



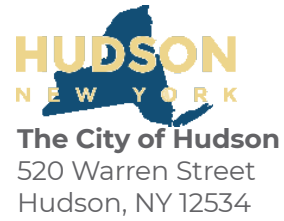
BRIDGE DISTRICT CONNECTIVITY PLAN

Hudson, NY

April 2021



Prepared for:



Downtown Revitalization Initiative (DRI) Steering Committee

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01 Executive Summary



EXECUTIVE SUMMARY

ABOUT THE PROJECT

The Hudson Connects BRIDGE District Connectivity Plan is a streetscape planning and design initiative focused on addressing pedestrian safety, enhancing multi-modal transportation, and improving connectivity within the District. This plan will ensure that bicyclists, pedestrians, transit riders, drivers, and other roadway users have safe and comfortable access to existing and future amenities including mixed-use development, the Hudson Amtrak Station, Henry Hudson Riverfront Park, Promenade Hill Park and businesses along Warren Street. The District, as defined in the City's DRI Grant, is bounded by the Hudson River to the west, 2nd Street to the east, the South Bay wetlands to the south and Dock Street to the north (refer to map on pg. 7). This effort will identify the cost/benefit of various street design improvements, and prioritize long- and short-term capital improvements that best maximize the resources of the City's DRI budget.

ABOUT THE DOWNTOWN REVITALIZATION INITIATIVE

In 2017, the City of Hudson was selected by the New York State's Capital Regional Economic Development Council for one of ten Downtown Revitalization Initiative (DRI) Round Two awards. A ten million dollar state grant was awarded to fund a variety of projects within the self defined BRIDGE District, an acronym for "build, renew, invent, develop, grow, empower." Approximately four million dollars of the total grant is allocated to improving streets and circulation as identified in this Connectivity Plan.

RELATIONSHIP TO OTHER GRANTS AND STUDIES

ADA Evaluation

In 2020, the City of Hudson hired an independent contractor to conduct an ADA Evaluation. This evaluation identified physical barriers to accessibility that exist within the city. A portion of the routes within the evaluation lie within the BRIDGE District including Water Street, Ferry Street, Front Street, and Warren Street. The findings from this evaluation informed the improvements and priorities outlined in this document.

TEP Grant

The TEP Grant is a separate project which funds bike lanes and roadway striping along Dock Street and portions of Front Street. These improvements are being coordinated

with the BRIDGE District Connectivity Plan to ensure cohesiveness and to maximize connectivity within, to, and from the District.

Promenade Hill Park

The DRI Grant also allocated funding to aesthetic and accessibility improvements to Promenade Hill Park. The Promenade Hill Park Improvements and The Hudson Connectivity Plan about one another at the intersection of Front Street and Warren Street. For this reason, the projects were coordinated during this planning phase to ensure a seamless interface between the two. The Promenade Hill Park Improvements will precede the Connectivity Plan Improvement with construction anticipated to commence in the Spring of 2021.

Ferry Street Bridge Replacement

The Ferry Street Bridge Replacement Project will replace and upgrade the bridge over the rail line and improve vehicular and pedestrian connections to the waterfront. This project interfaces with the Connectivity Plan at the intersection of Front Street and Ferry Street and has been considered during the development of this plan. At the time of this study, this project was in the construction phase but on hold pending various approvals.

PROJECT PROCESS & TIMELINE

Data Collection - July - October 2020

Reviewed previous studies, concepts, and planning efforts. Conducted a High-Performance Streets (HPS) analysis.

Community Outreach - July - October 2020

Held community workshops, information sessions, walking tours, stakeholder meetings, and demonstration projects.

Council Presentation #1 - December 2020

Presented the draft Connectivity Plan to the Hudson Common Council for feedback.

Phasing & Implementation - December 2020

Developed a phasing and implementation plan.

Council Presentation #2 - January 2020

Presented the phasing and implementation plan to Hudson Common Council for feedback.

Construction - Fall 2021

Anticipated construction for first phase of improvements.



BRIDGE DISTRICT BOUNDARY



DEMONSTRATION PROJECT FROM THE OUTREACH PROCESS

DATA COLLECTION & OUTREACH

DATA COLLECTION

The project team began by reviewing previous studies and planning efforts including DRI presentations and materials, the ADA Evaluation, and TEP Grant documents. A High-Performance Streets (HPS) analysis was then conducted for all streets within the District. The HPS analysis is a process that breaks down each street in the project area and analyzes how their sidewalks, roadways, parking areas, crossings and intersections perform in five categories: **Functionality & Safety, Place Branding, Health & the Environment, Economic Vitality and Design Quality.** The HPS analysis focuses on the experience of traversing a given street and examines things that are not often measured by traditional data collection techniques. The HPS analysis asks an important question: “Is the street serving all of its purposes beyond just moving cars?” The document serves as the basis for design recommendations and is informed by comments from Hudson residents as well as field observations from the project team.

COMMUNITY ENGAGEMENT

The recommendations put forth in this document are the result of a robust community and stakeholder engagement effort to better understand the community’s needs and concerns. In cooperation with the City of Hudson, the Hudson Connects project team crafted a series of community events to maximize community participation as follows:

1. Walking Tour and Public Workshop

The community engagement process was kicked-off with a public walking tour of the streets within the District. The participatory exercise provided an opportunity for attendees to evaluate the safety, accessibility, and pedestrian experience. Participants stopped at each street to discuss their impressions. Surveys prompted questions about driver behavior, ADA accessibility, plant and tree coverage, streetscape furnishings and presence of bike facilities. Finally, each participant rated the street based on how well it performed in each category.

Following the walking tour, the public was invited to join

the project team at Hudson Hall for a workshop. Care was taken to follow COVID-19 safety measures including contact tracing, social distancing, face coverings and capacity limits. Hudson Hall offered enough capacity to accommodate all members of the public that registered to attend. The workshop provided an introduction to project team and used a series of mapping exercises to solicit feedback on the City’s streets. An online version of all presentation materials and exercises was also available for those who could not attend the in-person event.

2. Downtown Revitalization Initiative (DRI)

Design Open House

The second public meeting was a “DRI Design Open House” conducted jointly with the Promenade Hill Park project, one of the other DRI initiatives discussed earlier. Hosted outdoors at the entrance to Promenade Hill Park, this joint Open House format allowed the public to interface with both project teams in an open air, casual environment.

Conceptual solutions were presented and discussed for 6 distinct areas. Members of the public provided feedback

on these solutions and then identified which solutions they would like to see implemented as a temporary “Demonstration Project.” This event helped identify priority projects, highlight missing connections and shed light on what currently enables or prevents safe mobility around the neighborhood.

3. Stakeholder Meetings

The Hudson Connects project team held a series of stakeholder meetings with local residents, business owners, leaders, and city employees throughout Hudson. These meetings, held through a combination of in-person conversations and telephone discussions, provided the project team insight from those with a unique or specific perspective on the neighborhood streets. These groups range from Providence Hall residents to various city departments such as police, emergency services or the Department of Public Works.



WALKING TOUR



DRI OPEN HOUSE



STAKEHOLDER MEETING

DATA COLLECTION & OUTREACH

4. Demonstration Project

The Community Engagement process culminated with the installation of two “Demonstration Projects”. During this exciting and interactive multi-day event, an estimated 75+ residents and community members joined the City and the project team to install temporary improvements using paint, traffic tape and temporary bollards.

The Demonstration Project locations were determined based on selections made by the public at the DRI Design Open House. The first site was located at the intersection of Front Street and Warren Street. This installation was intended to last 1-2 weeks and included painted curb extensions and other traffic calming measures. The second site was located along State Street near the intersection of Second Avenue. This site was designed by local artist Kirby Crone and was intended to last several months.

The temporary improvements were then monitored for their effectiveness using visual observation and public surveys. Signs were posted at each location inviting the public to complete an online survey with more than 200 responses received.



DEMONSTRATION PROJECT

KEY FINDINGS

The data collection and public outreach process resulted in a series of key findings as summarized below:

1 Discontinuous Sidewalks

A consistent and reliable sidewalk network is fundamental to providing a walkable city. Currently, there are substantial gaps in the sidewalk network ranging from missing sidewalks to sidewalks in severe disrepair.

