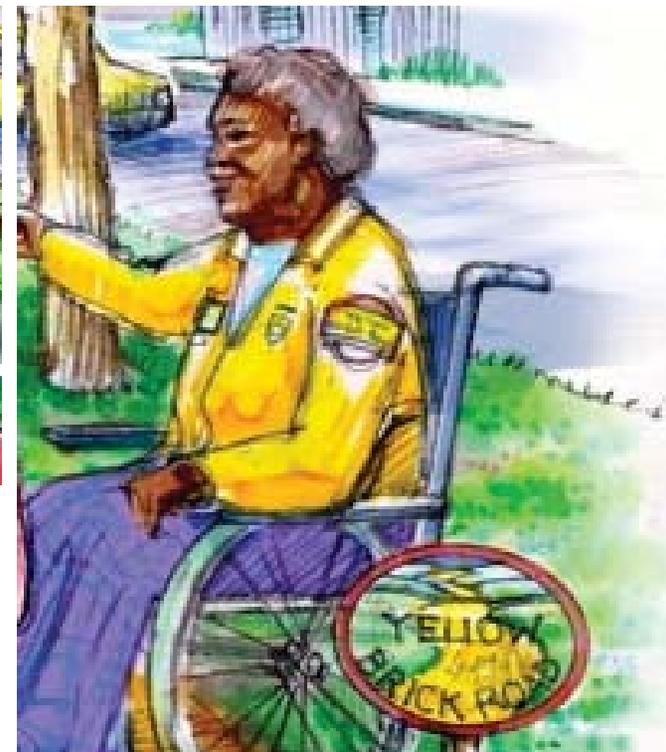
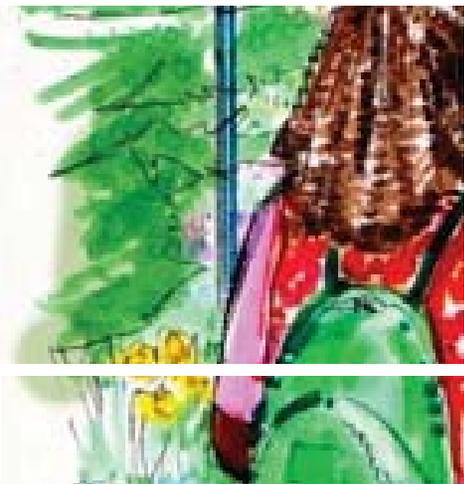


Yellow Brick Road Iron Triangle Walkable Neighborhood Plan

Transforming lives by transforming public space.



FEHR & PEERS



Local
Government
Commission



February 2015

Adopted by City Council
Resolution No. 49-15

This project is funded in part by a grant from the Environmental
Justice grant program of the California Department of Transportation

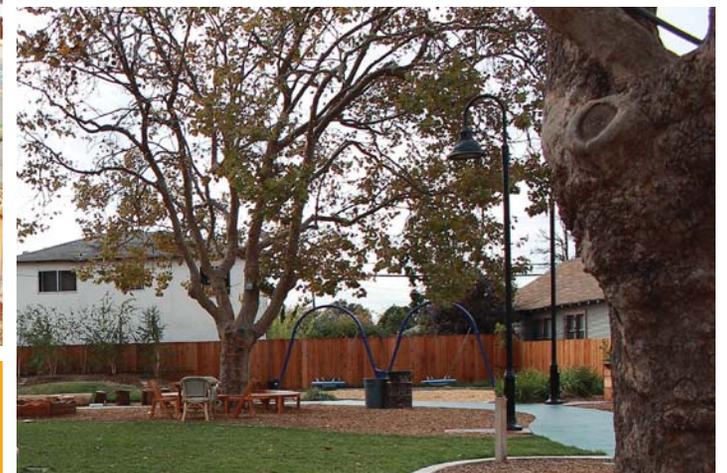


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Introduction

About the Yellow Brick Road Iron Triangle Walkable Neighborhood Plan

The Yellow Brick Road Walkable Neighborhoods Project addresses key community-identified barriers, issues, and opportunities in the community in order to design and implement complete streets improvements along roadways in the community-identified Yellow Brick Road (YBR) network. These complete streets improvements would be implemented in conjunction with rehabilitation of abandoned buildings and properties, code enforcement issues of aggressive dogs and fence lines, and personal security improvements to create safe, pleasant, artful, and walkable roadways in the Iron Triangle Neighborhood. The routes would connect the key assets in the neighborhood, including local elementary schools, parks, and transit.

