way. By removing a lane of traffic, valuable square footage could be reallocated to pedestrians, creating space for an enhanced streetscape with amenities. A portion of Ivy Street leading to the surface parking lot would become two-way, and the surface parking lot would act as a through-street to create a traffic loop within the district. Seven on-street parking spaces would be removed to facilitate the new traffic pattern.

In Scenario 2, two-way traffic was maintained, and a lane of parking was removed on alternate sides of the street, reallocating that space to the pedestrian realm. In this scenario, twenty-seven on-street parking spaces would need to be removed to accommodate the expanded public realm.

Stakeholders felt that gaining additional pedestrian realm area was important, but the loss of on-street parking was deemed too detrimental to the district. Instead, the design team proposed that interested parties should pursue the soon-to-be-enacted Parklet Program, which is detailed on the following pages, to temporarily test the impact of removing parking and gaining pedestrian space at key locations.

Stakeholders had a mixed reaction to converting Walnut to a one-way street, with some supporting the idea, but others strongly opposing it.

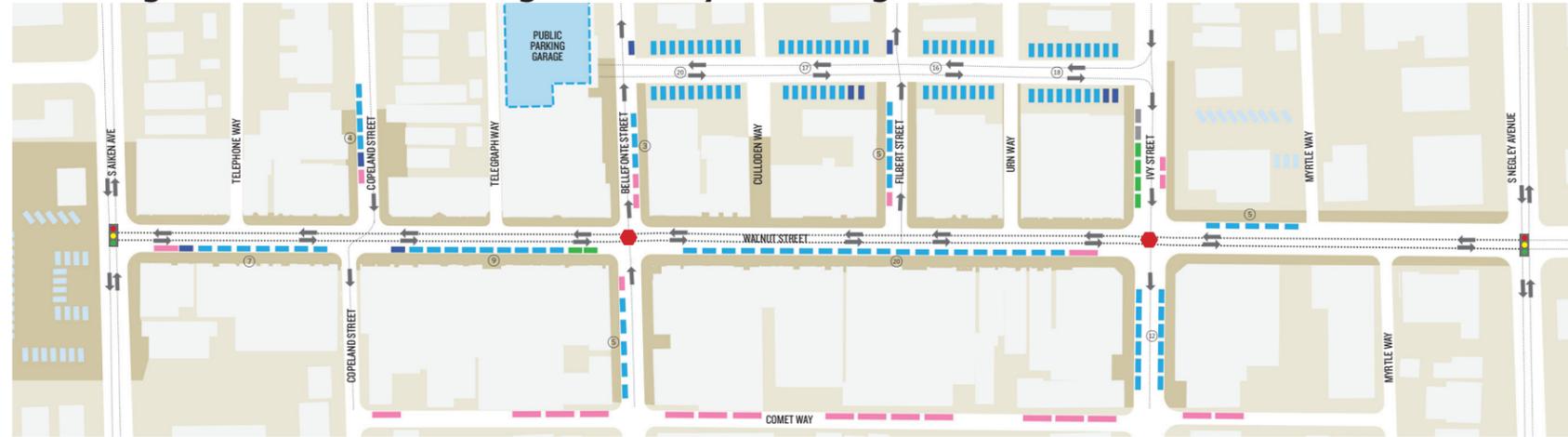
Conceptual Plan

Ultimately a modified version of Scenario 2 was chosen for further development, with alterations to simplify bumpouts, limit geometrical changes and not remove any street parking.

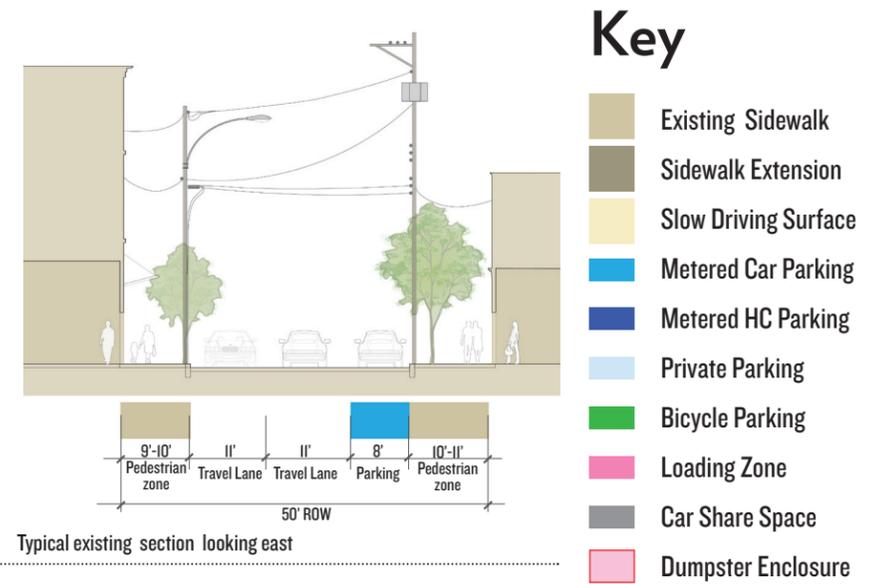
In Phase 3 of the study, the design team synthesized analysis, feedback and design scenarios from Phases 1 and 2 and developed the conceptual plan and a list of Priority Initiatives for review by the stakeholder group, which ranked the proposed interventions and provided feedback.

* Pittsburgh's Complete Streets approach aims to improve the quality of life for all Pittsburghers by creating streets that are safe and comfortable for all people, activated public spaces, and connected transportation networks for everyone. This initiative will consider all modes of travel in making mobility recommendations – walking, biking, taking transit, and driving – and create a more livable public realm that encourages active lifestyles.

Existing Conditions: Parking Inventory, Loading & Vehicle Movements



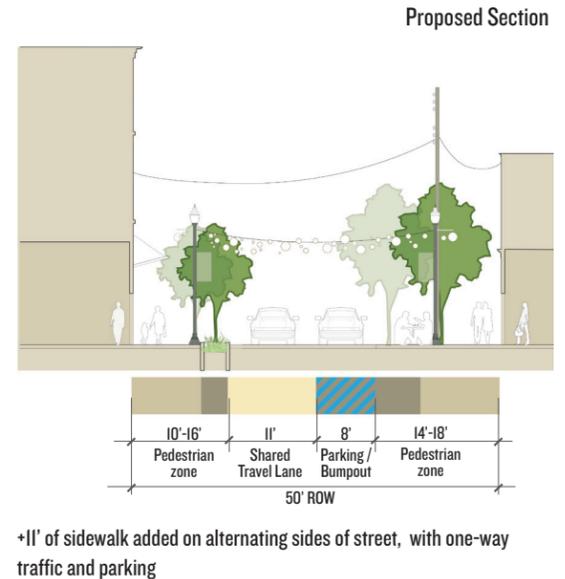
Metered Parking Count > Garage: 208 spaces On Street: 70 spaces + 3 HC Parking Lot: 71 spaces + 4 HC | Total: 356 spaces



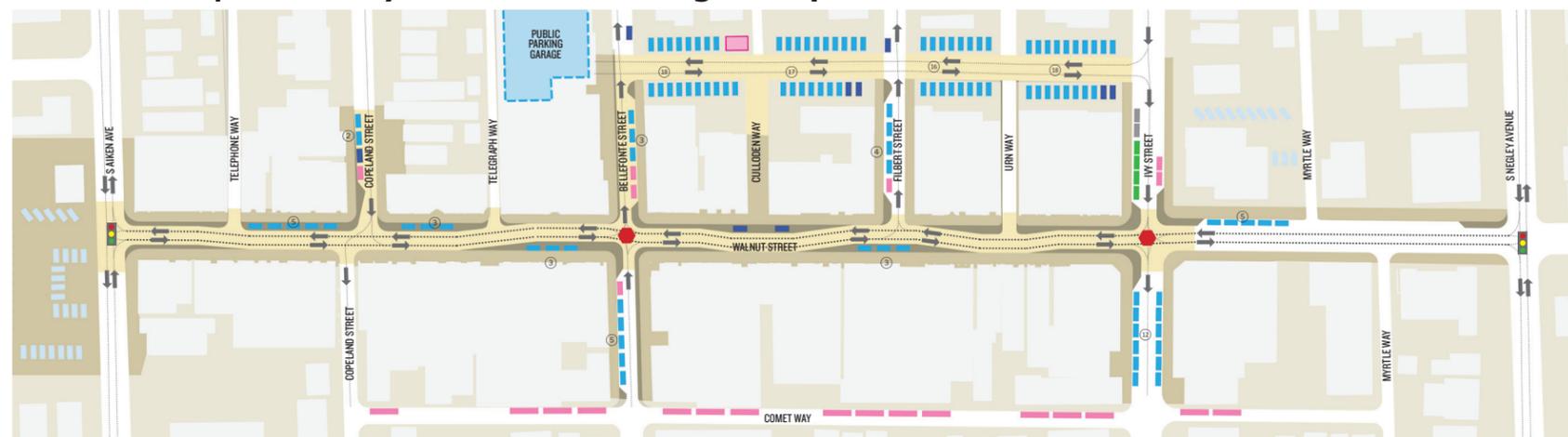
Scenario 1 | One-Way with Expanded Sidewalks



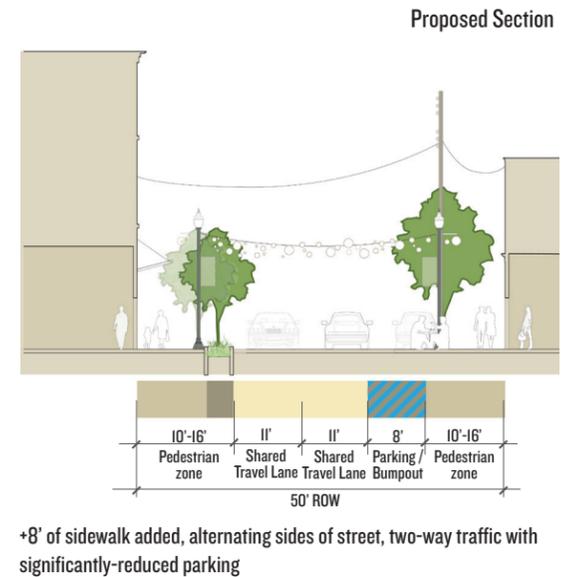
Metered Parking Count > Garage: 208 spaces On Street: 65 spaces + 3 HC Parking Lot: 69 spaces + 4 HC | Total: 349 spaces (7 removed)



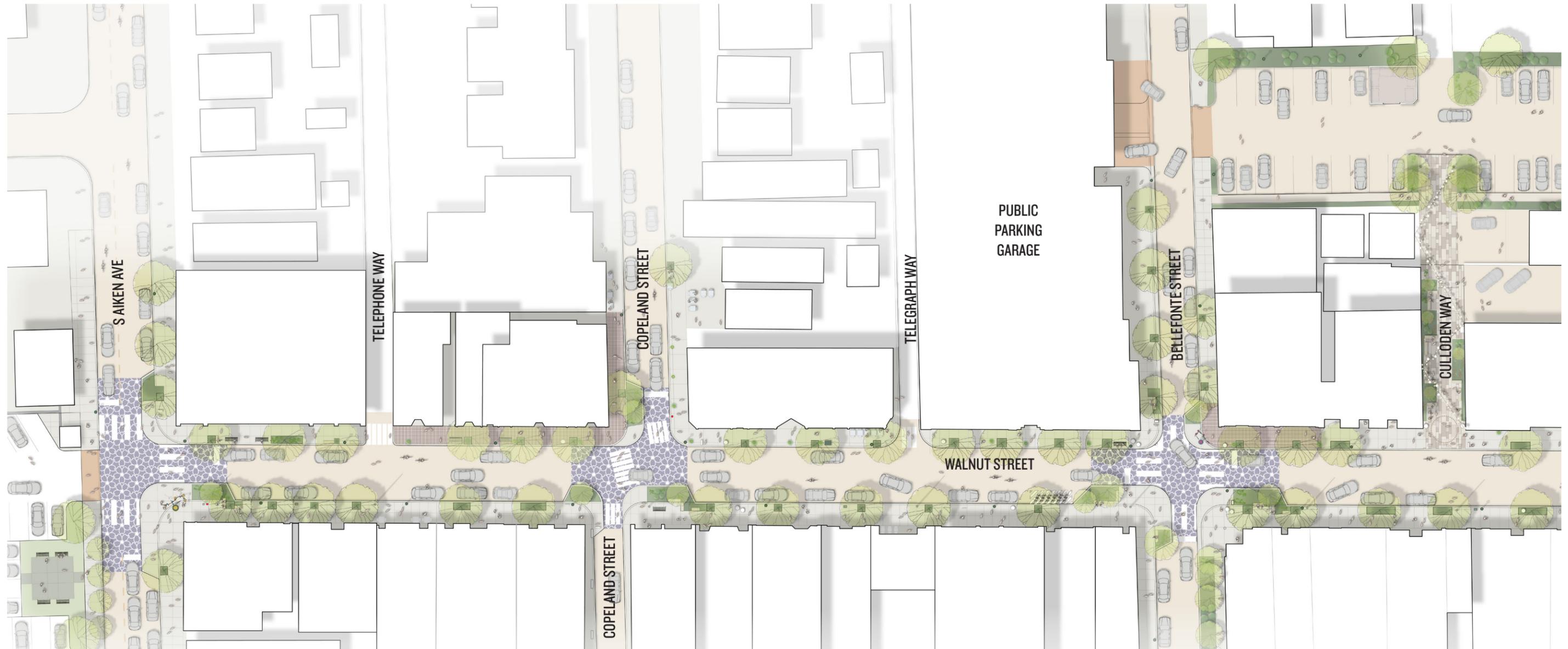
Scenario 2 | Two-Way with Alternating Bumpouts



Metered Parking Count > Garage: 208 spaces On Street: 45 spaces + 3 HC Parking Lot: 69 spaces + 4 HC | Total: 329 spaces (27 removed)



Conceptual Plan



Overview

The final conceptual plan for Walnut Street enhances the pedestrian experience with a linked palette of elements that can be phased in over time. Rather than completely reconstruct the streetscape from building-face to building-face, the plan recommends integrating a limited set of new elements into the existing environment to enhance the visual character and identity of the street, improve pedestrian comfort and safety and enhance visitor navigation. The elements are designed to be implemented over time as funding becomes available and to limit disruption to businesses on the street.

Conceptual Plan Components

LIGHTING

City-standard acorn pedestrian lightpole fixtures are proposed to replace the cobrahead lights along Walnut Street, side streets and in the Parking Authority's surface parking lots between Ivy Street and Bellefonte Street. New light posts should be staggered across the street from each other and may have banners attached to them.

INTERSECTION TREATMENT & BUMPOUTS

The four main intersections on Walnut Street, at South Aiken Avenue, Copeland Street, Bellefonte Street and

Ivy Street, will have a new surface treatment applied to the asphalt, increasing pedestrian visibility and safety. In areas adjacent to these intersections, illegal parking is commonplace, with cars often blocking accessible curb ramps and making it difficult for other drivers to see pedestrians. At these areas, permanent or temporary sidewalk bumpouts may be installed to shorten pedestrian crossing distances and create extra space for plantings and stormwater infrastructure, public art, and information kiosks.