2 Inaccessible Intersections

Intersections have to provide a safe and accessible transition from the sidewalk to the street via curb ramps and crosswalks. None of the intersections within the BRIDGE District provide curb ramps that are compliant with the Americans with Disabilities Act (ADA). This condition presents physical barrier for people with limited physical mobility.

3 High Design Speeds

Slow vehicular speeds greatly improve pedestrian safety and comfort. Most streets are designed in a way that promote high speeds. Influencing factors include wide travel lanes, lack of visual cues and other mechanisms that help cars slow down.

4 Uncomfortable Cycling Conditions

Hudson is a compact city making alternate modes of transportation such as bicycling a great way to access city amenities. However, there are few facilities to support these transportation choices.

5 Disconnected Waterfront

The Hudson River is one of the city's greatest assets. However, the river is physically and visually disconnected from the city. This is caused primarily by topographic challenges and development patterns along Front Street but is exacerbated by the lack of physical and visual connections on the streets and intersections along the riverfront.



GOALS

The 'Key Findings' form the foundation for a series of Goals that this plan strives to achieve. These Goals are listed as follows:

GOAL #1: MAKE STREETS SAFE & ACCESSIBLE FOR ALL

The streets should be developed as a multi-modal network that provides a safe and enjoyable experience for all users regardless of age or ability.

GOAL #2: RECONNECT THE WATERFRONT

The streets should enhance and reinforce visual and physical connections to the waterfront.

GOAL #3: CELEBRATE THE HISTORIC ARCHITECTURE OF HUDSON

The form, furniture and materiality of the streetscape should respect and reinforce the historic architecture and urban fabric of the city.

* The recommendations that follow have been developed for this particular DISTRICT, however, these guidelines are intended to establish standards that can be replicated throughout the entire city.



1. MAKE STREETS SAFE & ACCESSIBLE FOR ALL



2. RECONNECT THE WATERFRONT



3. CELEBRATE THE HISTORIC ARCHITECTURE

CONNECTIVITY FRAMEWORK DIAGRAM

The Key Findings and Goals led to the development of the Connectivity Framework Diagram. This diagram illustrates how these key findings and goals apply to the DISTRICT, creating the framework for addressing pedestrian safety, enhancing multi-modal transportation and improving connectivity within the District, between neighborhoods and the City's downtown.

The residential streets are an important conduit for connections to places within the DISTRICT and citywide. These routes should be uninterrupted and provide multiple options for residents and visitors to access all the various destinations and amenities. In order to accomplish this, all intersections and alley crossings should be made ADA compliant. This street network also directly connects to the Warren Street commercial corridor, which serves residents and visitors as a destination, spanning the length of the city and terminating within the DISTRICT at Promenade Hill Park. This intersection is one of many important connections to the waterfront along Front Street. The Front Street Corridor, along with the intersections at Broad Street, Ferry Street, Warren Street and Dock Street, should be designed to reinforce the connection and adjacency of the Hudson River. A promenade is envisioned along this corridor to provide a multi-modal path along the riverside that connects Henry Hudson Riverfront Park, the train station, Promenade Hill Park and up to the community garden. This serves in conjunction with a series of robust bicycle facilities that provide connections within the DISTRICT, citywide and regionally via the Empire State Trail that runs along Dock Street, Front Street and Allen Street. A multi-use shared path completes this network along State Street, providing a separated facility from 2nd Street, to Front Street down to Allen Street.





02 Make Streets Safe & Accessible for All

MAKE STREETS SAFE & ACCESSIBLE FOR ALL

How streets are designed, furnished, and maintained depend largely on their overall intended use. Is the street a major thoroughfare that connects trucks, buses, and cars between cities? Or is it a main shopping street in a small downtown? Ideally, a successful street reinforces its intended uses with the appropriate infrastructure.

Each of Hudson's streets falls somewhere on the people-first, mobility-first, and car-first scale. People-first streets prioritize characteristics such as public space, outdoor seating, and pedestrian amenities in order to maximize the comfort and overall experience for people walking or biking. Mobility-first streets prioritize the movement of people, cars, and public transportation with established infrastructure that supports each transportation choice. Lastly, car-first streets prioritize the movement of goods, cars, and buses with infrastructure that allows for infrequent stopping and starting.

The project team began by assessing the overall intended use for Hudson's street network. This analysis in addition to community input served as the basis for recommendations put forth for streets within the BRIDGE District. The streets with the largest transformations are those with physical characteristics that did not support their intended use.



MAKE STREETS SAFE & ACCESSIBLE FOR ALL

STREET NETWORK

Streets are essential in moving people, bikes, and cars throughout the city. They should feature ADA accessible sidewalks and roadways that are designed according to a given street's typology and overall function. The following typologies were identified during the HPS Analysis which helped better identify the appropriate types of improvements for each street. Specific improvements to streets are outlined in Chapter 2 & 3.

- Promenade** - Front Street imagined as a waterfront promenade that runs along the river the entire length of the district, connecting recreational spaces, residences, and some retail.
- Main Street** - Destination commercial corridor lined with shops, restaurants, offices, city services, and some residential.
- Residential Street** - Streets lined with residential dwellings on both sides.
- Residential Connector** - Both 2nd and 1st street are the north/south connections in the district that are lined with residential dwellings on both sides and connect residents to Warren Street.
- Neighborhood Drive** - Street lined with residential dwellings, parks, and open spaces.
- Access Drive** - Street that accesses a variety of uses from industrial to recreational.
- Alley/Shared Street** - The spaces typically lined with the back of residential dwellings, garages, and parking spaces which primarily serve the residents along them.



MAKE STREETS SAFE & ACCESSIBLE FOR ALL

KEY ELEMENTS OF A STREET

Successful streets are comprised of a number of building blocks that work together to create a safe, comfortable, and enjoyable atmosphere for pedestrians, cyclists, and motorists of all ages. These include, but are not limited to, intersections, bicycle facilities, sidewalks, street trees, furnishings, wayfinding, and lighting. Intersections are activity nodes where people gather; they provide a transition from the sidewalk to the streets; and most importantly, they are the location where pedestrians and vehicles cross each others paths. Please refer to pg. 38 - pg. 47 for guidance on intersection design. Safe and enjoyable bicycle access is key to the development of an inclusive multi-modal connectivity plan. Please refer to pg. 48 - pg. 53 for guidance on bicycle facilities. The following elements should also be considered when making street improvements within the BRIDGE District:



SIDEWALKS

Sidewalks provide pedestrians with access to parks, residences, offices, restaurants, retail establishments, and city services. Sidewalks should be provided where missing and should be replaced where in disrepair. They must adhere to ADA guidelines. ADA compliant sidewalks should be provided on both sides of the street. They should maintain a minimum width of 4'-6' and a cross slope that does not exceed 2%. Sidewalk surfaces should be stable and slip resistant and free of uneven surfaces or trip hazards. When replacing sidewalks, the width should either become wider or replaced in-kind.



STREET TREES

Beyond aesthetic value, street trees provide cleaner air, protection from the elements, cooler temperatures, improved emotional health, and a more enjoyable walking experience. The city should strive to achieve a continuous street tree canopy on all streets where feasible. Trees should be spaced 25'-40' on-center and should be comprised of multiple tree species to avoid a mono-culture planting. Where possible, tree pits should be 4' x 8' to protect the health and longevity of the tree. Trees should be limbed up to a minimum of 7' to maintain sight lines and not interfere with pedestrians and vehicles.



FURNISHINGS

Furnishings are important pedestrian amenities that help expand the utility of sidewalk areas. For more guidance on furniture please see pg. 66.



WAYFINDING SIGNS

Wayfinding signs help pedestrians, cyclists, and drivers navigate the city and are confirmation of their current location. Wayfinding signs increase walkability, strengthen economic vitality and help develop a sense of place in a city. Their fonts, colors, form and size should support the character of Hudson and have a clear hierarchy. Signs should follow standards set by Manual on Uniform Traffic Control Devices (MUTCD) and should be focused at destinations, parking areas and along primary circulation routes such as Warren Street, the waterfront, and the train station. Any existing and future regulatory signage should be grouped on existing poles where possible in order to avoid visual clutter.



LIGHTING

Pedestrian-scale allows drivers to see pedestrians as they cross the street and also provides pedestrians with an enhanced sense of safety after dark. Furthermore, lighting can provide ambiance and serve as a placemaking element in the evening.