The Yellow Brick Road concept was conceived by local youth living in the Iron Triangle neighborhood as a way to safely link key areas in the neighborhood through bright yellow brick patterns on the sidewalks and roadways, as described in the next chapter *Envisioning the Yellow Brick Road*. While the Yellow Brick Road idea originated in the Iron Triangle neighborhood, it is a model for neighborhood planning and creating safe routes to key destinations that can be replicated in neighborhoods throughout Richmond and the United States. As such, the Yellow Brick Road Walkable Neighborhood Plan is intended as a stand alone document and as an appendix to the Richmond Pedestrian Plan (2011). This Plan documents the first application of the Yellow Brick Road concept in Richmond.

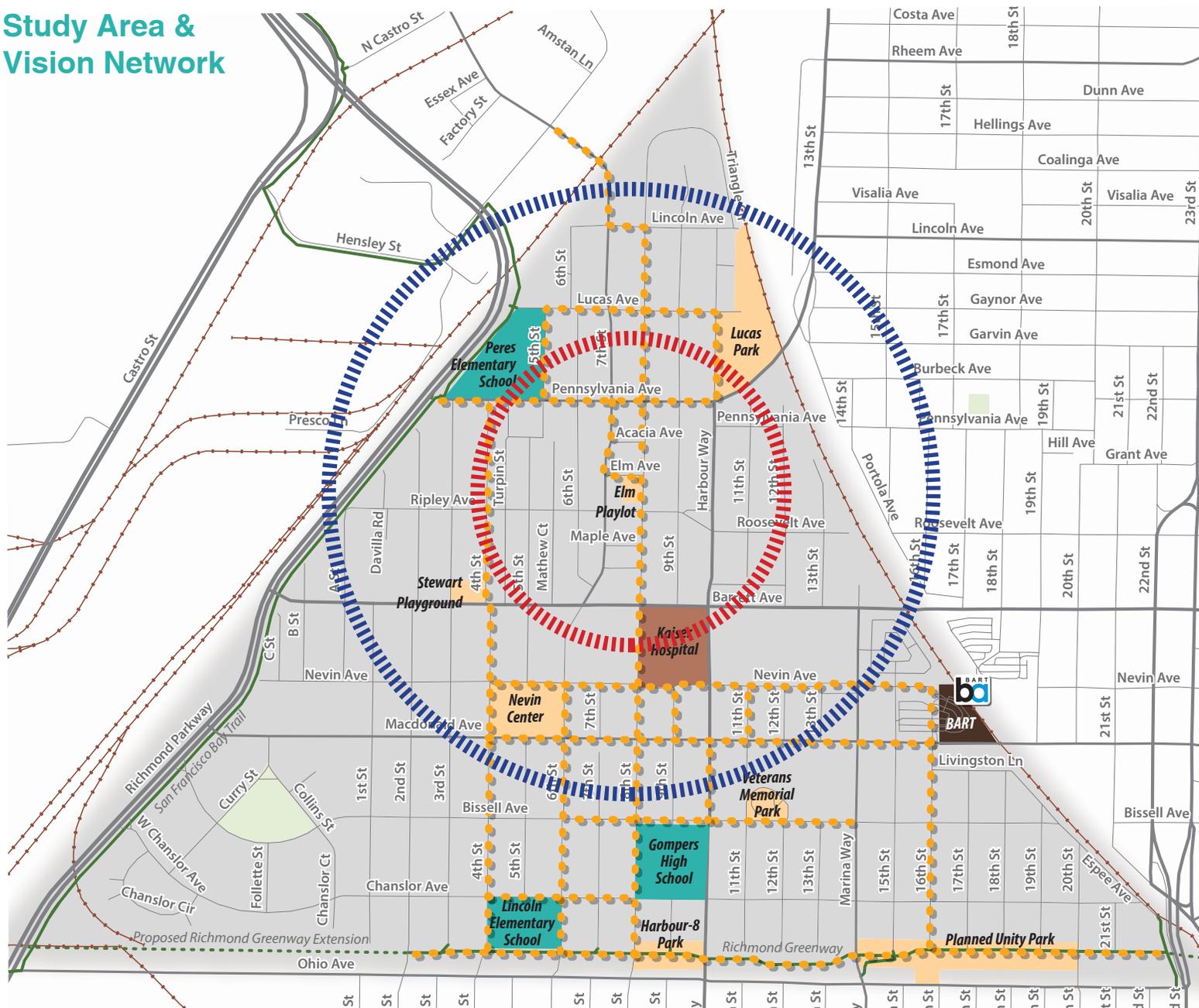


Source: Pogo Park

This Walkable Neighborhood Plan is the outcome of an intensive community-driven process to improve the safety, security and desirability of walking for transportation and health in the Iron Triangle neighborhood. The City of Richmond, Local Government Commission and Pogo Park collaborated to prepare a Caltrans Environmental Justice Transportation Planning Grant proposal to

fund the project. Caltrans awarded the grant to the City and its partners in 2012. The project partners selected Fehr and Peers, a firm with extensive multi-modal transportation planning, engineering and design expertise, to help inform the hands-on community-driven visioning process used to develop the plan, and to prepare the detailed design concepts presented in the pages that follow.