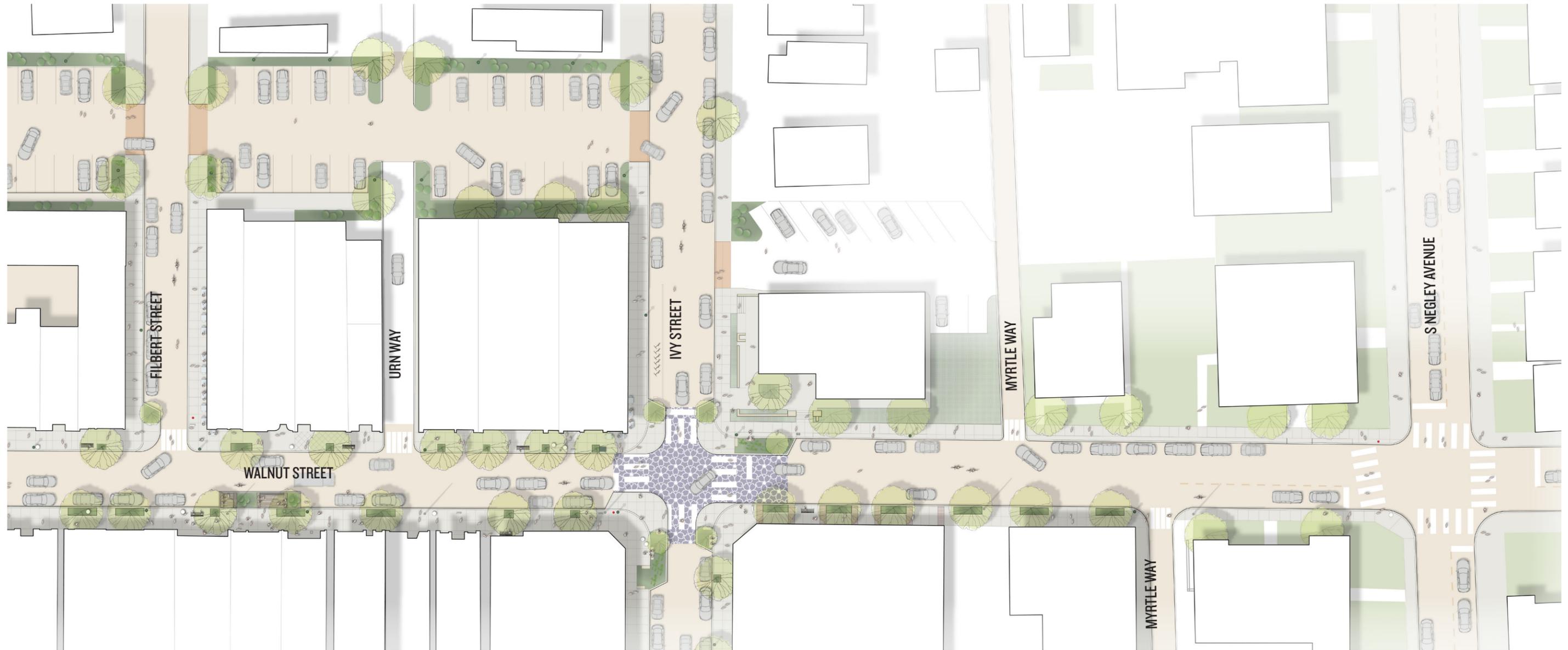
WAYFINDING

Information kiosks, placed at the above-mentioned major pedestrian intersections, could contain business

directories, a map of the business district, as well as bicycle and vehicle parking information. Vehicular gateway signage at Negley and South Aiken Avenues may help direct drivers to the business district and district-serving parking locations.

STREET TREES

Additional street trees should be re-introduced into empty tree pits and new tree pits along Walnut Street in an evenly-spaced arrangement. Tree pit dimensions should follow City standards, providing enough space for healthy tree root conditions, and an opportunity to provide artful expressions in the form of custom tree grates.



Proposed conceptual plan for Walnut Street.

CULLODEN WAY

The pedestrian walkway between Walnut Street and the Port Authority surface lot should be upgraded with improved paving, existing donor-etched bricks, atmospheric overhead lighting, new plantings, and a rearranged seating layout. Additionally, dumpsters should be consolidated into a new location within the surface lot, in a screened enclosure, helping to establish a more pleasant pedestrian environment.

PARKLET

Working with the City and business district stakeholders, a temporary parklet could be introduced along Walnut Street corridor in the place of one or two on-street parking space(s). The parklet could create space for outdoor seating and plantings, elements that are difficult to introduce to the streetscape due to the narrowness of Walnut Street's sidewalks.

Priority Initiatives | Overview

Stakeholders were asked to prioritize the Conceptual Plan elements to help inform future fund-raising activities.

The resulting Priority Initiatives include:

- Lighting
- Intersection Treatment & Bumpouts
- Street Trees & Stormwater Planting
- Wayfinding
- Culloden Way & Parking Lot Management
- Parklet Program (in development)

Presented together, the diagrams on this page spread provide a graphic overview of proposed district-wide improvements that are intended to enhance Walnut Street's public realm. These initiatives can be completed in tandem or independently of each other as funding becomes available. It is important to note, however, that further design, technical expertise and coordination with City departments may be required to optimally and legally implement the initiatives.

Lighting along Walnut Street was discussed at length during stakeholder engagement meetings. Currently, highway-standard cobra head fixtures attached to telephone poles provide the majority of public realm lighting. An abundance of unused string lights, utility wires and transformers also add to the visual clutter. To create a unique identity for Walnut Street, the design team developed a three-pronged lighting approach involving new pedestrian pole lights, consolidated utility poles and overhead identity lighting. The Lighting Strategy plan diagram, to the right, locates proposed pedestrian street lights and consolidated utility poles along Walnut Street. Overhead lighting would best be developed further in collaboration with an artist and / or lighting designer.

In addition to lighting improvements, the design team developed recommendations for new streetscape elements to be introduced into Walnut Street's public realm. The Streetscape Elements diagram to the right indicates stakeholder-approved locations for proposed elements, including increased

stormwater plantings, additional street trees, wayfinding information at intersections, gateway identity markers at prominent intersections and driveway markings at pedestrian crossings adjacent to the surface parking lot to slow traffic and improve walkability. Vehicular/ gateway signage at South Aiken and Negley Avenues is also proposed, to alert visitors and direct them to the business district. Adding real-time information about available parking spaces could help visitors find parking more easily.

The following pages summarize the Priority Interventions, in the order deemed by stakeholders to be most-to-least critical, and describe the associated details and material palettes that would likely be used when implementing them in the future. Supporting information, including material palettes selected by the stakeholder group and technical details, may be found in the attached Appendix.

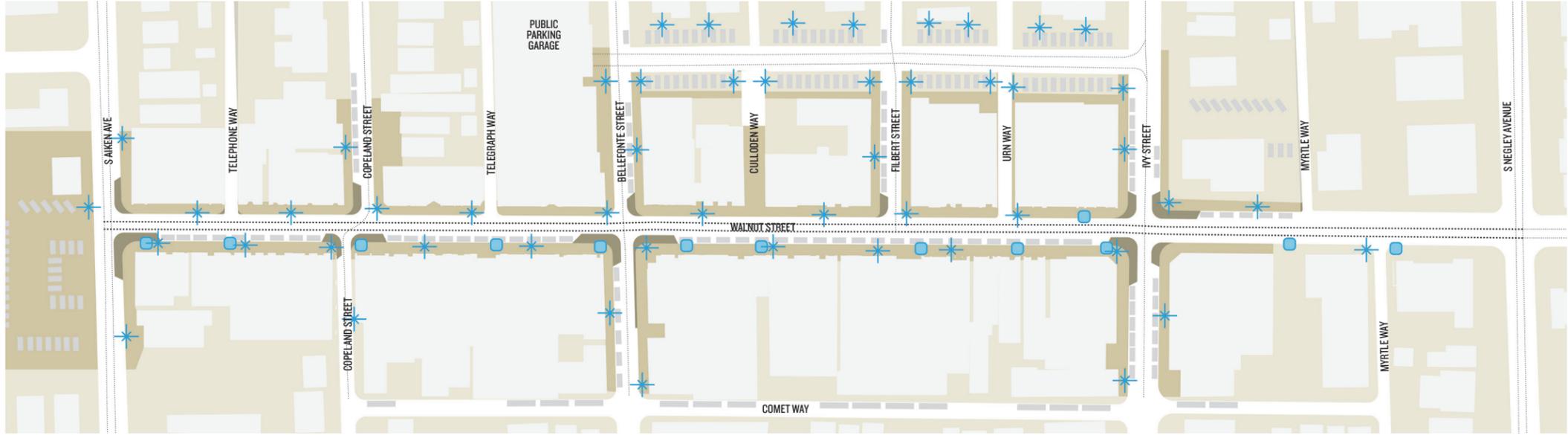


Existing section through Walnut Street showing an abundance of overhead wires.



Proposed section through Walnut Street showing increased street tree plantings as well as a three-pronged lighting approach with new pedestrian pole lights, consolidated utility poles and overhead identity lighting.

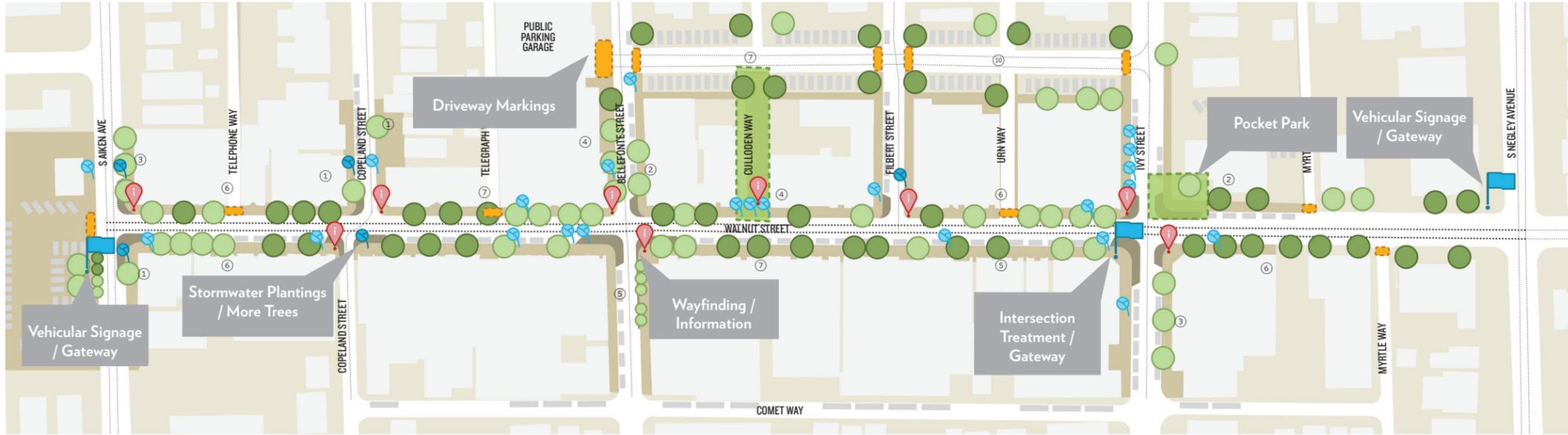
Lighting Strategy



Key

- Existing Sidewalk
- Sidewalk Extension
- Proposed Pedestrian Street Lights
- Proposed Consolidated Utility Pole
- Proposed Wayfinding Kiosk
- Proposed Driveway Marking
- Existing Street Tree
- Proposed Street Tree
- Pocket Park
- Gateway Signage

Streetscape Elements



Street Tree Count

On-Street Existing:	28 trees
On-Street Proposed:	47 trees
Parking Lot Existing:	6 trees
<u>Parking Lot Proposed:</u>	<u>11 trees</u>
Total:	92 trees

Priority Initiatives | Lighting

Lighting along Walnut Street was discussed at great length during project meetings. At present, highway-standard cobra head fixtures, attached to telephone poles, provide the majority of lighting on Walnut Street. Walnut Street receives some incidental lighting from storefront windows. The Culloden Way parklet is uniquely overlit at night as a result of closely-placed City-standard pole lights. An abundance of unused string lights, utility wiring, and transformers create visual clutter throughout the Walnut Street corridor.

The highest priority intervention identified by the stakeholder group was a three-pronged lighting strategy for Walnut Street. The strategy includes:

1. Pedestrian-scaled City of Pittsburgh standard light poles and fixtures,
2. New utility poles with consolidated overhead wires, and
3. Atmospheric light installations that would cross Walnut street and continue above the Culloden Way parklet.

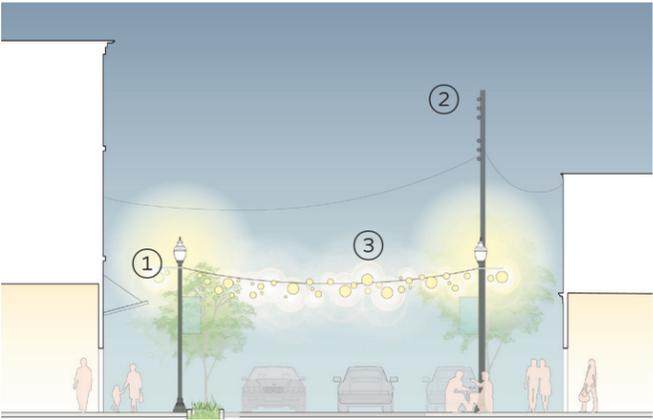
The three lighting components could be implemented individually, as part of a phased lighting improvement strategy. The proposed overhead, atmospheric lighting could be treated as a public art opportunity with different funding paths. It could be developed in collaboration with a local artist, independent from the pedestrian and utility pole installations.

The existing cobra head light fixtures, and corresponding telephone poles, would be entirely replaced with new utility poles and pedestrian-scaled light poles that could be furnished with artful district signage and / or planted baskets hung from banner arm attachments. The new poles shown in Photo 2 on this page were recently installed along Penn Avenue in Garfield, helping to edit and reorganize existing utility lines and reduce visual clutter.

At the time of writing this report, Duquesne Light was developing a cost estimate for utility consolidation with new poles on Walnut Street. Councilman Gilman's office will follow up with Duquesne Light.



① City standard pedestrian-scaled light pole with/ without banners.



Proposed lighting strategy with pedestrian scale light standards, new electrical poles with consolidated overhead wires, and lights installed above and across Walnut Street.



③ Paul Cockledge Studio's installation at Museum of Art Architecture and Technology, Lisbon.



③ Atmospheric light installation over the street to enhance the district's identity (Turin, Italy).



③ Constellation decoration in Turin, Italy.



② New electrical poles with consolidated overhead wires and electrical service feeds (example: Penn Avenue in Garfield).