MAKE STREETS SAFE & ACCESSIBLE FOR ALL

PROMENADE FRONT STREET

The Front Street Promenade redistributes excess roadway space to expand facilities for pedestrians and cyclists. The current configuration of Front St between Allen St & State St typically has 10' sidewalks, 8' parking lanes, and 14' travel lanes. However, the lanes within the roadway are not delineated with on-street striping, resulting in high speeds and disorganized traffic.

Recommendation

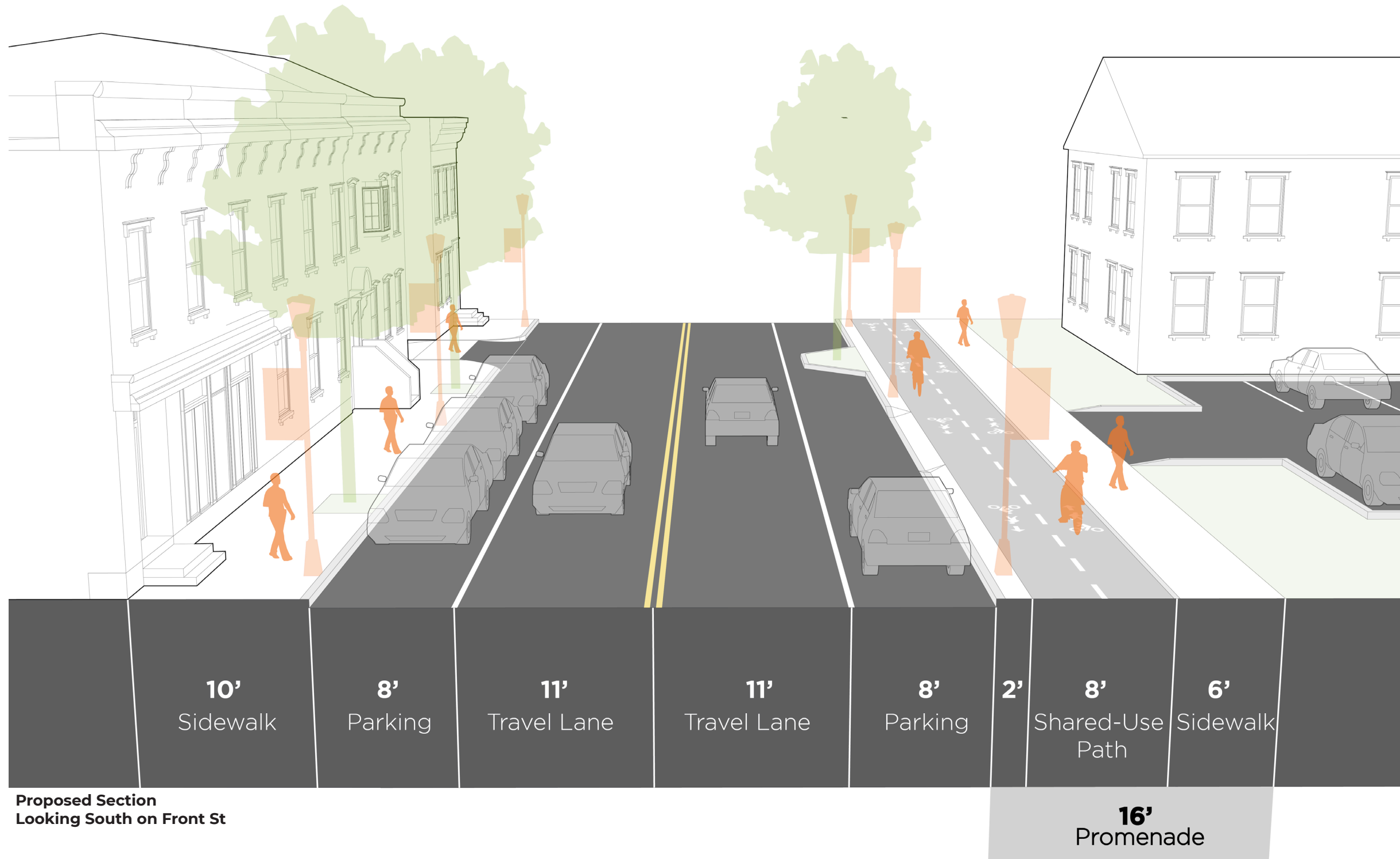
The proposed configuration narrows the travel lanes from 14' to 11' and narrows the western sidewalk from 10' to 6'. Double yellow lines delineate opposing travel lanes and a 6" white stripe denotes on-street parking.

Reconfiguring the street in this manner creates the room needed to construct a continuous 16' promenade from Allen St to State St that is raised and separated from traffic. Meanwhile, the roadway will have standard lane widths that calm and organize traffic along Front Street.

If street trees are desired, curb extensions should be installed along the promenade side of the street.



EXISTING SECTION LOOKING SOUTH ON FRONT ST.



Proposed Section Looking South on Front St

**MAKE STREETS SAFE &
ACCESSIBLE FOR ALL**



**PROMENADE
FRONT STREET**

A tabled intersection connects Warren Street to Promenade Hill Park. This crossing will calm traffic, increase visibility for pedestrians and make access to the park and sidewalk level universally accessible. Furthermore, a shared-use path will provide a raised walkway for pedestrian and cyclists that is separated from live traffic. In tandem with a three-way stop and on-road striping to delineate parking areas from travel lanes, these improvements will create a safer environment for residents of all ages.

- A** Raised Intersection
- B** Curb Extension
- C** Bollard
- D** Pavement Marking
- E** Scored Concrete
- F** Granite Setts
- G** Bike Rack
- H** Bench
- I** Trash Receptacle
- J** Granite Pavers

**MAKE STREETS SAFE &
ACCESSIBLE FOR ALL**



**MAIN STREET
WARREN STREET**

Warren Street is largely in good condition. Improvements to this retail corridor should be largely focused on the commercial intersection enhancements outlined on pg. 47.

Recommendations

- Add new street trees and tree pits where feasible
- Repair sidewalk areas that present accessibility issues
- Introduce pedestrian amenities and furnishings such as benches, trash receptacles, and bike racks along the length of the street
- Add lane striping in roadway to delineate parking areas



**RESIDENTIAL STREET
ALLEN STREET, UNION STREET,
AND COLUMBIA STREET**

For the most part, sidewalk conditions along Columbia and Union seem to be in fair condition; however, Allen Street has substantial gaps in the sidewalk network.

Recommendations

- Add new street trees and tree pits where feasible
- In instances where there is not adequate width within the sidewalk area, street trees can be accommodated by 4'x12' curb extensions
- Repair sidewalk areas that are heaving and present accessibility issues
- Maintain a minimum 6' sidewalk width with sawcut lines spaced at 4' intervals



**RESIDENTIAL CONNECTOR
1ST STREET, 2ND STREET**

1st Street between Allen and Warren Street and 2nd Street between Warren and State have substantial gaps in the sidewalk network. These gaps are largely due to deteriorating materials that produce uneven walking surfaces.

Recommendations

- Add new street trees and tree pits where feasible
- Repair sidewalk areas that are heaving and present accessibility issues
- Replace curbs where they have deteriorated

MAKE STREETS SAFE & ACCESSIBLE FOR ALL

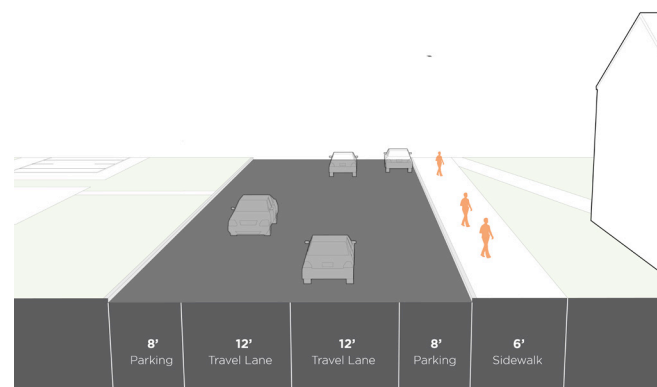
**NEIGHBORHOOD DRIVE
STATE STREET**

State Street features some of the most densely populated housing in the area and connects residents east of the BRIDGE District to Henry Hudson Park, Promenade Hill Park and the Furgary Fishing Village via Front Street. Providing safe paths for pedestrians and cyclists along State Street is critical when establishing a multi-modal street network in the city. The Connectivity Plan introduces a number of improvements along State Street that seek to improve safety and connectivity for local residents.