Yellow Brick Road Study Area & Vision Network



LEGEND

-  Yellow Brick Road
-  School
-  Park
-  Iron Triangle Study Area
-  5 Minute Walk Shed from Elm Playlot
-  10 Minute Walk Shed from Elm Playlot

Study Area

The study area of this Plan is generally defined as the Iron Triangle neighborhood of Richmond.

The neighborhood is bounded by the Richmond Greenway and Ohio Avenue to the south, the BART and Union Pacific Railroad tracks to the east, and Richmond Parkway to the west.

Envisioning the Yellow Brick Road

Overview

The Yellow Brick Road is envisioned as a network of safe, green, and clean walking and biking routes in Richmond, California's Iron Triangle neighborhood

This section explains the concept, place, partners, strategies, and lessons learned in envisioning and creating the Yellow Brick Road in the Iron Triangle Neighborhood.

1 THE CONCEPT: *The Yellow Brick Road*

In a 2008 summer youth program, a group of teen-agers from Richmond, California's Iron Triangle neighborhood were given the task of thinking of a project that would improve their neighborhood. They came up with a brilliantly simple idea: the Yellow Brick Road.

They envisioned Iron Triangle residents identifying key community assets (e.g., schools, parks, churches, community centers, transportation hubs, etc.). Then they would connect those assets via the Yellow Brick Road – a network of “safe, green, and clean” (their words) walking and biking paths designated by brightly colored yellow bricks, stenciled on sidewalks and roads.

The City of Richmond and its partners, the Local Government Commission and Pogo Park, received an Environmental Justice Transportation Planning Grant for the Yellow Brick Road from the California Department of Transportation in 2012 to further develop this neighborhood vision into a plan. The project partners selected Fehr and Peers, a transportation planning and engineering firm and Dan Burden of Walkable and Livable Communities Institute, a non-profit that inspires, teaches, connects and supports communities in their efforts to improve health and well-being through better built environments, to help inform the intensive community-driven visioning process used to develop the plan and to prepare the detailed design concepts presented in the pages that follow.

2 THE PLACE: *Richmond, California's Iron Triangle Neighborhood*

The Iron Triangle is a historic neighborhood of roughly 15,000 people in the center of Richmond. Its one square mile was originally defined by three major railroad lines that formed a triangle around its border, hence its name. Today, its southern boundary is the Richmond Greenway, a multi-use path that was constructed in the former Atchison-Topeka and Santa Fe Railroad corridor.

The Neighborhood Has Good Bones: Historic and architecturally notable houses, a well-laid-out street grid with short, walkable blocks, and a major regional transit hub (Richmond is the only Bay Area city with a direct BART-to-Amtrak connection).

Demographics: According to the 2010 US Census, the Iron Triangle neighborhood was 60% Latino, 27% African-American, 5% Asian, 7% other. The Iron Triangle is a historic center for African Americans who came from the South to work in the Richmond shipyards and the recent population trend has been an increase in Latinos, including immigrants from Mexico and Central America.



3

THE PARTNERS:

The Right Place, Right Time,
Right People

Economics: Low-income and working poor; 50% of children live in poverty.

Environment: The Chevron Richmond Refinery, Port of Richmond, Richmond Parkway, railroad lines, and industrial uses contribute to poor air quality, few trees or natural areas.

Challenges: Unemployment, blight and decay, beleaguered and underfunded schools, little access to healthy foods, persistent health problems including asthma and obesity, high levels of violent crime, dangerous streets, and hopelessness.



CITY GOVERNMENT

The City of Richmond: This effort involved several City departments including the City Manager’s Office, Planning and Building Services, Engineering Services, Public Works, Parks Division, Police Department, Code Enforcement, and the Fire Department, working together to implement the City’s Pedestrian Plan and Bicycle Master Plans, adopted in 2011, and the City’s “Health in All Policies” strategy to address health disparities and work towards health equity in Richmond (adopted by the Richmond City Council in 2014).