Priority Initiatives | Intersection Treatments & Bumpouts

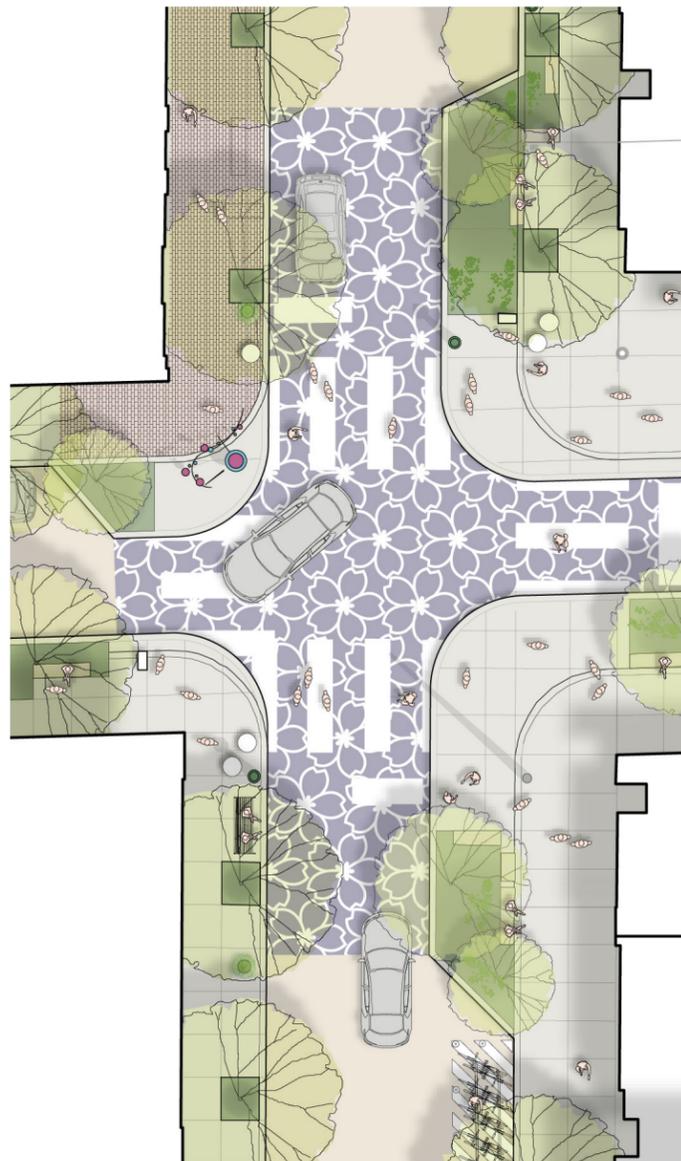


Painted intersection as traffic calming device.

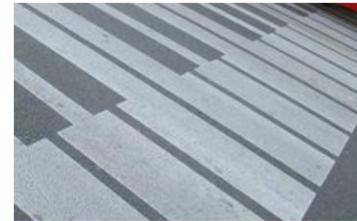


Painted street extends the pedestrian realm.

Pilot expansions of pedestrian space can be created with less expensive materials, including paint, planters and street furniture.



Creative crosswalk markings at intersections.



Creative crosswalk markings at intersections.



Paving bands and tree lines delineate vehicular zones.



Bumpouts, expansions to the sidewalk at intersections, reduce the street crossing distance for pedestrians and create additional space for streetscape amenities. As requested by the stakeholder group, the proposed bumpouts for Walnut and Ivy and Walnut and Bellefonte will introduce curb bumpouts and possibly a tabled intersection, which would raise the street surface to the sidewalk elevation as an added safety measure.

In addition to the proposed curb bumpouts, the paving surface of an intersection can also be treated. Creative crosswalk and / or intersection markings in the space between crosswalks can be a way to enhance the district identity and create public art opportunities. Painted markings are cost-effective design and allow strategies to be tested on a temporary basis. Permanent intersection treatments, altering the built environment, are more costly and are best introduced after a pilot-testing period.

Pilot (Temporary) Intersection Treatment Precedents



New York City examples of reclaimed pedestrian spaces with painted surface and planters.



Painted intersection as traffic calming device.

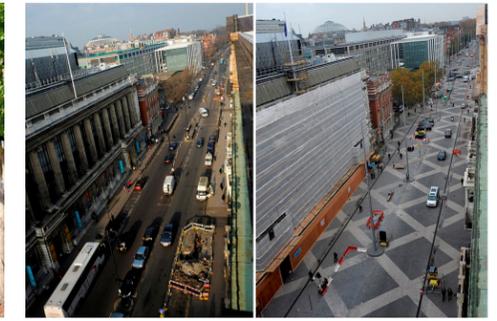


Painted street extends pedestrian realm.

Permanent Intersection Treatment Precedents



Wall Street, in Asheville, TN, has paving bands.



Before/After photo of Exhibition Rd. in Kensington, U.K.



New Rd. shared street in Brighton, U.K.



Argyle Street in Chicago uses paving bands and bumpouts to delineate vehicular zones.

Priority Initiatives | Street Trees



Plan diagram showing the location of existing and proposed street trees.

The environmental, social, and economic benefits of street trees are well-documented and they should be incorporated into most city planning efforts. A healthy, vibrant line of street trees adds economic value to adjacent properties and enhances the pedestrian realm by cleaning the air and providing shade from the summer sun.

Walnut Street currently has a number of healthy street trees. The design team recommends replacing missing street trees where planters exist, and planting new trees, at the locations shown in the diagram above. Street trees may be accompanied by low plantings at the proposed intersection bumpouts where additional space would allow greenery to flourish.

Stormwater tree pits may also be introduced in areas where pedestrian circulation space would be further compromised by the addition of streetscape elements. Tree pits with increased depth and decorative grates will protect tree roots from compaction while allowing for a greater volume of growing medium and stormwater capture.

A plant list, street tree planting details, and stormwater planting pits recommendations are included in the Appendix of this report.



ABOVE: Street trees, stormwater plantings and custom tree grates add texture and functionality to the public realm.

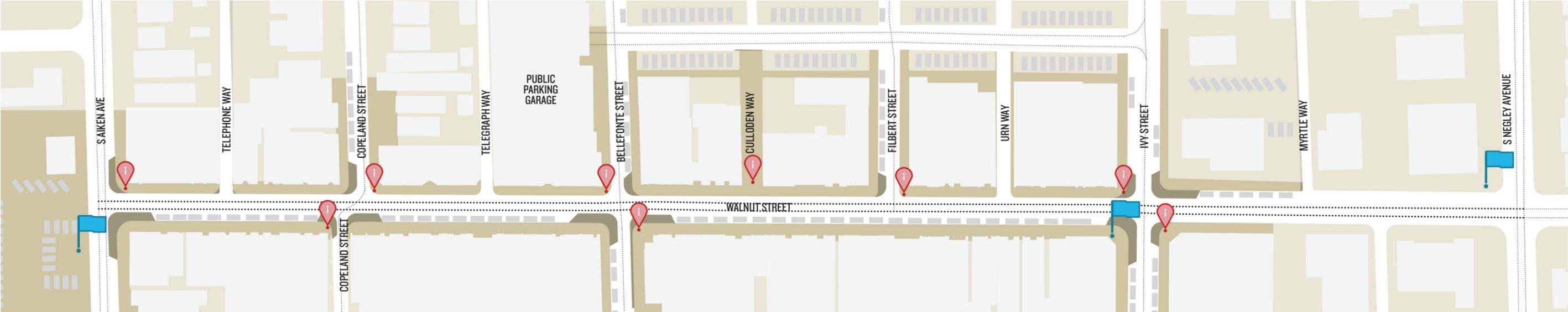
Key

- Existing Sidewalk
- Sidewalk Extension
- Existing Street Tree
- Proposed Street Tree

Walnut Street Tree Count

On-Street Existing:	28 trees
On-Street Proposed:	47 trees
Parking Lot Existing:	6 trees
Parking Lot Proposed:	11 trees
Total:	92 trees

Priority Initiatives | Wayfinding



Plan showing location of proposed wayfinding kiosks and gateway elements.



This example of wayfinding signage from London helps to establish a streetscape identity while also providing localized information.



This die-cut metal banner incorporates a diagrammatic map of the district.

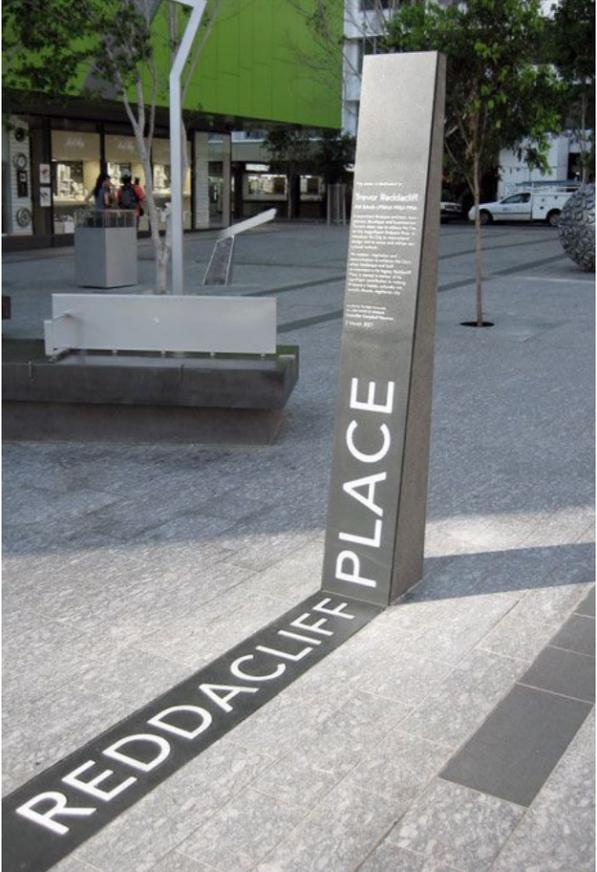
Key

- Existing Sidewalk
- Sidewalk Extension
- 📍 Proposed Wayfinding Kiosk
- 🚩 Gateway Signage

Wayfinding signage includes business directories at intersections to eliminate need for sandwich boards



Color changes within decorative pavers set into patterns activates the ground plane.



Creative wayfinding elements may use multiple planes to provide information.

Wayfinding is an information system that guides people through the public realm and enhances their understanding of the space around them. These information systems, or wayfinding techniques, help to enliven business districts, reinforce the district identity, and assist visitors by providing up-to-date listings and locations.

Today, Walnut Street's sidewalks are cluttered with benches, cafe tables and chairs, planters, and other site furniture. Sandwich boards placed by individual businesses further crowd pedestrian circulation space. Stakeholders felt that introducing wayfinding kiosks at intersections could help free up circulation space and reduce visual clutter while helping to direct visitors to second-story businesses or those located on side streets. The wayfinding signage would also help to unify the character of Walnut Street.

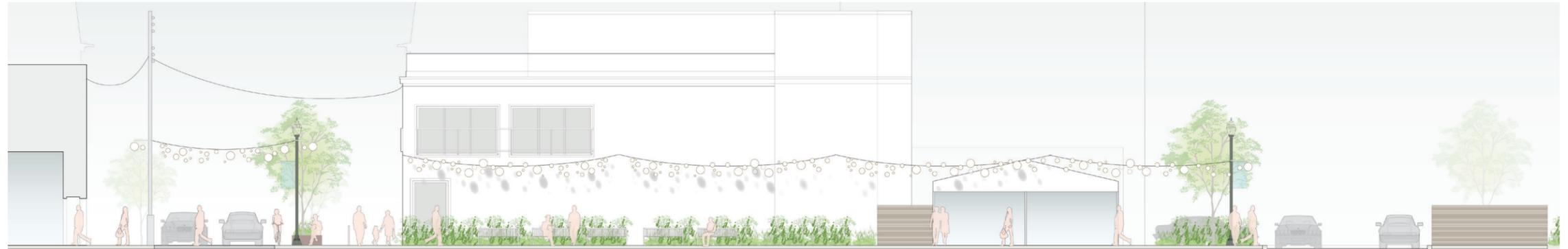
The design team proposed the introduction of kiosks similar to those found in London, which could provide an easily-updated Walnut Street business directory at each intersection, along with directions to the district's parking garage and surface lot. Real-time parking and wayfinding information along Aiken and Negley Avenues may aid visitors approaching by car in locating a parking space.

Priority Initiatives | Culloden Way & Parking Lot Management

Culloden Way, a pedestrian plaza connecting Walnut Street to the Parking Authority's surface parking lot, is the pedestrian gateway to the district for those arriving by car. Currently, the parklet is outfitted with an abundance of pedestrian light poles, seating, donor bricks, space for temporary art exhibits, and low-level plantings. The pedestrian plaza terminates prior to reaching the surface parking lot. Bordering this plaza are trash receptacles and dumpsters for Walnut Street businesses that are serviced from the parking lot. Not only is the pedestrian plaza in need of an upgrade and a paving treatment extension to meet the parking lot, a parking lot management strategy is desperately needed to create a compelling arrival experience.

To enhance Culloden Way, the design team proposed removing most of the surplus pedestrian light fixtures and relocating them along Walnut Street while introducing atmospheric lighting, as described in earlier pages. In the drawings to the right, decorative paving is proposed to extend from Walnut Street all the way to the parking lot driving surface to help unify the space and create a proper gateway to the district. Rearranging the seating within the plaza space will create several conversation areas while also allowing for larger, contiguous planting zones. Planting space could be extended vertically along building walls via elegant planter cables or green screens.

Three parking spaces could be converted into a shared, screened dumpster / trash enclosure on the northern side of the lot. The proposed enclosure would visually enhance the arrival point, and physically declutter the existing passage connecting the parking lot to Walnut Street. Additional plantings may be introduced at the throat of Culloden Way or in the place of existing parking spaces, to capture stormwater and better frame the pedestrian gateway.



Durable street furniture elements.



Perennial plantings and vines on lattices provide color and texture.



Durable, contemporary pavers (donor engravings).



Contemporary fencing as screening elements.



Overhead light installation (temporary or permanent).



Rain garden and tree plantings at parking areas.

Priority Initiatives | Parklet Program (In Development)



Additional greening & seating in parklet expansion.



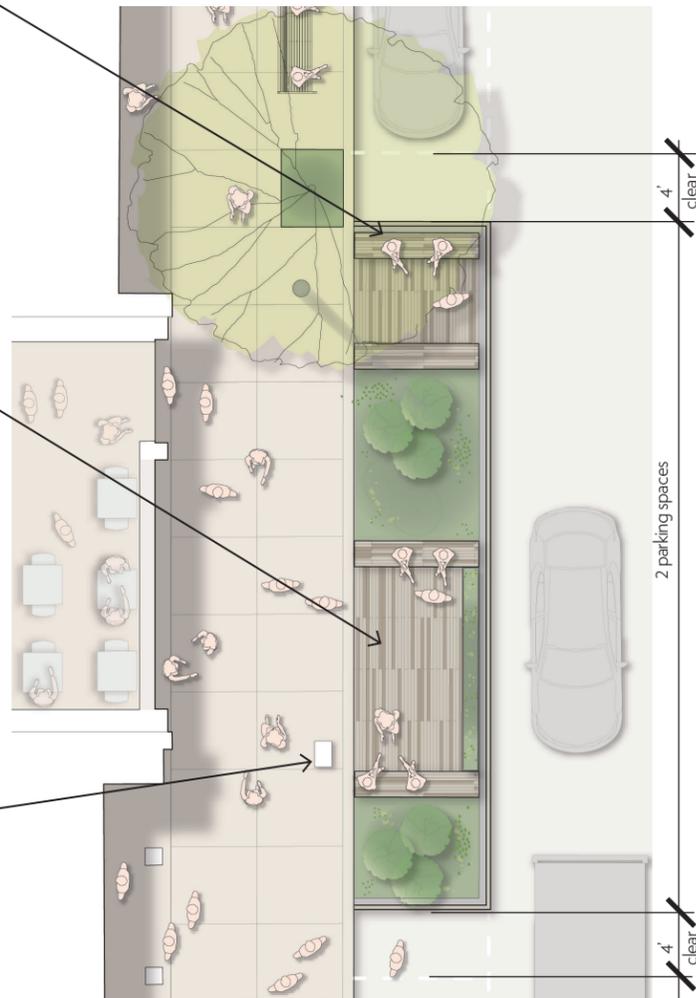
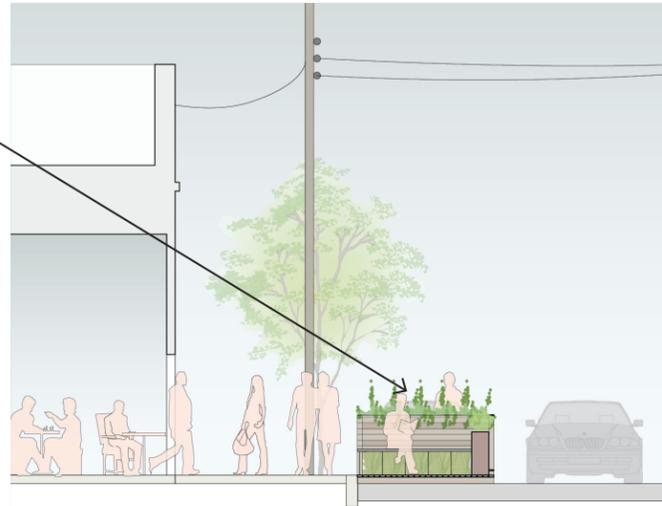
Additional atmospheric lighting elements.