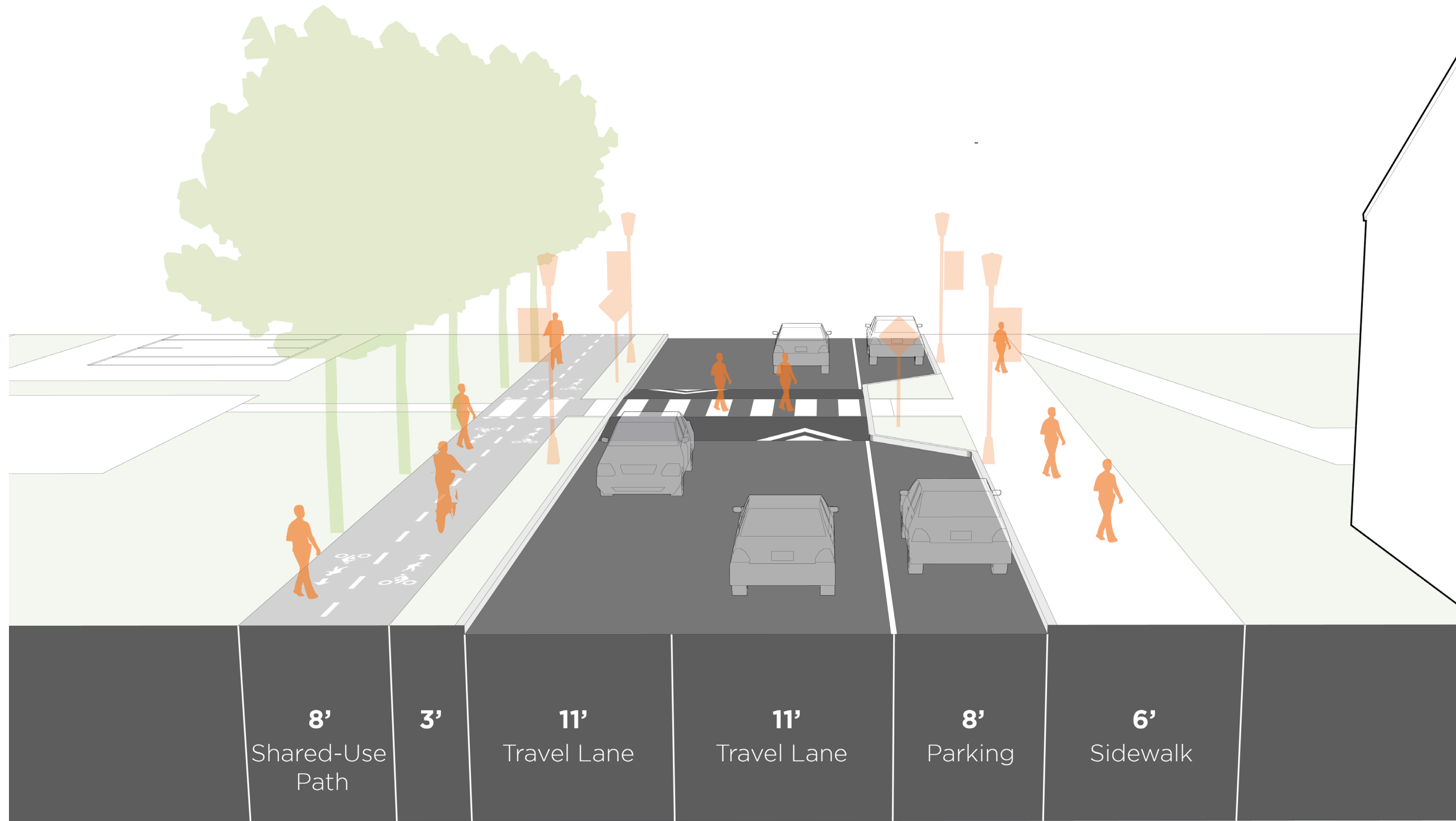
The current configuration of State St typically has one 6' sidewalk, two 8' parking lanes, and 12' travel lanes. However, the lanes within the roadway are not delineated with on-street striping, resulting in high speeds and disorganized traffic.

Recommendations

The proposed configuration narrows the travel lanes from 12' to 11' and introduces an shared-use path on the north side of the street for pedestrians and cyclists.



EXISTING STREET SECTION LOOKING WEST ON STATE STREET



**MAKE STREETS SAFE &
ACCESSIBLE FOR ALL**



**NEIGHBORHOOD DRIVE
STATE STREET**

A tabled mid-block crossing connects the Bliss Towers to the playground on the north side of the street. This crossing will calm traffic, increase visibility for pedestrians and make access to the sidewalk and playground universally accessible. Furthermore, a shared-use path will provide a raised walkway for pedestrian and cyclists that is separated from live traffic. In tandem with on-road striping to delineate parking areas from travel lanes, these improvements will create a safer environment for children and local residents.

- A** Shared-Use Path
- B** Tabled Mid-Block Crossing
- C** Striping
- D** Curb Extension

MAKE STREETS SAFE & ACCESSIBLE FOR ALL



**ACCESS DRIVE
BROAD STREET, WATER STREET**

Broad Street and Water Street lack consistent sidewalks on both sides of the street. Furthermore, a number of ADA issues have been identified along the sidewalk, which impede accessibility along Water Street and Ferry Street.

Recommendations

- New sidewalks along Broad and Water
- Consistent street trees and tree pits
- Pedestrian-scale light fixtures
- Wayfinding signage



**ACCESS DRIVE
DOCK STREET**

Although Dock Street lies along the Empire State Trail, there are no bike lanes along the street and trail signage is sparse.

Recommendations

- Painted bike lanes on Dock St as proposed by the TEP Grant
- Stormwater management infrastructure
- Pedestrian-scale light fixtures
- Wayfinding signage



**ALLEY / SHARED STREET
PARTITION ALLEY, CHERRY ALLEY, PRISON ALLEY**

Most of the alleys appear to lack adequate lighting. Many of the fences that line portions of the alley are inconsistent and in poor condition. Additionally, sidewalks are lacking where alley's meet their cross street. Care should be taken to avoid light from spilling onto residential properties.

Recommendations

- Alley intersection improvements as illustrated on pg. 43.
- Pedestrian-scale lighting fixtures on utility poles along Partition Alley
- Pedestrian-scale lighting fixtures on roadway poles
- Designated trash enclosures/bins



**ALLEY / SHARED STREET
CROSS STREET**

Cross Street provides access to exciting mixed-use development, the train station, and Henry Hudson Riverfront Park via Front Street. However, existing sidewalks are in poor condition.

Recommendations

- Pedestrian-scale lighting
- Sidewalk repair
- Street trees and planters

MAKE STREETS SAFE & ACCESSIBLE FOR ALL

INTERSECTIONS

Intersections play a critical role within the street network. They are activity nodes where people gather; they provide a transition from the sidewalk to the streets; and most importantly, they are the location where pedestrians and vehicles cross each others paths. Safe, properly designed and ADA compliant corners are essential to a safe, accessible and inclusive street network

Recommendations

This plan proposes a series of improvements to all intersections. The intersections have been grouped into four distinct types as follows:

- **Alley Intersections** - These intersections occur when alleys intersect other streets. They are the most compact intersection type and generally provide access to parking located in the rear of residential dwellings. Refer to pg. 43.
- **Standard Intersections** - This intersection type is the most common and occurs in all residential and non-commercial areas. Refer to pg. 45.
- **Commercial Intersections** - This intersection type is located along Warren Street, the city's primary commercial corridor. The commercial uses generally drive a higher level of pedestrian activity and require additional space for gathering and amenities. Refer to pg. 47.
- ⊙ **Unique Intersections** - This intersection type has been classified as such because it has unique circumstances or adjacencies that have design impacts which differ from other typologies.



MAKE STREETS SAFE & ACCESSIBLE FOR ALL

KEY ELEMENTS OF AN INTERSECTION

The following are elements that should either be considered or required at all intersections depending on field conditions and use.



CURB RAMPS

Curb ramps are an essential part of an accessible and inclusive pedestrian network. Curb ramps provide a transition from the roadway to the sidewalk level for pedestrians. All ramps should be compliant with the requirements set forth in the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and other requirements. There are a number of ways to design ADA-accessible curb ramps.