New street furniture elements.



Wayfinding elements.



Many US cities have developed thriving parklet programs.

The City of Pittsburgh is developing a pilot parklet program as part of an overall strategy for creating Complete Streets and new pedestrian open space within the existing public realm. By recapturing two on-street parking spaces, new open space with seating, plantings and public art could be placed to help enhance the pedestrian realm. The parklet model has been developed successfully in many US cities and is seen as a temporary measure that tests the impact of expanded pedestrian realms via the elimination of parking spaces.

In models around the country, parklets are funded and maintained by community organizations, local businesses, or individuals, but are open to the public as extensions to the sidewalk. Parklets foster district interaction by providing opportunities for chance encounters with places to sit and converse. Parklets also support local businesses by creating a feeling of safety with the reduction of vehicular traffic immediately adjacent and encouraging people to stay longer within the district.

While the details of the City of Pittsburgh program are as-of-yet unknown, parklet programs around the US typically require neighborhood support as well as site documentation and construction drawings. Drawings are reviewed by relevant city agencies and designs must be approved prior to installation. Typically, parklets are designed to be easily removed and possibly relocated.

The design team strongly recommends that interested stakeholders consider adopting a parklet along the Walnut Street business district, perhaps adjacent to a cafe or restaurant, to further activate and add to the existing pedestrian realm amenities. Stakeholders were supportive of the Parklet Program concept during Phases 2 and 3 of the planning process.

Material Palettes

Overview

In Phase 2 and 3 of this study, the design team curated groupings of precedent photography that depicted a variety of streetscape components. The precedents presented to the stakeholder group incorporated practical, durable solutions with artful design of everyday site furniture and materials. The categories presented were greening, site furniture, gateways, wayfinding, lighting, and intersection treatments. Each category contained photos highlighting a variety of materials, arrangements and possible locations within the public realm.

By selecting their favorites from a series of precedent images, stakeholders reached an unspoken consensus on the character of the material palettes proposed for Walnut Street. The design team synthesized the visual feedback and further refined material palettes to create a vibrant streetscape and fulfill the project's design objectives.

Best Practices

When furthering design for Walnut Street's Public Realm, the design team recommends adhering to a set of best practices surrounding the sustainability of materials and the quality of craftsmanship within the work. These practices include:

- Incorporate locally sourced or recycled materials into the design. Consider working with DPW to find available materials
- Incorporate native, salt tolerant plant material into plant lists
- Consider the durability and ease of maintenance when selecting materials



Parklets should be constructed with durable materials with either movable street furniture such as seating and planters (shown), or integrated furniture.



Metal tree grates can be customized with texts or a design that ties in with the district's identity. Local artists should be included in the design process.



Portland's stormwater planter pits capture sidewalk and roadway runoff.



Large planting pits with integral benches offer shade covered seating pockets

Greening + Art

Tree Grates:

Tree protection with perforated surface to allow water collection. Possible artist collaboration. ADA-compliant surface. Recycled content preferred.

Manufacturer(s): Urban Accessories
www.urbanaccessories.com

Street Trees:

Refer to City of Pittsburgh's recommended tree species list in appendix. Select trees appropriate to the setting- consider final tree canopy, root zone compaction issues and fall color

Suppliers(s):

TreeVitalize
www.waterlandlife.org/216/treevitalize

Plant Material:

Native, non-invasive plant material is highly recommended. Consider drought tolerant species that also have high salt tolerances in locations adjacent to roadways. In larger contiguous planting beds, consider selecting plants that provide seasonal color change and winter interest.



Areas for outdoor seating can be spatially defined with additional planters.



Different types of seating for varied uses should be considered, and in some cases can be integrated together with complementary materials.



Longer bench seating can also act as a vertical surface that defines an edge.

Site Furniture + Art

Benches and Seating:

Select durable, high-performance, distinctive designs with high recycled content. Preferably locally sourced. Consider collaborations with local artists to design custom furniture

Manufacturer(s): Landscape Forms
www.landscapeforms.com

Forms+Surfaces, www.forms-surfaces.com

Planters:

Select planters that help to frame pedestrian space, constructed of durable materials with a high-

recycled content. The UrbanEdge product line from Landscape Forms contains planters and benches that can be interlocked, utilizing space more effectively.

Suppliers(s): Landscape Forms
www.landscapeforms.com



Gateway + Art

Pedestrian Gateway Signage:

Gateway signage should be designed in conjunction with a local artist and/or fabricator and include a community engagement process. The signage may be 2 or 3 dimensional, freestanding or building mounted.



Wayfinding + Art

Business Directory Kiosks:

Monolithic, free standing with hinged door allowing for updated business directory, with internal lighting

Manufacturer(s): Chameleon by Encompass Sign Systems www.encompasssign.com

Engraved Directional Pavers:

Concrete pavers may be engraved with directional markings or text.

Manufacturer(s): Artline or other approved equal by Unilock, see appendix. www.unilock.com

Material Palettes

Greening + Art

Street trees with decorative tree grates and street trees in large, richly planted beds were selected most frequently by stakeholders. The planting beds depicted typically caught stormwater runoff from the street and sidewalk. The tree pits with tree grates were deeper allowing for a larger root zone and additional stormwater capture as well. Integrating seating below canopy trees was favored as was the use of planters to define pedestrian zones.

Site Furniture + Art

Stakeholders selected images of cafe tables and chairs lining pedestrian walks, colorful metal custom swings and artist designed benches of metal and concrete. Also selected were pairings of products, the standing table integrated into a bench back, transit lean benches alongside planters, the concrete bench with slots for bike storage to the rear.

Gateway + Art

Gateway signage/ markers offer unique opportunities for artist collaborations and streetscape branding. Two scales of gateways, pedestrian and vehicular, will require different design solutions. Community engagement sessions should be integrated to the design process part of the process. Stakeholders selected precedents that incorporated the place name in the form of mosaics, towers, or cross street signage. Precedents selected also drew on local history in order to create a recognizable marker.

Wayfinding + Art

Precedents selected featured kiosk directories mapping the surrounding areas or featuring upcoming events. Favorite wayfinding precedents were incorporated into vertical faces and the ground plane in some cases. Directional tiles, custom stencils and decorative grates set in the ground plane also resonated with the stakeholder group. The development of identity enhancing district banners was also discussed.

Material Palettes

Lighting + Art

Atmospheric lighting precedents were the most selected images. In most cases, the preferred photos featured overhead lighting installations. A few favorite photos projected lighting onto the ground plane or used strategically placed light fixtures to reflect off of surfaces creating additional ambient lighting.

Intersections + Art

Selected images featured painted surfaces at crosswalks and within intersections, as well as more permanent paving material changes whose textural change would alert drivers to pedestrian crossings. A few precedent images showed a tabled intersection where the street surface was raised to meet the sidewalk, extending the pedestrian zone and slowing traffic.



LEFT TOP + BOTTOM: Shared streets, where driving and pedestrian surface are at the same elevation, help to calm traffic and extend the pedestrian realm. Pedestrian-only zones are designate by paving bands and bollards.

ABOVE: During special events, closing off a shared street extends the event spillover space.



Decorative materials in intersection slow traffic.



Raised intersection further delineating with lighting set in the paving.



Painted crosswalk markings create identity and alert drivers to pedestrian crossings.



Painted intersections enliven street crossings while slowing traffic.

Lighting + Art

Street Lights:

City of Pittsburgh standard light fixtures and posts.

Manufacturer(s): City of Pittsburgh standard
www.urbanaccessories.com

GOBO Ambient Lighting:

GOBO projectors may be building mounted and added at strategic locations along the street. GOBOS may be custom designed for Walnut Street or use standard textured/ abstract designs.

Manufacturer(s): ROSCO, www.us.rosco.com

Ambient Lighting and Overhead Light Strings:

Ambient, overhead lighting should be designed in conjunction with an artist and a public process. The overhead lights may be building mounted and should extend to Culloden Way and the entry to the parking lot.

Intersections + Art

Intersection Markings:

Intersection marking should be designed in collaboration with an artist and include a public process. Pilot projects may utilize paint and stencils, while permanent markings may utilize thermoplastic pavement markings.

Decorative Pavers:

Concrete pavers may be incorporated within tabled intersections to calm traffic.

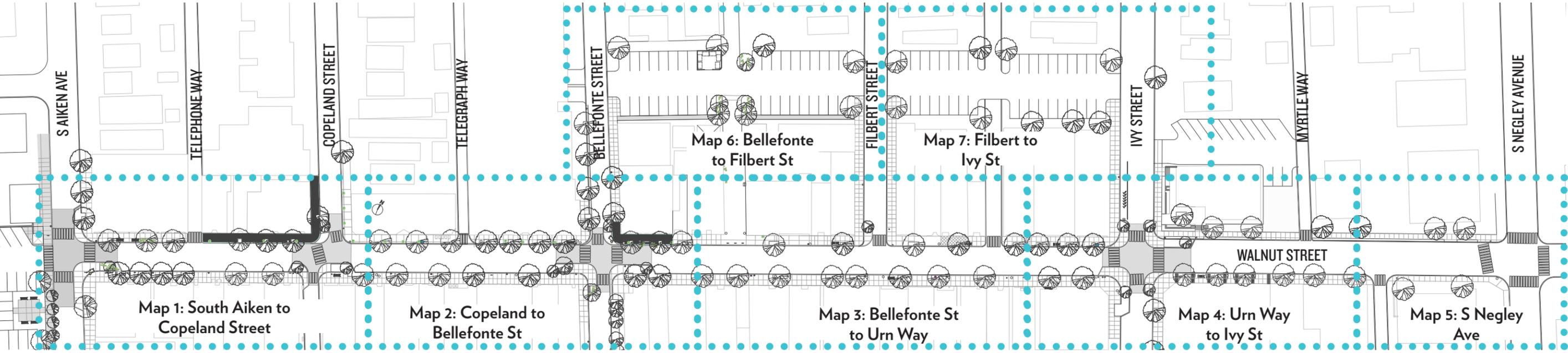
Manufacturer(s): Artline or other approved equal by Unilock, see appendix. www.unilock.com

Embedded Lights:

LED lights embedded into the lane marking at crosswalks help to calm traffic.

Manufacturer(s): TAPCO
www.tapconet.com

Detail Drawings & Material Take-Offs | Overview



Walnut Street Summary Table

ITEM	UNIT	QUANTITY
CONCRETE CURB	LF	1,574
NEW SIDEWALK	SQFT	2,409
PLANTING	SQFT	8,724
INTERSECTION/ INCLUDES CROSSWALK	SQFT	10,495
SPECIALTY PAVING	SQFT	4,382
STREET TREES	EACH	47 NEW, 102 TOTAL
UNDERSTORY TREES	EACH	19 NEW
CONSOLIDATED POLES	EACH	13 NEW
LIGHTING ELEMENTS	EACH	34 NEW, 50 TOTAL
RECEPTACLES	EACH	24 TOTAL
BIKE RACK	EACH	5 NEW, 22 TOTAL
BIKE CORRAL	EACH	1 TOTAL
BIKESHARE STATION	EACH	1 TOTAL
BENCHES/ STONE BLOCKS	EACH	25 NEW, 47 TOTAL
WAYFINDING ELEMENTS	EACH	9 NEW
PUBLIC ART ELEMENTS	EACH	2 NEW
GATEWAY SIGNAGE	EACH	3 NEW
GARBAGE CORRAL	SQFT	365

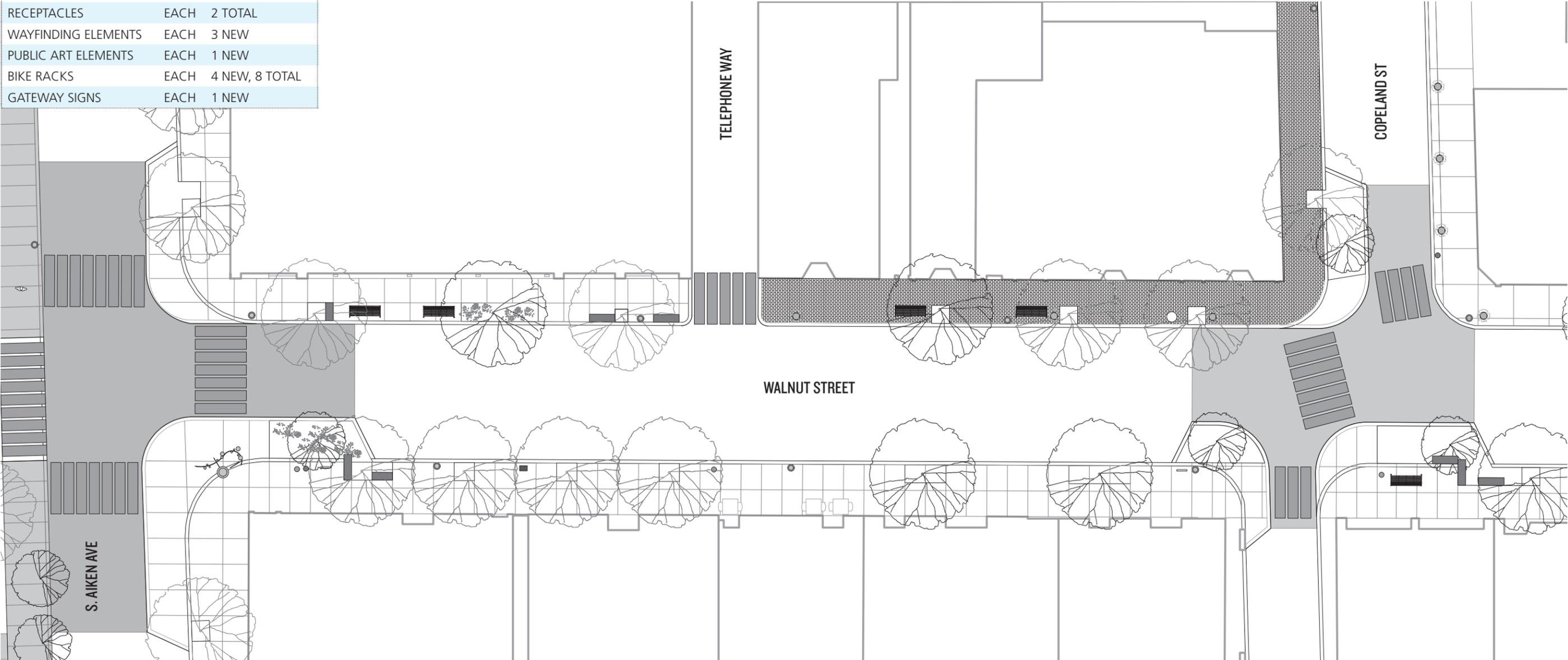
The following pages contain schematic level design drawings, to scale, illustrating the priority elements proposed for Walnut Street. A summary table on each drawing quantifies the amount of material required for the proposed element. The summary tables may be utilized to establish preliminary opinions of probable costs as funding is pursued.

The following is a list of the materials included on the summary tables:

- Concrete curb (lf)
- New sidewalk (sqft)
- Planting (sqft)
- Intersection/ includes crosswalk (sqft)
- Specialty paving (sqft)
- Street trees (each)
- Understory trees (each)
- Lighting elements (each)
- Benches/ stone blocks (each)
- Receptacles (each)
- Wayfinding elements (each)
- Public art elements (each)
- Bike racks (each)

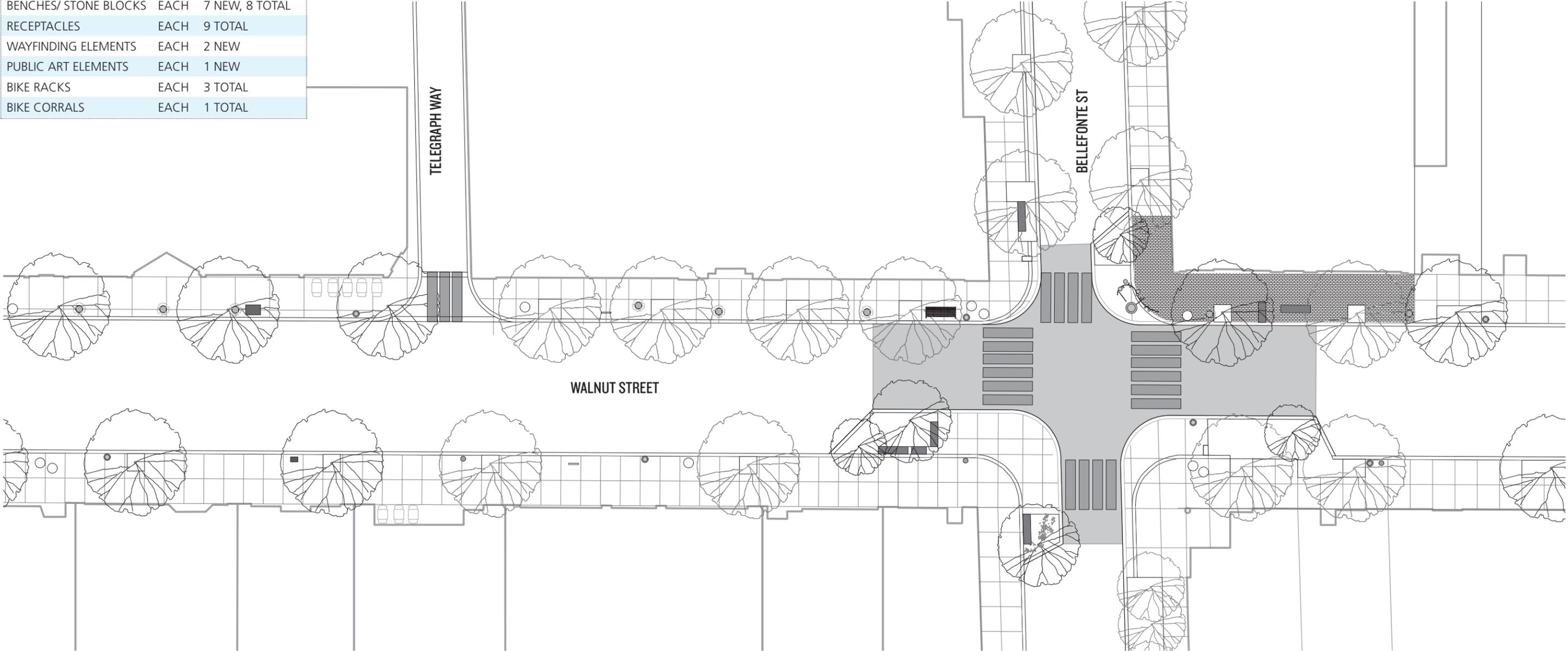
Map 1 | Walnut Street: South Aiken to Copeland Street

ITEM	UNIT	QUANTITY
CONCRETE CURB	LF	305'
NEW SIDEWALK	SQFT	845
PLANTING	SQFT	864
INTERSECTION/ INCLUDES CROSSWALK	SQFT	4,180
CONSOLIDATED POLES	EACH	3 NEW
STREET TREES	EACH	7 NEW, 25 TOTAL
UNDERSTORY TREES	EACH	4 NEW
LIGHTING ELEMENTS	EACH	10 NEW
BENCHES/ STONE BLOCKS	EACH	7 NEW, 12 TOTAL
RECEPTACLES	EACH	2 TOTAL
WAYFINDING ELEMENTS	EACH	3 NEW
PUBLIC ART ELEMENTS	EACH	1 NEW
BIKE RACKS	EACH	4 NEW, 8 TOTAL
GATEWAY SIGNS	EACH	1 NEW



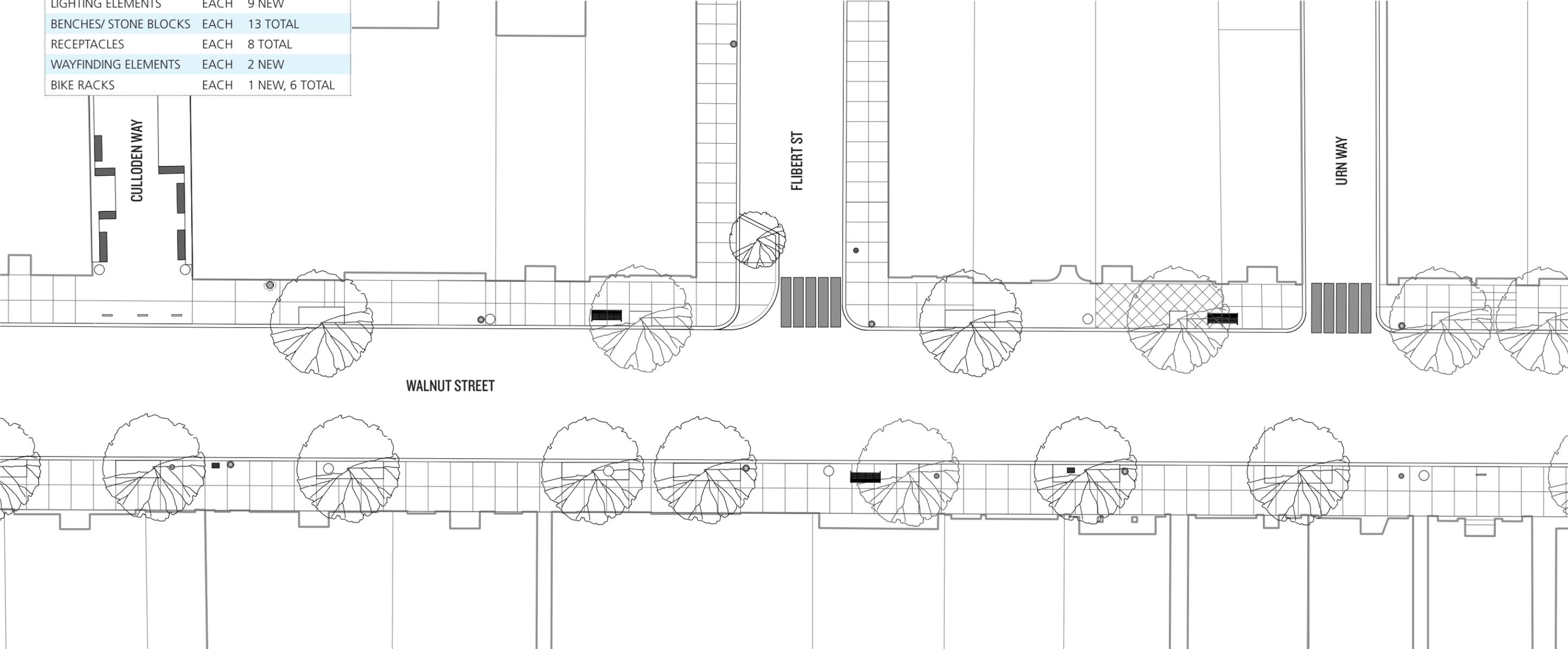
Map 2 | Walnut Street: Copeland to Bellefonte Street

ITEM	UNIT	QUANTITY
CONCRETE CURB	LF	395
NEW SIDEWALK	SQFT	766
PLANTING	SQFT	686
INTERSECTION/ INCLUDES CROSSWALK	SQFT	2,148
CONSOLIDATED POLES	EACH	3 NEW
STREET TREES	EACH	8 NEW, 26 TOTAL
UNDERSTORY TREES	EACH	3 NEW
LIGHTING ELEMENTS	EACH	8 NEW
BENCHES/ STONE BLOCKS	EACH	7 NEW, 8 TOTAL
RECEPTACLES	EACH	9 TOTAL
WAYFINDING ELEMENTS	EACH	2 NEW
PUBLIC ART ELEMENTS	EACH	1 NEW
BIKE RACKS	EACH	3 TOTAL
BIKE CORRALS	EACH	1 TOTAL



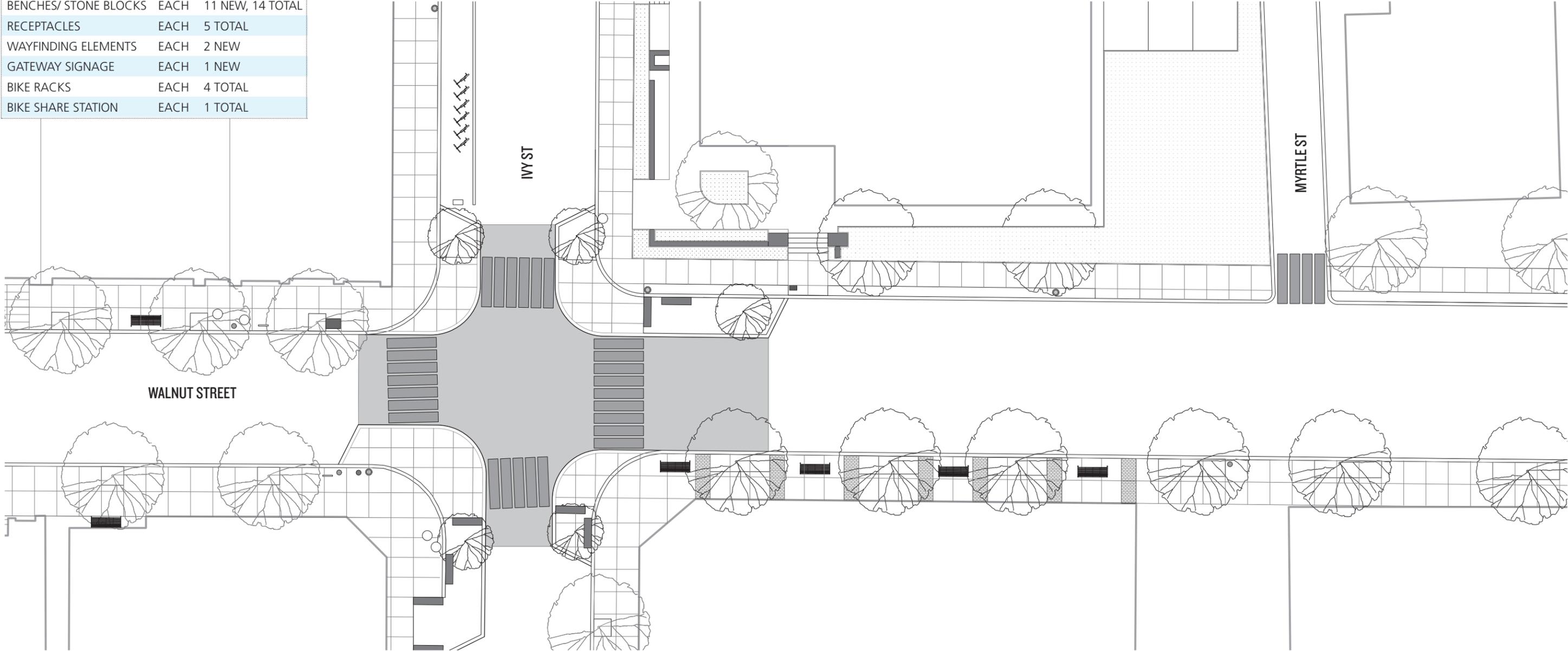
Map 3 | Walnut Street: Bellefonte Street to Urn Way

ITEM	UNIT	QUANTITY
CONCRETE CURB	LF	37
NEW SIDEWALK	SQFT	79
PLANTING	SQFT	653
INTERSECTION/ INCLUDES CROSSWALK	SQFT	270
SPECIALTY PAVING	SQFT	2,708
CONSOLIDATED POLES	EACH	3 NEW
STREET TREES	EACH	8 NEW, 13 TOTAL
UNDERSTORY TREES	EACH	5 NEW
LIGHTING ELEMENTS	EACH	9 NEW
BENCHES/ STONE BLOCKS	EACH	13 TOTAL
RECEPTACLES	EACH	8 TOTAL
WAYFINDING ELEMENTS	EACH	2 NEW
BIKE RACKS	EACH	1 NEW, 6 TOTAL



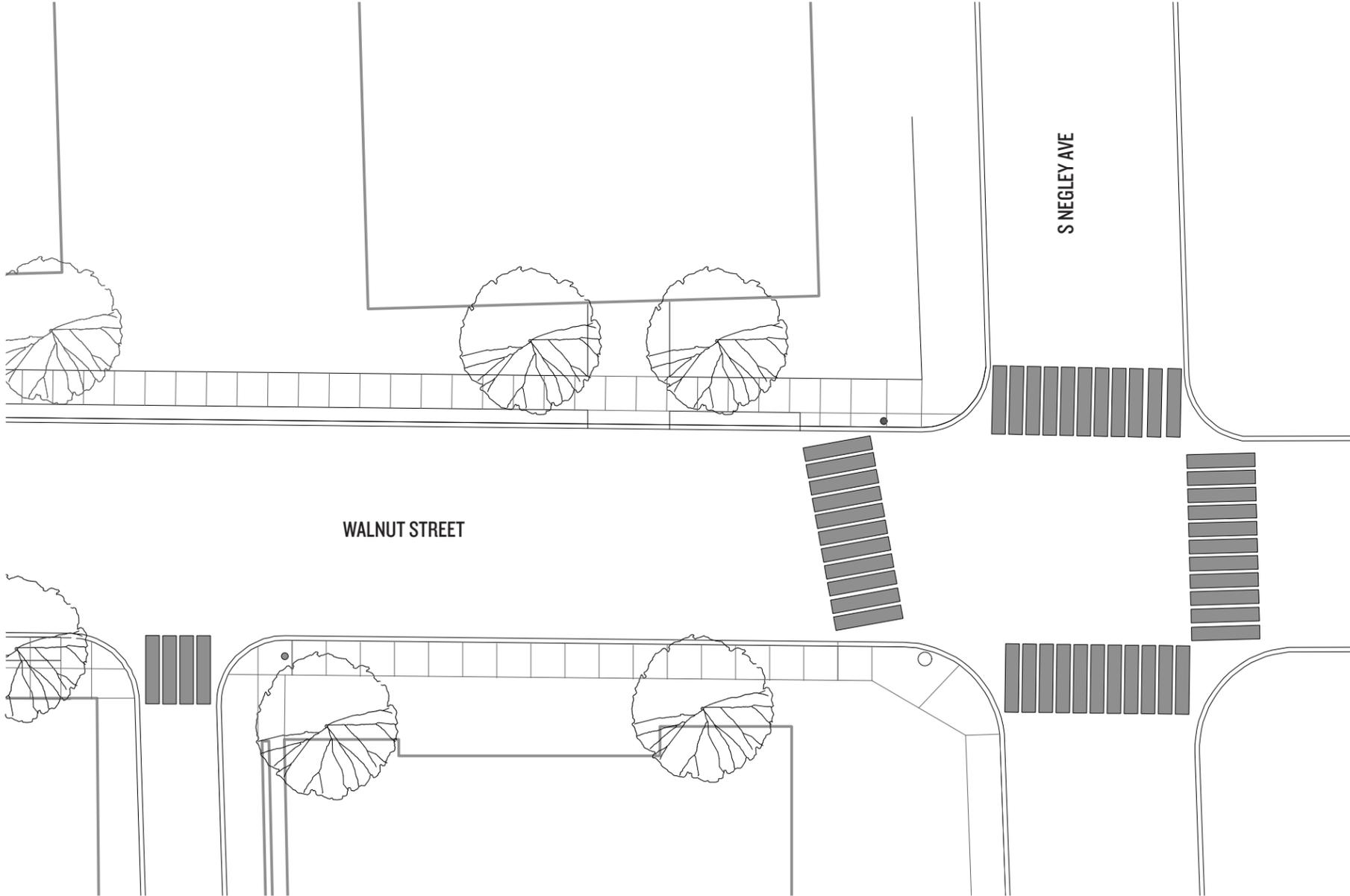
Map 4 | Walnut Street: Urn Way to Ivy Street