Proposed Locations:

- All intersections and crossings

CURB EXTENSIONS

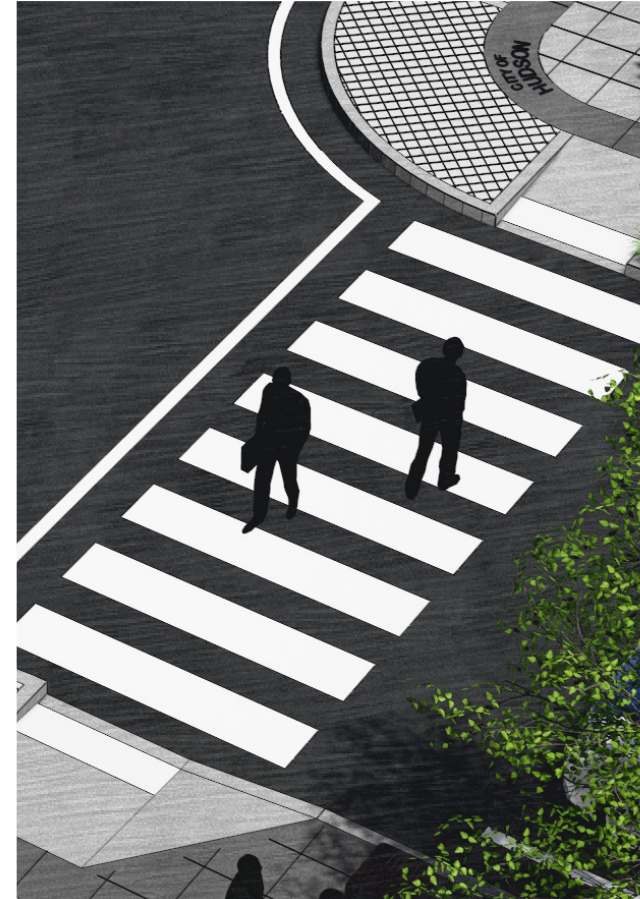
Curb extensions capture excess road space for pedestrian use. When located at corners, they increase safety by improving pedestrian visibility and reducing the overall crossing distance. Sidewalk extensions can also provide additional space for programming, restaurant seating, public seating or green infrastructure such as rain gardens. In most instances, this can be done by taking advantage of underutilized spaces such as corners where parking is not permitted. However, curb extensions can also be expanded for greater utility by re-purposing existing parking. This can be especially useful in commercial applications if existing sidewalk widths limit the capacity for outdoor seating or dining.

Note: Prior to constructing curb bump-outs, the following considerations should be vetted.

1. Maintenance vehicles: care should be taken to ensure that the design of the bump-out accommodates maintenance vehicles such as snow plows and street sweepers.
2. Operations: The city should clarify maintenance responsibilities and regulations/ordinances regarding use by private businesses (i.e. restaurants).

Proposed Locations:

- Corners on streets with parallel parking
- Mid-block crossings (i.e. State St.)
- Select locations where wider sidewalks are desired by the property owner and would benefit the community.



HIGH-VISIBILITY CROSSWALKS

Crosswalks increase visibility of pedestrians crossing the street and signals drivers that they should anticipate pedestrian traffic. Furthermore, highly visible crosswalks can encourage pedestrians to cross at designated areas, rather than at other points along the street.

Several options exist for the materials and design of high visibility crosswalks. Due to cost, durability and long-term maintenance, the preferred material is white thermoplastic striped “continental style” crosswalk. Continental style crosswalks are striped parallel to the traffic flow using 2’ wide bars with 1’-2’ spacing. Other options for crosswalks include stamped concrete or unit pavers. These options have a higher upfront cost but may be considered due to aesthetics or long-term durability.

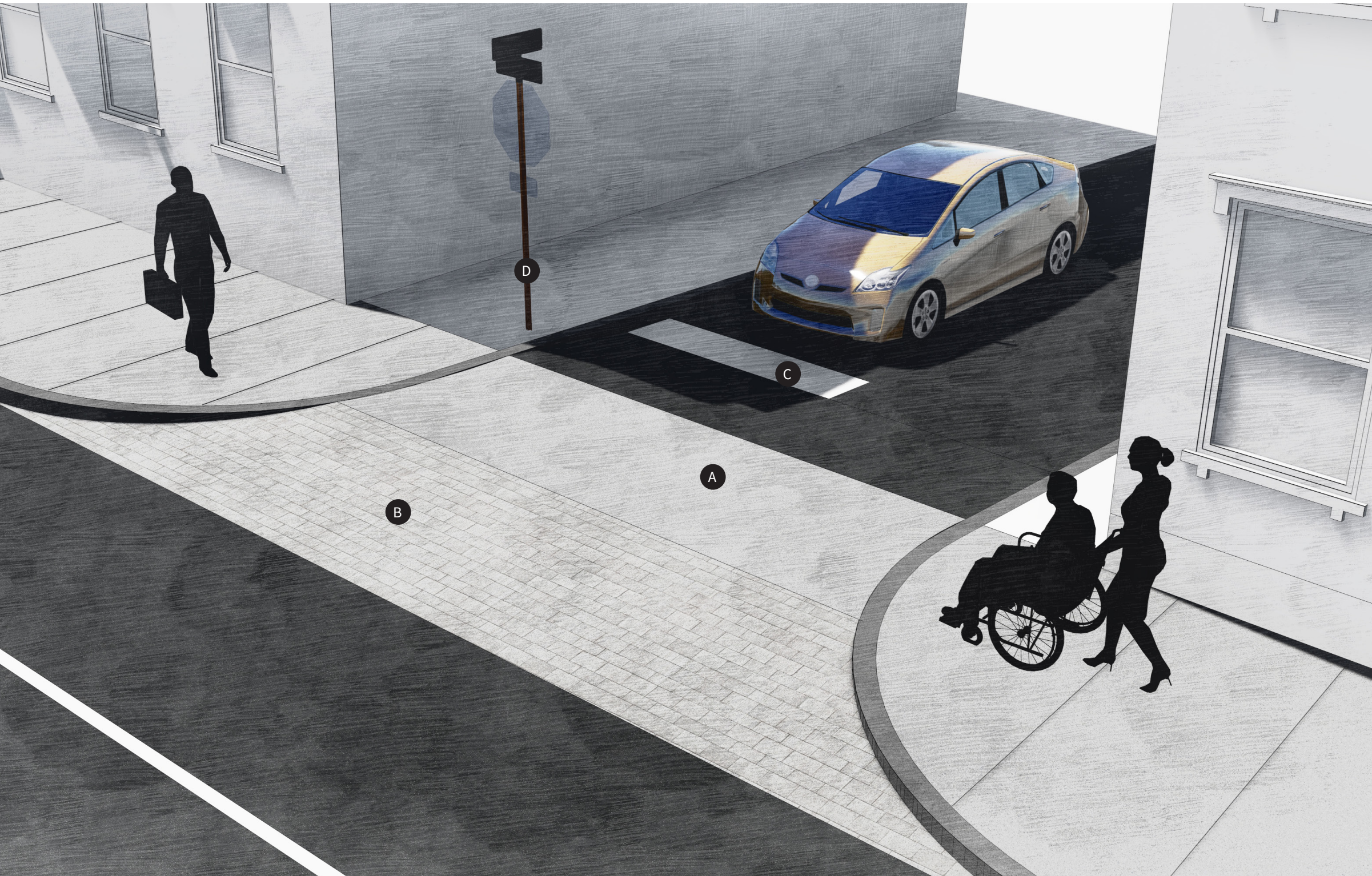
Thermoplastic has a lifespan of roughly 5-years before it begins to fade and needs to be re-striped. This should be accounted for in the City’s maintenance budget. If this cannot be budgeted, the City should perform an analysis of other, more permanent materials that may be used such as concrete or unit pavers. Stamped resin, stamped asphalt or other “faux” materials should not be considered.

Proposed Locations:

- Commercial Settings: 8’-10’ width
- Neighborhood Settings: 6’-8’ width

PAVEMENT MARKINGS

Other important pavement markings include double yellow lines, vehicular stop bars and shoulder/parking lines. Double yellow lines help organize traffic and delineate opposing travel lanes. They should be utilized within 50’ of the approach at intersections in instances where the combined travel lane width is 20’ or greater. Vehicular stop bars should be used at all intersections with stop signs and traffic signals. This is generally a 2’ thermoplastic strip that runs perpendicular to traffic and extends across all approaching travel lanes. Vehicular stop bars should be located 5’-10’ from crosswalks to keep a safe distance between cars and pedestrians. This distance depends on visibility and topographic conditions. Along Warren Street and Front Street, a 6” white thermoplastic line should delineate parking & shoulder areas.