ITEM	UNIT	QUANTITY
CONCRETE CURB	LF	260
NEW SIDEWALK	SQFT	719
PLANTING	SQFT	916
INTERSECTION/ INCLUDES CROSSWALK	SQFT	2, 562
CONSOLIDATED POLES	EACH	3 NEW
STREET TREES	EACH	8 NEW, 19 TOTAL
UNDERSTORY TREES	EACH	4 NEW
LIGHTING ELEMENTS	EACH	5 NEW
BENCHES/ STONE BLOCKS	EACH	11 NEW, 14 TOTAL
RECEPTACLES	EACH	5 TOTAL
WAYFINDING ELEMENTS	EACH	2 NEW
GATEWAY SIGNAGE	EACH	1 NEW
BIKE RACKS	EACH	4 TOTAL
BIKE SHARE STATION	EACH	1 TOTAL



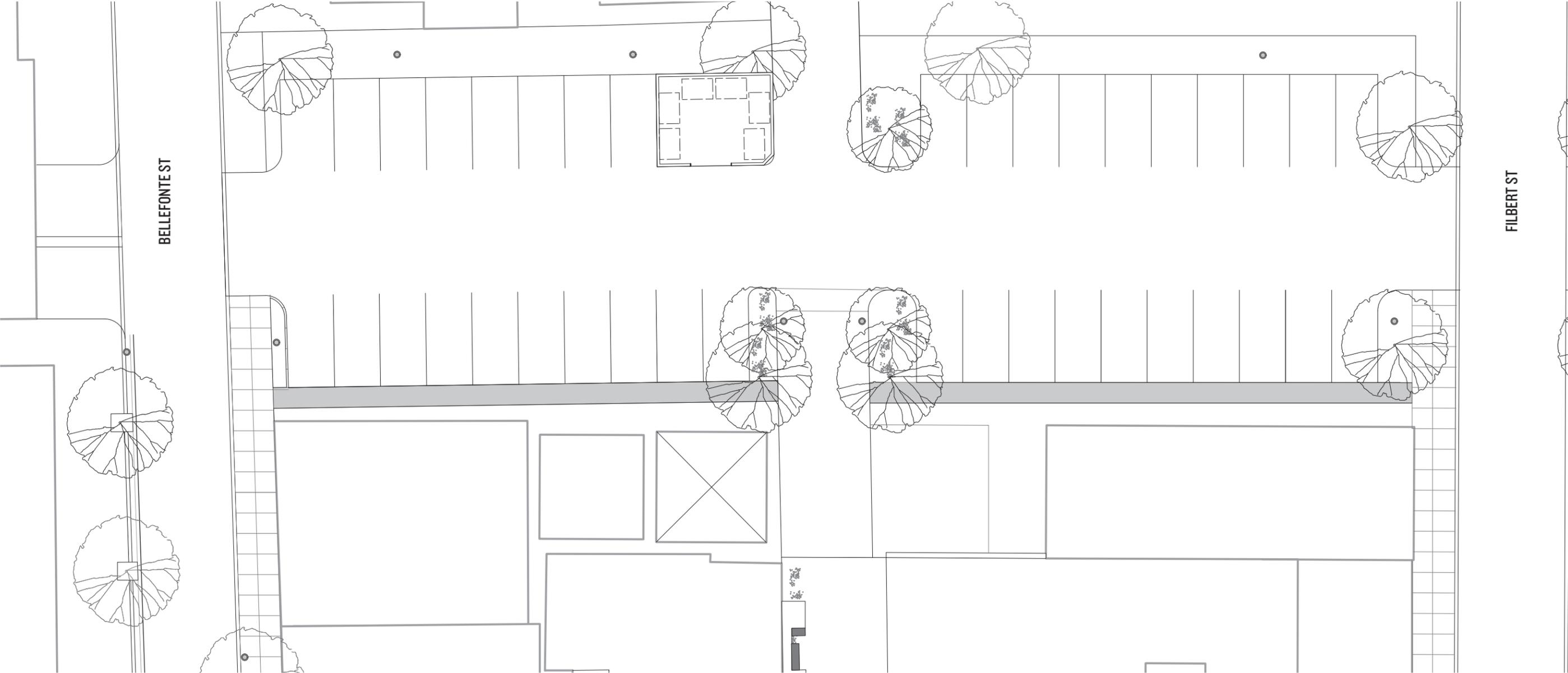
Map 5 | Walnut Street: S. Negley Ave

ITEM	UNIT	QUANTITY
INTERSECTION/ INCLUDES CROSSWALK	SQFT	1,335
CONSOLIDATED POLES	EACH	1 NEW
STREET TREES	EACH	4 NEW
LIGHTING ELEMENTS	EACH	1 NEW
GATEWAY SIGNAGE	EACH	1 NEW



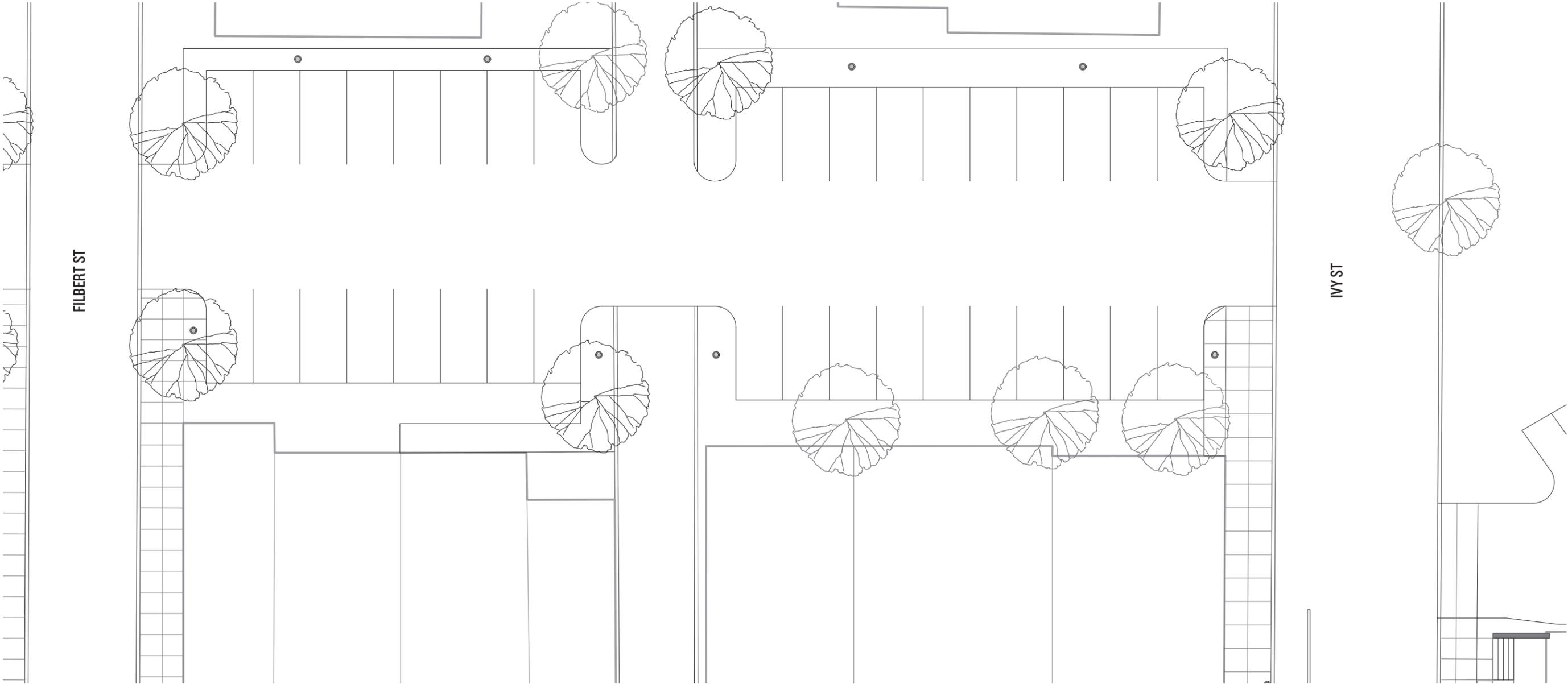
Map 6 | Parking Field: Bellefonte to Filbert Street

ITEM	UNIT	QUANTITY
PLANTING	SQFT	2,566
SPECIALTY PAVING	SQFT	1,192
GARBAGE CORRAL	SQFT	365
STREET TREES	EACH	7 NEW, 9 TOTAL
UNDERSTORY TREES	EACH	3 NEW
LIGHTING ELEMENTS	EACH	1 NEW, 8 TOTAL
BIKE RACKS	EACH	1 TOTAL



Map 7 | Parking Field: Filbert to Ivy Street

ITEM	UNIT	QUANTITY
PLANTING	SQFT	3,039
SPECIALTY PAVING	SQFT	482
STREET TREES	EACH	5 NEW, 10 TOTAL
LIGHTING ELEMENTS	EACH	8 TOTAL



Appendix

The following pages include technical details for pricing, preferred material palettes and possible sourcing information and meeting minute summaries from the Stakeholder engagement sessions.

Recommended Tree Species For Pittsburgh's Streets

There are two main categories; Shade Trees where no overhead utilities conflict with tree growth, and Utility Trees where overhead utilities call for shorter trees. The Utility Tree section has 2 parts to account for the occasional situation where wires are 25' or higher above ground.

Shade Trees

Trees in the Shade Tree category should be planted where no overhead utilities exist. Shade trees are the most desirable size of tree for planting, and should be used at all times in the absence of overhead wires.

Acer rubrum 'Franksred'- Red Sunset Red Maple (do not use within 5' of sidewalks; aggressive root system)

Acer x freemanni 'Celzam'- Celebration Freeman Maple (do not use within 5' of sidewalks; aggressive root system)

Aesculus x carnea 'Briotii'- Ruby Red Horsechestnut (less mid-summer scorch than hippocastanum)

Cercidiphyllum japonicum Tree Form-Katsura Tree (requires more water during establishment years than most other trees)

Corylus colurna (tree form)- Turkish Hazel or Turkish Filbert

Eucommia ulmoides - Hardy Rubber Tree (not pretty but can be useful)

Ginkgo biloba (any male variety) - Ginkgo (male example is Princeton Sentry)

Gleditsia triacanthos (any thornless, seedless, variety) - Honeylocust

Gymnocladus dioicus (male variety only) - Kentucky Coffeetree

Liriodendron tulipifera - Tulip Tree (open lawn or large parking island)

Metasequoia glytostroboides – Dawn Redwood (requires larger than usual pit if used as a street tree, or use in open planting areas)

Nyssa sylvatica - Blackgum

Ostrya virginiana – American Hophornbeam

Platanus x acerifolia 'Bloodgood' - Bloodgood London Planetree

Quercus bicolor - Swamp White Oak

Quercus macrocarpa – Bur Oak

Quercus rubra - Northern Red Oak

Quercus palustris - Pin Oak

Sophora japonica - Scholartree (flower issues make this an open space tree not suited to sidewalk use)

Taxodium distichum – Baldcypress

Tilia tomentosa - Silver Linden

Ulmus parvifolia – Lacebark Elm/Chinese Elm

Ulmus Hybrids – disease resistant trees like 'Homestead', 'Pioneer', 'Accolade', 'Frontier', 'Liberty' and 'Urban'.

Zelkova serrata – Zelkova ('Green Vase' is not recommended in commercial areas where it may block signage)

Utility-Compatible Trees Group A (under-wire use)

Group A applies to most plantings under utility lines. This is necessary because most wires are less than 25' above ground. Where possible, offset trees so they are not directly under the wires.

Acer ginnala – Amur Maple 15'-20'

Acer tataricum – Tatarian maple 15'-25'

Crataegus crus-galli var. 'Inermis' – Thornless cockspur hawthorn 15'-20'

Crataegus laevigata 'Superba' – Crimson Cloud hawthorn (tree form) 15'-20'

Magnolia stellata – Star Magnolia (tree form) 10'-20'

Malus cultivars – crabapple (disease resistance emphasized) all under 22' Adams, Amsalzam, Centurion, Donald Wyman, Harvest Gold, Prairifire, Professor Sprenger, Red Jewel, Robinson, Sentinel, Sugar Tyme, Strawberry Parfait (always specify tree form for crabapple selection)

Malus floribunda – Japanese flowering crabapple under 25'

Malus sieboldii x zumi 'Calocarpa' – Zumi crabapple under 25'

Malus 'Spring Snow' tree form – Spring Snow Crabapple 15-20' (fruit makes Malus undesirable in commercial areas)

Group B (use only under wires 25' and higher)

Group B applies only to utility plantings where the bottom wire is over 25' above ground. Where possible, offset trees so they are not directly under the wires.

Acer buergerianum – Trident Maple (tree form) 20-30'

Acer campestre – Hedge maple (tree form) 25'-40'

Acer campestre 'Evelyn' – Queen Elizabeth hedge maple 30'-40'

Acer griseum – Paperbark Maple 25'-35'

Amelanchier laevis 'Cumulus' or 'Majestic' – Apple Serviceberry 20'-30'

Amelanchier x grandiflora – Serviceberry (many cultivars) 20'-30'

Carpinus betulus "Fastigiata" – European Hornbeam (tree form) 30'-40'

Carpinus caroliniana – American Hornbeam (useful in full shade) 20-35'

Cercis canadensis – Eastern Redbud 25'-30'

Cornus kousa – Kousa Dogwood (esp. Rutgers hybrids) 20'-30'

Koelreuteria paniculata - Goldenrain Tree 25'-40'

Magnolia 'Galaxy' – Galaxy Magnolia (tree form) 20'-30'

Phellodendron amurense – Amur Corktree 30'-40'

Prunus sargentii – 'Columnar' – Sargent cherry 30'

Prunus serrulata 'Amanogawa', 'Kwanzan' – Japanese flowering cherry 25'-35'

Prunus virginiana 'Shubert' – Shubert Chokecherry 20'-30'

Sorbus species – Mountain Ash 15'-35' (in limited quantities)

Syringa reticulata 'Summer Snow', 'Ivory Silk' – Japanese Tree lilac 20'-25'

Trees planted on city property shall be:

- 2" caliper (minimum) measured 6" above the root ball;
- set rootball level slightly above soil grade (1-2"), finished soil grade being 2" below top of sidewalk (see Tree Planting Detail).
- mulched with 2" of shredded wood mulch for weed control;
- stake trees just below the first branch with 1"-3" wide polypropylene straps (2 per tree on opposite sides of tree, connecting from tree to stake horizontally). DO NOT use rope or wire through a hose. ArborTie is an

acceptable product.

- Remove all staking materials after one (1) year, or as otherwise directed by the City Forester.
- Planting beds shall measure a minimum of 3' X 10' in order to assure space for the root zone. Where box style planting beds currently exist, the space shall be enlarged to the above dimensions. The rectilinear shape may be substituted with Forestry approval, but a minimum of 30 sq. ft. of root zone must still be observed. Trees require ample root space for optimum growth and longevity, so planting beds larger than the minimum are welcome and desirable where there is still sufficient space for pedestrian traffic.

Prepared by Forestry Division
City of Pittsburgh
412-665-3625

Salt Tolerant Plant List

The following list contains plant species that are highly tolerant of salt. Select species with final growth size in mind. Some species below need a larger root zone to thrive. Consider this list when planting adjacent to roadways.

Shade trees

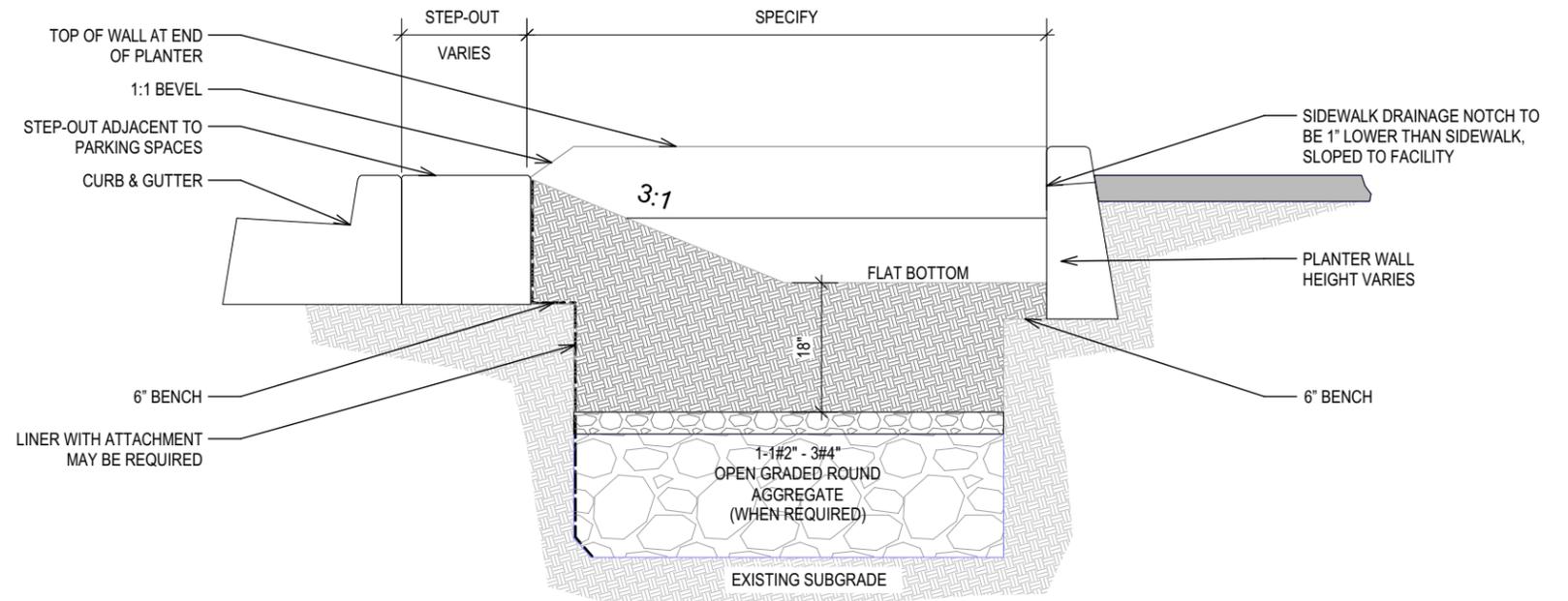
- Aesculus hippocastanum* - Horsechestnut
 - Amelanchier canadensis* - Serviceberry
 - Betula lenta* - Cherry birch
 - Crataegus crusgalli* var. *inermis* - Cockspur hawthorn
 - Ginkgo biloba* - Maidenhair
 - Gleditsia triacanthos* var. *inermis* - Honeylocust
 - Gymnocladus dioica* - Kentucky coffeetree
 - Hamamelis* spp. - Witchhazel
 - Juniperus virginiana* - Eastern redcedar
 - Magnolia* spp. - Magnolia
 - Nyssa sylvatica* - Black gum
 - Quercus alba* - White oak
 - Quercus rubra* - Red oak
 - Sophora japonica* - Japanese pagodatree
 - Taxodium distichum* - Baldcypress
- ### Shrubs/groundcovers
- Arctostaphylos uva-ursi* - Bearberry
 - Aronia* spp. - Chokeberry
 - Caragana arborescens* - Siberian pea shrub
 - Cornus racemosa* - Gray dogwood
 - Cotoneaster divaricatus* - Spreading cotoneaster
 - Cotoneaster horizontalis* - Rock cotoneaster
 - Cytisus scoparius* - Scotch broom
 - Hibiscus syriacus* - Rose-of-Sharon

- Hydrangea* spp. - Hydrangea
- Hypericum* spp. - St. Johnswort
- Philadelphus* spp. - Mockorange
- Potentilla fruticosa* - Potentilla
- Ribes alpinum* - Alpine currant
- Rosa rugosa* - Saltspray rose
- Rhus* spp. - Sumac
- Syringa* spp. - Lilacs
- Vaccinium* spp. - Blueberry/cranberry

Perennials

- Armeria maritima* - Sea thrift
- Calamagrostis acutiflora* - 'Karl Foerster' reed grass
- Dianthus gratianopolitanus* - Cheddar pink
- Festuca glauca* - 'Elijah Blue' Blue Fescue Grass
- Helleborus orientalis* - Lenten rose
- Hemerocallis* spp. - Daylily
- Iberis sempervirens* - Candytuft
- Limonium latifolium* - Sea lavender
- Liriope spicata* - Lilyturf
- Pennisetum alopecuroides* - Fountain grass
- Sedum spectabile* - Sedum 'Autumn Joy'
- Schizachyrium scoparium* - Little bluestem
- Waldsteinia fragarioides* - Barren strawberry
- Yucca filamentosa* - Adam's-needle Yucca

Stormwater Planter Detail



DESIGNER INFORMATION

1. SHOW LINER AND PERF-PIPE IN THE SECTION VIEW IF THEY ARE REQUIRED.
2. MAXIMIZE 9" OF SURFACE STORAGE.
3. MINIMUM FACILITY WIDTH IS 30" FROM BACK OF CURB TO FACE OF PLANTER WALL.
4. TOP OF CURB AND TOP OF SIDEWALK AT APPROXIMATELY SAME ELEVATION, UNLESS STORMWATER FACILITY RETROFIT.

CONSTRUCTION NOTE

IN FACILITIES THAT ARE UNLINED, FRACTURE AND LOOSEN SOIL TO A DEPTH OF 12" BELOW GRADE BEFORE INSTALLING BLENDED SOIL OR AGGREGATE. DO NOT TILL.

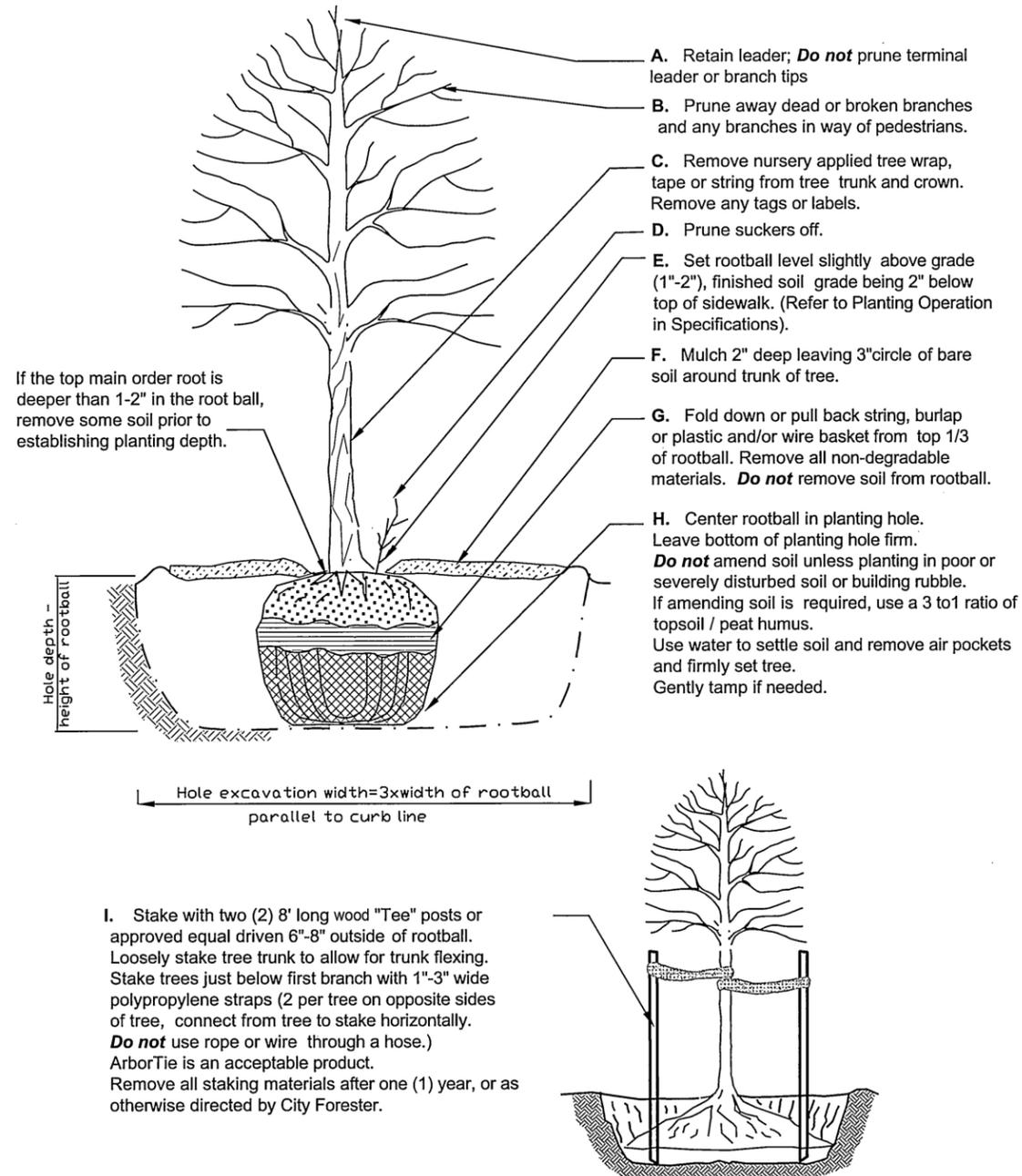
PLANTER WALL DESIGNER INFORMATION

1. SPECIAL DESIGN CONSIDERATIONS OR STRUCTURAL REVIEW MAY BE REQUIRED FOR LONGER PLANTER WALL SPANS. STEEL REINFORCEMENT OR ADDITIONAL CONCRETE CHECK DAMS MAY BE NEEDED FOR STABILITY
2. SPECIFY ONE OF THE ABOVE PLANTER WALL OPTIONS BASED ON SITE CONDITIONS.
3. MAINTAIN 1:6 BATTER FOR WALLS AND 4" MINIMUM FROM TOP OF WALL TO TOP OF SIDEWALK.

Detail adapted from the City of Portland's Green Streets Manual. For additional details, please visit: www.portlandoregon.gov/bes/64040

Appendix

City of Pittsburgh Tree Planting Detail

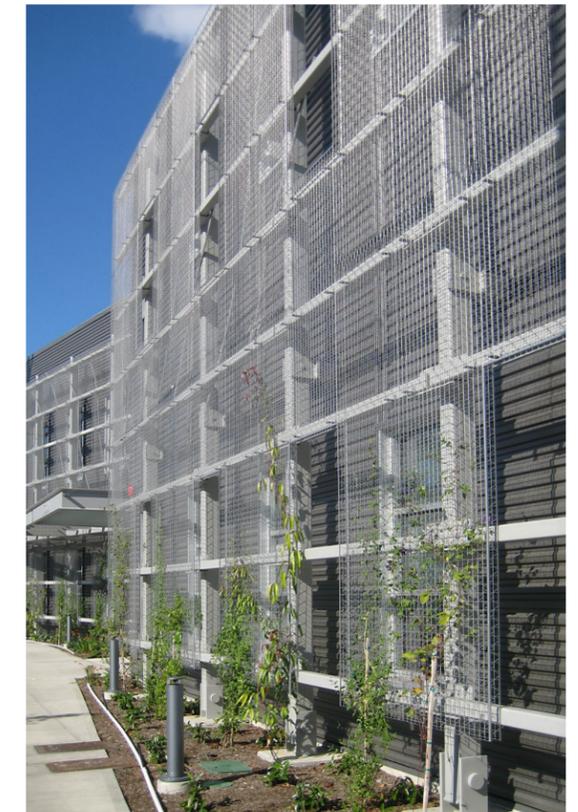


Wall Mounted Green Screens/ Planting Lattice

In tight urban streetscapes where planting space is limited, wall-mounted trellis panels can transform walls into soft-textured, vine covered, seasonally changing surfaces. The panel or cable elements are typically modular, easy to install and cost-effective. Below and to the right are some examples of wall mounted systems seen in cities around the US along with manufacturer contact information.

greenscreen®
(p) 800.450.3494 (e) sales@greenscreen.com
www.greenscreen.com

Jakob Inc
casa2665 NW 1st Ave, Boca Raton, FL 33431
(p) 866.215.1421 (e) info@jakob-usa.com
www.jakob-usa.com/green-walls/



Site Furniture: City of Pittsburgh Right-of-Way Procedures

Within Walnut Street's right-of-way, the City of Pittsburgh's policy document revised June 1, 2017, provides details and specifications regarding the installation of paving, typical site furniture, ADA ramps and more.

If non City standard site furniture is selected, a waiver and/ or adoption of the site elements may be required.

City Of Pittsburgh

Department of Public Works



Right-of-Way Procedures Policy

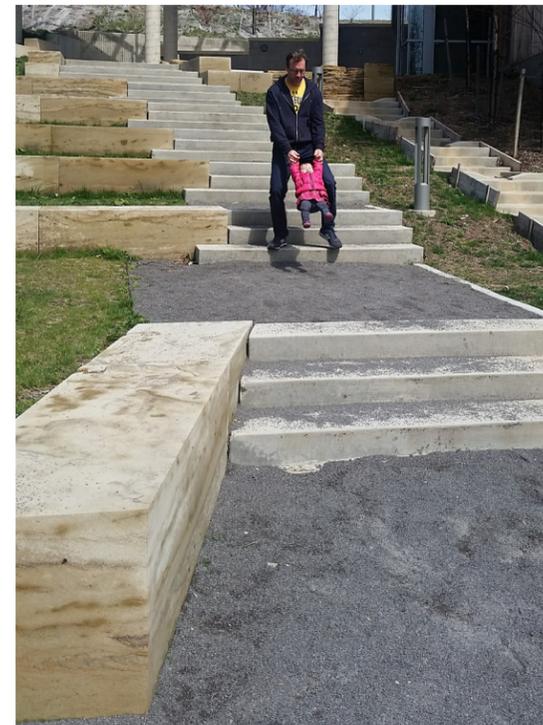
Revised: June 1, 2017

Site Furniture: Stone Plinths

Introducing stone into a streetscape palette provides a durable, tactile material that enlivens the public realm. Stone plinths sourced from local quarries may provide non-traditional seating adjacent to planting areas.