ALLEY INTERSECTION

At the point where the alley meets the adjacent cross street, a driveway apron should be provided. This treatment provides an uninterrupted sidewalk connection which signals to vehicles that pedestrians have the priority. The apron itself shall consist of cobblestone pavers. A stop sign and stop bar shall also be included wherever they can be reasonably accommodated.

Recommendations

- Driveway aprons should be provided at all alley intersections
- Textured pavers should be considered for use in the driveway apron
- Concrete sidewalk shall be provided across alley at the same elevation as the adjacent sidewalk
- Stop sign and stop bar should be provided if and where appropriate. If space does not allow for a stop sign, stenciling can be used to signal drivers to stop/yield to pedestrians

- Ⓐ Concrete
- Ⓑ Driveway Apron
- Ⓒ Stop Bar
- Ⓓ Signage

MAKE STREETS SAFE & ACCESSIBLE FOR ALL



STANDARD INTERSECTION

This intersection type is the most common and occurs in all residential and non-commercial areas.

Recommendations

- Curb ramps must be provided at all corners
- Curb extensions should be considered on all corners that have parallel parking.
- Planting should be provided on corners where a maintenance programs can be established and/or adjacent property owners agree to maintain or “adopt” the planter.
- Green infrastructure may be considered within curb extensions
- High visibility crosswalks should be provided at intersections
- Pavement marking, including stop bars, should be considered for all corners as required.

- Ⓐ Curb Ramp
- Ⓑ Curb Extension
- Ⓒ High-Visibility Crosswalk
- Ⓓ Pavement Marking
- Ⓔ Scored Concrete
- Ⓕ Granite Sets
- Ⓖ Bike Rack
- Ⓗ Bench
- Ⓘ Trash Receptacle

MAKE STREETS SAFE & ACCESSIBLE FOR ALL



COMMERCIAL INTERSECTION

In recognition of Warren Street’s prominence as a retail corridor, a few variations to these elements are considered, which seek to expand the utility of intersections for the purposes of seating, dining and wayfinding.

Recommendations

- Curb ramps must be provided at all corners
- Curb extensions should be considered on all corners that have parallel parking.
- Decorative pavers should be considered as pavement highlights.
- Planting should be provided on corners where a maintenance programs can be established and/or adjacent property owners agree to maintain or “adopt” the planter
- Green infrastructure may be considered within curb extensions
- High visibility crosswalks should be provided at intersections. Additional striping to further highlight the intersection should be considered
- Pavement marking, including stop bars, should be considered for all corners as required.
- Double yellow lines that extend 50’ from the stop bar down the length of the road

- | | |
|------------------------------------|---------------------------|
| A Curb Ramp | G Granite Setts |
| B Curb Extension | H Bike Rack |
| C High-Visibility Crosswalk | I Bench |
| D Pavement Marking | J Trash Receptacle |
| E Wayfinding / Signage | |
| F Scored Concrete | |

MAKE STREETS SAFE & ACCESSIBLE FOR ALL

BICYCLE NETWORK

Safe and enjoyable bicycle access is key to the development of an inclusive multi-modal connectivity plan. The City of Hudson has to consider two types of cyclist when planning their bicycle network. The first are part-time and full-time residents that will use cycling as a primary way of getting around town. The second, are recreational cyclists riding casually and enjoying many beautiful areas the city has to offer. The recent completion of the Empire Trail, a regional trail system that runs from Manhattan to the Canadian border, will certainly increase the number of recreational riders. Currently, the Empire Trail enters the district via Mill Street, travels along Dock Street, turns down Front Street, and leaves the district via Allen St. While this route does not currently feature any bicycle facilities, the TEP Grant awarded to the city is poised to install striped bicycle lanes on Dock Street and Front Street. This TEP Grant project is currently on hold pending the findings and recommendations of this report.

Recommendations

This plan recommends the implementation of a robust series of bicycle facilities that reinforces the Empire Trail and connects residents and visitors to the waterfront, train station and other amenities. Wherever possible, these facilities should provide maximum separation from vehicular traffic in order to encourage users of all abilities. The recommendations are as follows:

- **Dock Street:** Proceed with the TEP Grant improvements which include striped bicycle lanes.
- **State Street:** Install asphalt multi-use path along north side of State Street from 2nd Street to Front Street. Care should be taken to understand how this path will transition in areas east of 2nd Street as the road cross section changes.
- **Allen Street:** The narrow cross section prohibits more robust bicycle facilities from being installed on this street. Install priority shared lane markings, or “super sharrows,” assuming that bicycle lanes cannot be accommodated.
- **Front Street:** Construct an off-road multi-use path that extends, at a minimum, from State Street to Allen Street. Beyond those points the bicycle facilities may need to transition to on-road depending on the available road width.
- **Bicycle Nodes:** Nodes should be provided at key points along the route to allow for amenities like bicycle parking, repair and storage.



MAKE STREETS SAFE & ACCESSIBLE FOR ALL



SHARED-USE PATH

A Shared Use Path is separated from the roadway, usually by a curb and buffer, and is designed to be used by bicyclists, pedestrians and others. This type of path is ideal for a broad range of users from novice to expert. In addition to providing safer cycling facilities to residents, the shared use path will enhance the experience of riders on the Empire State Trail coming from Harry Howard Avenue. When implementing a shared-use path, bicycle access should be considered carefully to accommodate ingress/egress from intersecting streets.

This application is being applied to the following:

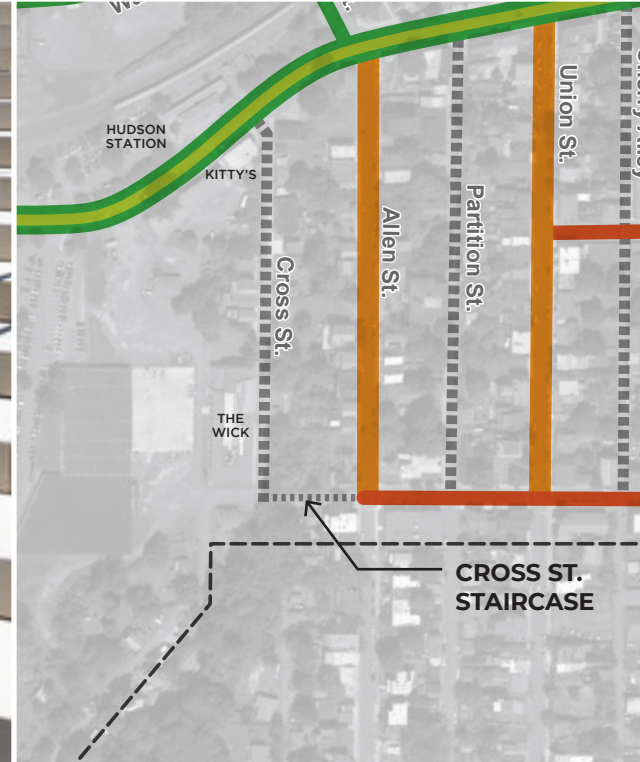
- State Street between 2nd Street & Front Street
- Front Street between State Street & Allen Street

SHARE THE ROAD

In areas where space is too limited to institute a shared-use path, priority shared lane markings, or “super sharrows,” are recommended to make drivers aware that cyclists may be present on this road and to drive accordingly. This type of facility is meant to fill in an established bike network and connect riders to protected cycling facilities in instances where designated bike lanes cannot be accommodated.

This application is being applied to the following:

- Allen Street between 2nd Street & Front Street
- Portions of Front Street



CROSS STREET CONNECTION

The staircase that connects Cross Street to Allen Street provides a shortcut for residents walking between Downtown Hudson and destinations in the southwest portion of the city including Kitty's, the Wick, Hudson Brewing Company, Henry Hudson Riverfront Park, and the Basilica. Furthermore, it has been identified as a pertinent connection for commuters walking to/from home and the train station. This connection will only increase in importance as new development is completed in this quadrant of the city.