Designers should also consider reusing stockpiled bridge stones as seating plinths, depending on the availability of larger pieces.

By using locally-sourced material, the carbon footprint of a streetscape project's implementation is greatly reduced.



Smooth-sawn sandstone plinths define Frick Environmental Center's Amphitheater

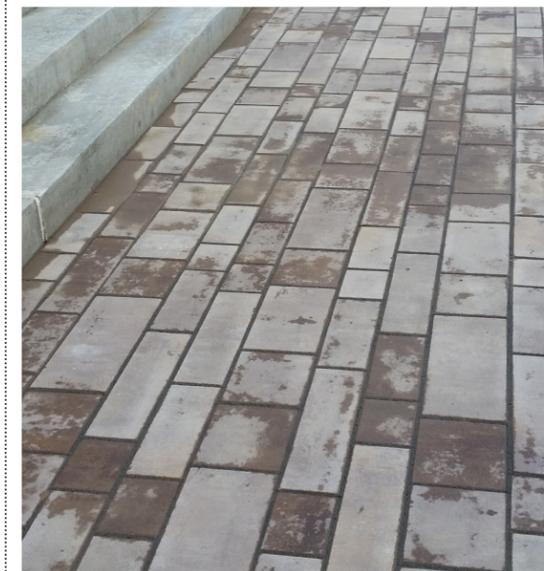


Sandstone plinths edge East Liberty Transit Center's planting beds and provide additional seating

Site Furniture: Decorative Pavers

Decorative pavers introduced into portions of a streetscape help to define pedestrian spaces, break up large fields of paving by providing texture and color changes, slow traffic when placed in intersections, and provide fundraising opportunities by allowing engraved units.

Designers should select pavers that are durable, fade-proof and sturdy enough to withstand emergency vehicle traffic within the public realm.



Unilock's Artline pavers installed at Snowdon Square Park in Brownsville PA. Pavers can support emergency vehicle traffic and are fade-proof.



Pavers on a shared street in New Brighton

ADA Compliance

The Americans with Disabilities Act (ADA) became law in 1990. The ADA is a civil rights law that prohibits discrimination against individuals with disabilities in all areas of public life, including jobs, schools, transportation, and all public and private places that are open to the general public. The purpose of the law is to make sure that people with disabilities have the same rights and opportunities as everyone else. The ADA gives civil rights protections to individuals with disabilities similar to those provided to individuals on the basis of race, color, sex, national origin, age, and religion. It guarantees equal opportunity for individuals with disabilities in public accommodations, employment, transportation, state and local government services, and telecommunications.

In the public realm, the ADA requires buildings and streets to become accessible to people with disabilities, whether with automatic doors, grab bars or ramps, among other accommodations. The ADA Coordinator for the City of Pittsburgh assists architects, developers, business owners, landlords and others in designing or redesigning their facilities so that they are usable by all persons, including those with disabilities.

For additional information, contact:

Richard Meritzer
ADA Coordinator City of Pittsburgh
200 Ross Street - 4th Floor
Pittsburgh, PA 15219

(e) richard.meritzer@pittsburghpa.gov

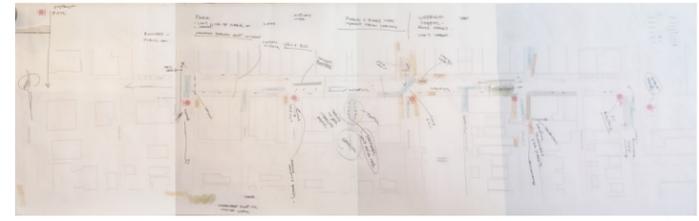
Stakeholder Meeting 1

Project: **Walnut Street Public Realm Study**
 Regarding: Stakeholder Meeting 1
 Date: February 21, 2017 9:00 am
 Location: William Penn Tavern

1. Introductions and presentation by SfSP discussing project overview, process, time line, existing conditions along Walnut Ave, and explanation of break-out activities

2. BREAK OUT ACTIVITY, report out:

- PEDESTRIAN EXPERIENCE:
 - Make Walnut St one-way to allow for an extended pedestrian realm
 - Irregular, cracked or broken sidewalk pavement needs to be fixed. Brick paving should be replaced. Brick paving is popping, needs maintenance and is treacherous.
 - Accessibility along sidewalk a concern. Street furniture and sandwich boards clutter walk and make it impassible in some locations
 - Garbage cans always full, especially on weekends when street most active
 - Create bumpouts to allow for safer pedestrian crossings and for seating areas at each corner along Walnut
 - Move bench on Filbert Street. Cluttered street furniture makes navigating the walk difficult
 - Introduce or better organize pedestrian seating elements along Copeland which is currently congested. Introduce additional seating along side streets (typical)
 - Add trellises with vines and integrated solar panels at the pedestrian parklet. At entry to parklet, replace trash cans with planters, move trash to interior of parklet.
 - Sidewalks: explore whether they could be pavers that can be lifted in place for repairs, avoiding need for excavation/jackhammering (Washington, D.C.)
 - Can Walnut convert to a pedestrian only like Lincoln in South Beach?
 - Cap off Aiken and Ivy, with only crossings from Bellefonte, Copeland etc.



Existing Conditions Board 1 from first Stakeholder meeting.

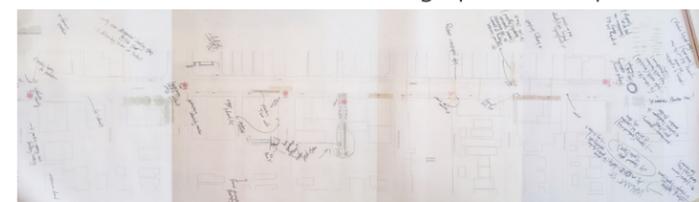
- GREENING:
 - Dead trees along Walnut should be removed
 - Add large shade trees and greening in front on PNC bank as a potential parklet
 - Consider hiring a landscape contractor to maintain planters seasonally
 - If Walnut becomes one-way, designate a portion of the extra space to trees and low level greening, consider stormwater planters.
- IDENTITY & LIGHTING:
 - Make Walnut St one-way to allow for an extended pedestrian realm
 - Create a vehicular identity icon at Negley and Walnut intersection to help link to Ellsworth business district along Negley
 - Create a pedestrian identity icon at Walnut and Ivy as the beginning of the business district
 - Create a rhythm of lighting, pedestrian poles interwoven with overhead lighting strands along Walnut. Continue lighting along side streets with businesses.
 - Create iconic signage pole with businesses listed on each block and side streets to remove need for sandwich boards
 - Add pedestrian scale light poles (like on Ellsworth) and hanging baskets to light poles
 - Create a color palette for new facades along Walnut
 - Create gateway identity at Aiken and Walnut
 - Add an art piece in the landscape island in the Shadyside Village parking lot
 - Add an identity element to the facade on the corner of Walnut and Aiken
 - Make parklet focal point above street with lights or outdoor sculpture

Regarding sidewalk signs, create rules and regulations as to size , placement etc- Don't remove sidewalk signs as it will reduce traffic to second floor businesses

Wayfinding signage at Walnut/Ivy (to Ellsworth business district), and at strategic locations on 5th, S. Aiken, several blocks away pointing to Walnut St. (15 min. walk to Walnut Street)

Incorporate outdoor public Wi-Fi into the project? It would be great to include this early on so we have some hope of making this a reality. (To facilitate: Contact Evan H. Stein Founder and Managing Partner Green Light Wireless evan@greenwifi.com (412) 228-3000 x301)

- MOBILITY:
 - Parking garage not inviting looking, needs a face lift and wayfinding directing drivers to location. Wayfinding should also indicate location of parking lot.
 - Some opposition expressed to spending money on parking garage updating
 - Need flashing lights for pedestrian crossing at Negley and Walnut to slow down traffic. Traffic calming needed at Bellefonte and Walnut and Ivy and Walnut to allow for safer pedestrian crossings
 - More designated loading zones along side streets needed, including a loading zone on Aiken with the parking shifted down the street.
 - Encourage deliveries before 10 am or vendors are ticketed
 - Consider a shared dumpster strategy or a screened dumpster area in the parking lot to reconcile pedestrian traffic and trash pickup
 - Entrances to parking lot from alleys are gateways and should have a more palatable approach
 - Need mirrors at end of Telegraph and Telephone



Existing Conditions Board 2 from first Stakeholder meeting.

Way to show traffic. Other traffic calming elements should be introduced to increase safety at Telegraph Way.

Can the bicycle parking at Bellefonte and Walnut move to another location?

Maintain parking count on Walnut. Need all spaces currently listed.

Increase the number of handicapped parking spaces to equal the number of bike parking in the area.

Along with one-way, explore whether angled parking could be option

- EVENTS:
 - Need space for a farmer's market
 - Movie nights were planned for the parking lot in Shadyside Village and/or Winchester Thurston field but were rained out in 2016
 - During art festival , tents set up along Walnut St and street closed to vehicular traffic. Stage set up at Walnut and Bellefonte for Jam on Walnut.

3. NEXT STEPS: Meeting minutes to be distributed. Create design options to be presented at 2nd stakeholder meeting in April. Meet with Public Works to review design options.

Minutes prepared by SfSP

Stakeholder Meeting 2

Project: **Walnut St Public Realm Study**
 Regarding: Stakeholder Meeting 2
 Date: June 7, 2017 9:00 am
 Location: William Penn Tavern

1. Pre-meeting: Stakeholders were asked to review streetscape precedent images and put stickers next to examples they reacted positively to or felt were appropriate along Walnut Street. The images (right) with the most votes will influence the materials palette selected for the corridor.
2. Introductions and presentation by SfSP discussing project overview, precedent images, and potential elements.
3. Following the presentation, the stakeholders provided the following comments:

ONE-WAY ROUTING OPTION:

One member stated that this option was a way to attract more foot traffic on Walnut with more pedestrian space and plantings, also mentioning that studies show increased foot traffic enhances business districts. The direction for the one-way would need to be better determined by studies of traffic on Aiken versus Negley.

One member expressed concerns about the impact of delivery trucks on a one-way, one-lane street. It would totally block traffic if this loading behavior continues in the one-way scenario. Where could loading go in this new scenario? Richard Rattner mentioned that the truck loading program would go into effect on July 1st, forcing deliveries to be made before 10 am utilizing loading zones.

One member expressed concern about the one-way scenario, particularly as a high-risk, expensive option. What other less expensive, high priority projects could be focused on instead? This member felt there is ample sidewalk space now. Is there a way to green it? Others agreed with this approach of focusing on smaller, less expensive projects.

One member expressed that with a one-way scenario, the side streets would be highly

impacted. Currently, there are issues with vehicular back up on these side streets, particularly if a service or trash truck is blocking it.

One member suggested trying out a one-way scenario for one day (or longer) as a test.

One member supported adding more space for pedestrians for safety and attractiveness. Thus, she supported a one-way scenario which would accomplish this.

LIGHTING:

One member stated that changing out the light fixtures for more pedestrian scaled lights is good, and should be done immediately.

General support for the three part lighting strategy: pedestrian scaled street lights, overhead ambient lighting and consolidated electrical poles.

PARKLETS:

General support for using the parklet program.

CROSSWALKS:

One member stated that colored crosswalks, like the ones on Ellsworth, are colorful, interesting, easy, and should be done immediately.

OVERHEAD WIRES:

Most members supported a less invasive approach to burying all overhead wires, and supported a semi-consolidation of wires overhead and replacing current electrical poles.

One member had concerns about interfering with underground water pipes, which could burst. Another member suggested replacing terra-cotta pipes while replacing lights since pipes are due for replacement.

PARKING:

There is a lack of signage and wayfinding for drivers to the existing parking structure. Could there be an electronic sign on Walnut, noting the number of empty spots in the parking structure?

LIGHTING:

The overhead lights which were in Culloden Way were removed because of the fire department's concern with interference with rescue ladders and access. This would need to be addressed if

overhead lights are to be applied to Walnut.

One member suggested that if overhead lights were not feasible, the lights could then be placed in trees.

One member liked the number of lights in Squirrel Hill.

WAYFINDING / SIGNAGE :

General support for kiosks and wayfinding signage, primarily as a way to reduce clutter and sandwich boards currently on sidewalks.

Many supported the idea of district-wide wayfinding and signage, and suggested kiosks with maps of businesses which could be electronic or with slots to change out names if needed.

4. NEXT STEPS: Meeting minutes to be distributed. Create "menu" of design elements to be presented at final stakeholder meeting.

Minutes prepared by SfSP



Gateway + Art Board w/ stickers on favorable selections.



Intersection + Art Board w/ stickers on favorable selections.



Street Furniture + Art Board w/ stickers on favorable selections.



Greening + Art Board w/ stickers on favorable selections.



Wayfinding + Art Board w/ stickers on favorable selections.

Stakeholder Meeting 3

Project: **Walnut Street Public Realm Study**
 Regarding: Stakeholder Meeting 3
 Date: August 30, 2017 9:00 am
 Location: William Penn Tavern

- Next steps and funding sources presented by Councilman Gilman's office followed by an overview of the previous meetings by SfSP reviewing project scenarios presented and most selected potential elements for the streetscape.
- SfSP presented a Priority Elements board featuring Lighting, Intersection Treatment & Bumpouts, Street Trees, Wayfinding, and Culloden Way & Parking Management as the most important interventions for Walnut St. Following the presentation, the stakeholders were asked to vote on these priorities or to add to the list already compiled. The stakeholders provided the following comments and questions:

Q: Will wayfinding signage include parking garage space availability, with real-time updates?
A: Yes, it will be included in the final report.

Q: Could there be a combined light pole, green hanging plants, and signage introduced to save money?
A: Hanging baskets are different from the type of on-street greening we are proposing; however, baskets can be added to City standard poles.

Q: Would banners be good solution for wayfinding, since they are cheap and can be easily reprinted and updated?
A: Banners with district maps would be anchored too high up to read.

Q: If we have to rip up the street, what is the effect on the priority projects?
A: Bumpouts would be the most intrusive. We would not propose to plant a tree where a bumpout would be planned. Lighting is not that intrusive as the city only digs a thin trench along the curb. The most expensive is to redo the overhead lights, and we have estimates coming from Duquesne Light Company.

Q: Will there be a cost estimate for each

scenario? **A:** We will provide accurate take-offs of the amount of materials proposed which will allow you to estimate a ballpark number now. However, it will assist in the future when funding is pursued to more accurately predict costs with updated unit prices.

Q: Will there be a process for replacing/consolidating the power lines?
A: That would be organized with Duquesne Light & DPW.

Q: Will sidewalk tripping hazards be surveyed?
A: Technically, the property owners are responsible for fixing the sidewalks. The scope of this process does not involve a whole-street sidewalk replacement, but we can note areas of sidewalks where it is especially bad.

Q: Is there a way to redo the streetscape to make it more consistent?
A: There is, but it would be extremely disruptive to the street, with portions of it potentially closed for periods of time.

3. VOTES TABULATED:

- Lighting & Power Line Consolidation - 17 VOTES (w/ 3 additional votes for atmospheric light installations across the street)
- Intersection Treatment & Bumpouts - 14 VOTES (w/ 5 additional votes for creative crosswalk markings at intersections)
- Street Trees - 7 VOTES (w/ 1 additional vote for stormwater plantings)
- Wayfinding - 7 VOTES
- Culloden Way & Parking Lot Management - 1 VOTE for contemporary fencing as screening elements around a dumpster enclosure

- NEXT STEPS:** Meeting minutes to be distributed. Final report created. Report shall highlight priorities established in Meeting #3.

Minutes prepared by SfSP



Priority Elements Board.