Currently, the staircase is in disrepair. Concrete steps are beginning to deteriorate and the handrail has been bent in multiple locations. To enhance connectivity for cyclists and pedestrians, a series of improvements are suggested. These include new concrete stairs, new handrails, lighting, benches, bike racks, and a runnel to allow cyclists to wheel their bikes up the steps.



- A** New Handrail
- B** New Concrete Steps & Landings
- C** Runnel

03

Reconnect the Waterfront

FRONT STREET INTERSECTIONS

The Hudson River is one of the city's greatest assets. It is and has been used by the community for recreation, passive relaxation, industry and more. Front Street parallels the Hudson River and provides access to this great amenity. However, people walking or driving along Front Street have no sense of its close proximity. This experiential disconnect is due to several factors ranging from visual disruptions due to topography and development patterns; and physical disruptions due to lack of wayfinding and pedestrian access. Front Street should be designed in a way that reconnects Front Street to the river both physically and visually.

Recommendations

Front Street should be designed in a way that reconnects Front Street to the river both physically and visually. This should occur at each of the four intersections that provide access to the waterfront. This will be accomplished through two interventions as follows:

Wayfinding and Materiality - The intersections should be designed to enhance wayfinding by drawing the key characteristics of the river up to the intersections. The most common way that this is accomplished is through the use of signage. Wayfinding signage should be located at each of these intersections that directs people to the various areas of the waterfront. But wayfinding is not just limited to signs. Wayfinding is enhanced through the use of consistent materials including paving, furnishings, plant material and other features. These elements should be incorporated in a way that transforms each of these intersections into a discreet "gateway to the river",

Pedestrian and Bicycle Access - The intersections along Front Street should be designed with a strong pedestrian and bicycle priority including high-visibility crosswalks. Crosswalks and corners may be designed using special paving and include wayfinding and branding elements. Safe, ample and accessible bicycle and pedestrian facilities should be provided from these intersections to the waterfront.



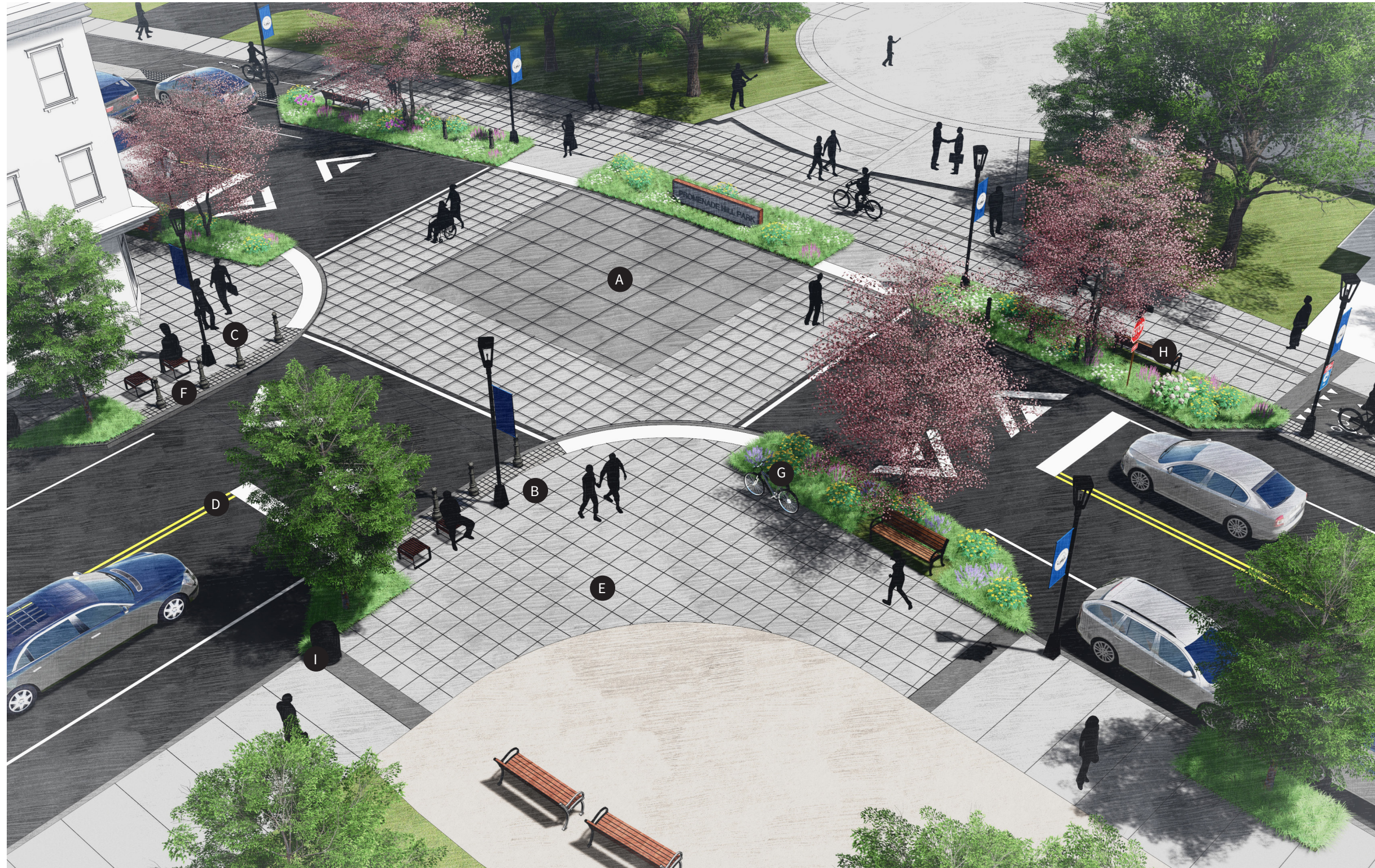
RECONNECT THE WATERFRONT

EXAMPLE: FRONT STREET & WARREN STREET

The intersection of Front Street and Warren Street is one of the most important of the four access points along Front Street. As the terminus of Warren Street and the entry point to Promenade Hill Park, this intersection handles significant pedestrian and bicycle activity.

This intersection is envisioned as a gateway to the newly renovated Promenade Hill Park. Corners will be bumped out to reduce crossings and provide ample space for pedestrians. The intersection itself may be either tabled or paved with special materials to notify drivers that they should expect pedestrians and cyclists to be present. Native plant materials, natural stone and specialty paving will be visual indicators of the relationship to the waterfront. And gateway signage will welcome residents and visitors.

These design approach should be replicated, to an appropriate degree, at each of the four intersections along Front Street. This will provide consistency in branding and wayfinding and help connect visitors and residents to the waterfront.



- A** Raised Intersection
- B** Curb Extension
- C** Bollard
- D** Pavement Marking
- E** Scored Concrete
- F** Granite Setts
- G** Bike Rack
- H** Bench
- I** Trash Receptacle
- J** Granite Pavers



04
**Celebrate
the Historic
Architecture of
Hudson**

CELEBRATE THE HISTORIC ARCHITECTURE OF HUDSON

INSPIRATION

The streetscape should provide a ground plane that supports the historic fabric that exists in Hudson. A number of historic cities throughout the United States and particularly the East Coast utilize simple, timeless materials such as granite, cobblestone, and concrete in their streets. When applied to Hudson, these materials would compliment, rather than compete with the rich historic architecture found in the city. These timeless materials make strides in developing a strong sense of place and have a size and texture that can be appreciated at the pedestrian scale. Like any streetscape material, they should be utilized in a manner that adheres to ADA guidelines and should provide a smooth, stable walking surface for pedestrians.



CELEBRATE THE HISTORIC ARCHITECTURE OF HUDSON

MATERIAL PALETTE

The proposed material palette draws inspiration from the City of Hudson as well as other historic cities around the country. These materials are simple in nature and are designed to last a long time. Furthermore, they have a narrow color range that prevent making the street visually busy or distracting. Further information regarding specifically how these materials should be utilized can be found in Chapters 2 & 3.

A Tinted Concrete

Tinted concrete is a popular sidewalk material that can help mask dirt, gum and general wear and tear that sidewalks are prone to. It has a pleasant finish that is not too bright and does not detract from the surrounding environment. Tinted concrete is an appropriate material for nearly any sidewalk in the city.

B Scored Concrete

Scored concrete can be utilized to distinguish intersections and corners from the rest of sidewalk areas.

C Granite Setts

Granite setts can be used as a design element that enhances the historic character of a streetscape. These are generally recommended at intersections in between curb ramps.

D Granite Pavers

These granite pavers are intended to be utilized in areas with high volumes of pedestrian traffic, such as Warren Street. They have a strong historic character that make them a go-to for streets and public spaces.



CELEBRATE THE HISTORIC ARCHITECTURE OF HUDSON

FURNITURE PALETTE

Each element in the furniture palette is composed of timeless materials that harmonize with the proposed streetscape materials and existing architecture in Hudson. The palette has a timeless color range with some elements displaying a slightly modern form.

A Tree Pit Guard

These elements protect the longevity of street trees, while keeping the tree pit and surrounding sidewalk area tidy.

B Bike Rack

Bike racks are an important amenity for cyclists that should be located near public spaces and commercial corridors. They should be positioned to minimize obstruction of sidewalk areas for pedestrians.

C Pedestrian Light Fixture

The existing pedestrian light fixture found along Warren Street works well within the overall streetscape and materials palette. These are appropriate for other areas in the BRIDGE District beyond Warren Street and serve to illuminate sidewalk areas.

D Bench

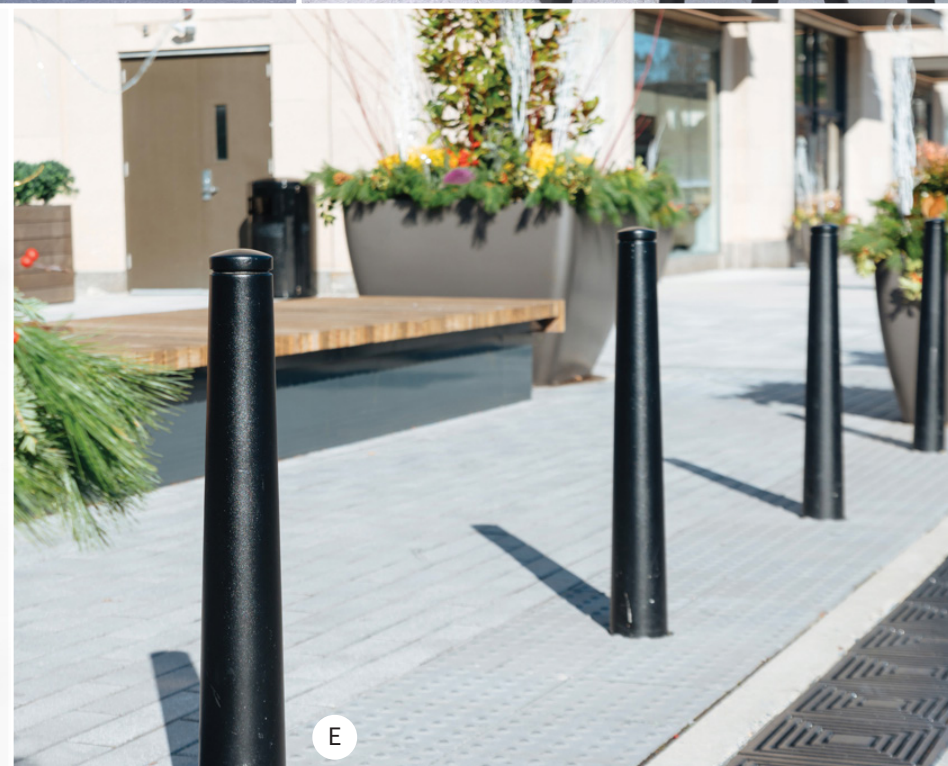
The bench comes in a variety of forms to fit various applications around the city. It has a modern twist to a classic form that mimics the selected bike rack.

E Bollards

In a few instances, bollards may be required to separate cars from pedestrian areas. The selected bollard is a safety feature that does not distract from the surrounding streetscape.

F Trash Receptacle

Trash receptacles should be located at regular, predictable intervals in order to keep litter off the streets. This particular model can be used as a placebranding element and is easily opened for trash removal.



05 Phasing & Implementation

PHASING & IMPLEMENTATION

DISTRICT-WIDE IMPROVEMENT STRATEGY

When completed, the Connectivity Plan will deliver improvements to nearly every intersection and street within the BRIDGE District. These improvements vary in a number of ways and are categorized below for the purposes of phasing & implementation. The diagram to the right illustrates each layer of improvements proposed for the BRIDGE District and not necessarily what can be achieved with the DRI grant.

Full Road Reconstruction

These streets require a greater level of construction than other areas. The Connectivity Plan proposes to change the configuration of these streets by reallocating roadway space for increased pedestrian and cycling safety. For specific improvements along Front Street, please see pg. 29. For improvements along State Street, please see pg. 35.

Sidewalk Infill & Selective Street Tree Planting

These improvements add new sidewalks where missing and replace broken or deteriorating sidewalks where needed. Furthermore, tree pits and street trees are added in applicable areas.

Signage & Striping

These improvements add signage and striping to the roadway to delineate travel lanes, parking areas, and shoulders withing the roadway. In some cases, they also introduce bike facilities to the street.

Bus Stop Enhancements

Bus stop enhancements such as a transit shelter, signage, and route information will be provided at Columbia Street & 2nd Street and Front Street & Warren Street.

PROJECT COORDINATION

TEP Grant

The TEP Grant is a separate project which funds bike lanes and roadway striping along Dock Street and portions of Front Street. These improvements are being coordinated with the BRIDGE District Connectivity Plan to ensure cohesiveness and to maximize connectivity within, to, and from the District.

Permitting

This project does not impact any state or county roads and therefore it is assumed that no state or county permits will be required. The only permit anticipated is a Stormwater Pollution Prevention Plan.



PHASING & IMPLEMENTATION

**PRIORITY #1
MULTI-MODAL ACCESS**

FRONT ST. (BETWEEN ALLEN ST. & STATE ST.) & STATE ST.

Each east/west street within the BRIDGE District comes to a “T” at Front Street. Therefore, any improvements to this corridor will impact a large majority of residents and provide them with stronger connections to Henry Hudson Riverfront Park, Hudson Station, Promenade Hill Park, the community garden, and the Furgary Fishing Village.

State Street features a playground, recreational area, and some of the highest density in the project area. It provides a critical connection to the amenities along Front Street and to the Hudson Area Library/Senior Center, which lies a few blocks east of the BRIDGE District. The street is missing a sidewalk on its northern side and attracts high vehicular speeds. As a highly populated street that generates large volumes of foot traffic for school-age children, State Street has been identified as a priority for safety improvements.

The improvements along Front St. and State St. provide a major north/south and east/west connection to many Hudson residents. A continuous pedestrian and cycling path will frame the district. Intersection improvements will calm and organize traffic, while increasing accessibility and improving connectivity to some of the city’s most popular destinations.



**PRIORITY #2
ADA COMPLIANCE**

WATER ST., BROAD ST., FRONT ST. (BETWEEN THE BASILICA & ALLEN ST.), FRONT ST. (BETWEEN STATE ST. & DOCK ST.) & WARREN ST.

The City of Hudson conducted an ADA Evaluation along Water St., Broad St., Front St., and Warren St in 2020 and found a number of ADA compliance issues along the route. These streets are of particular importance because they connect residents to city parks and services. The improvements outlined within priority #2 address ADA issues identified along city properties. A majority of the ADA issues identified along Warren Street will be addressed with improvements to the intersections of Front & Warren, Warren & 1st and Warren & 2nd.



PHASING & IMPLEMENTATION

**PRIORITY #3
PRIMARY CONNECTIONS**

ALLEN ST., COLUMBIA ST., 2ND ST. (BETWEEN WARREN ST. & STATE ST.), & THE CROSS ST. STAIRCASE

These streets have been identified as residential areas that are in the most need of repair. Their condition prohibits safe and accessible connections for pedestrians. These improvements seek to bridge the most pressing gaps in the sidewalk network.



**PRIORITY #4
SECONDARY CONNECTIONS**

CROSS ST., UNION ST., 1ST ST., 2ND ST. (BETWEEN ALLEN ST. & WARREN ST.), 2ND ST. (BETWEEN STATE ST & DOCK ST.), DOCK ST.

Without these improvements, a universally accessible street network cannot be established throughout the BRIDGE District. While important, these improvements have been identified as priority #4 because they lie in areas that have either a) low density or b) existing conditions that are better than other streets in the district.