(www.ci.richmond.ca.us/index.aspx?NID=2575)

NONPROFIT PARTNER

Pogo Park: A community-based nonprofit working to transform city parks and streets in Richmond’s Iron Triangle neighborhood into safe and vibrant green spaces. Pogo Park organized and managed the unique resident-driven community engagement process described below. (www.pogopark.org)

PROFESSIONAL DESIGN TEAM

Local Government Commission: A nonprofit organization that assists local governments and community leaders in California and beyond with design tools and strategies and innovative public engagement initiatives to develop locally driven solutions. (www.lgc.org)

Fehr & Peers: Transportation engineers with extensive multi-modal transportation planning, engineering, and design expertise. Fehr & Peers helped to develop the community’s vision for the Yellow Brick Road into detailed designs that are presented in this document. (www.fehrandpeers.com)

Dan Burden, Blue Zones: A nationally recognized educator and leader on pedestrian and bicycle path design and creating more livable, walkable, equitable communities. (www.bluezones.com/speaking/dan-burden-speaking-2/)

4 THE STRATEGY: *How We Empowered the Community*

A **Community Outreach Team formed.** Made up of 30 local residents, diverse in race, ethnicity, and gender, mirroring the demographics of the neighborhood, and including children, youth, adults, and seniors—people who know their neighborhood best.

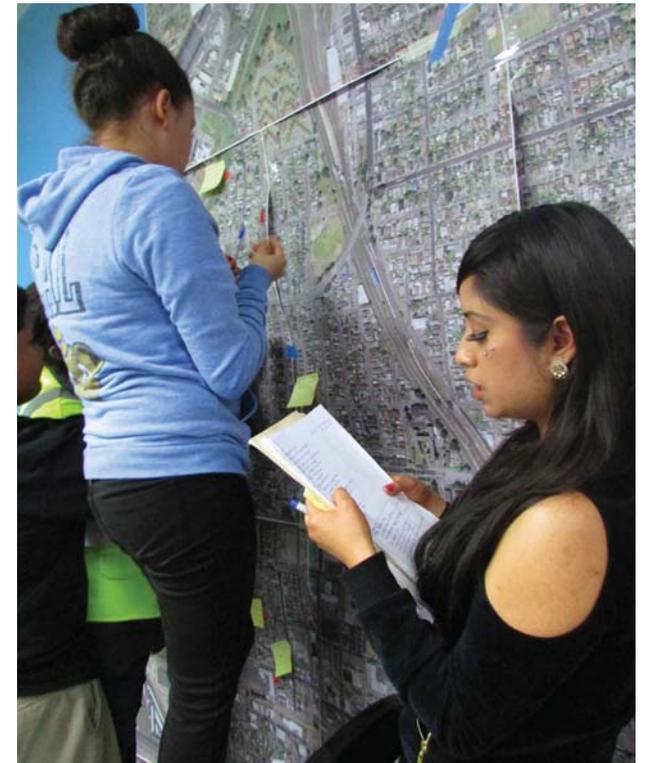


B **The Community Outreach Team maps the neighborhood.** Walking every street in the Iron Triangle over 21 days, the team makes detailed notes on what they observe—both “positive” (a yard with flowers) and “negative” spaces (vacant houses, snarling guard dogs, speeding cars, menacing gang tags). They meticulously catalogue every physical barrier to mobility such as lack of crosswalks, wide streets, poor lighting, vacant houses, and men who sit in open-door garages, commenting and leering at women who pass by.

By beginning the planning process with local residents walking and documenting the streets with their own eyes, the typical sequence of city planning is turned around. Instead of outsiders (consultants) telling residents what they see is right and wrong with their neighborhood, the community becomes an active player in assessing their own neighborhood assets and constraints.



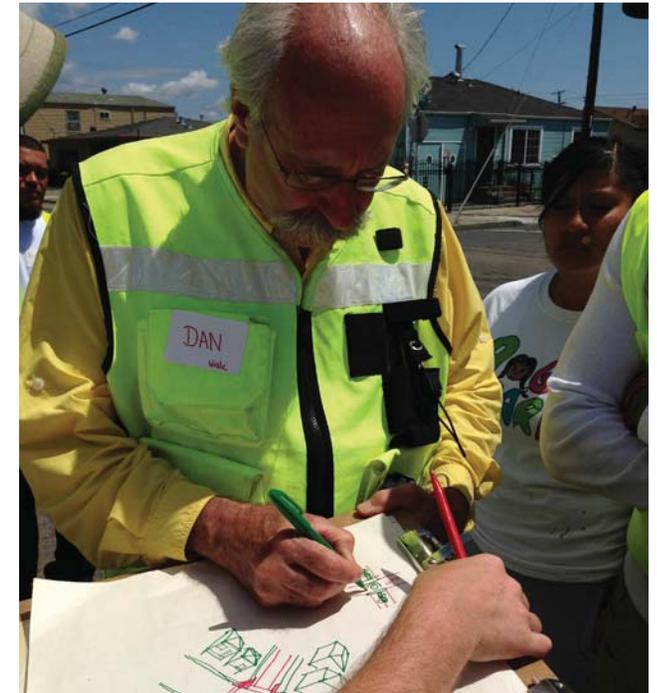
C **The Community Outreach Team reports its findings.** Writing on a large wall map, the team pinpoints the Iron Triangle’s positive and negative spaces. Local residents write their observations and ideas on post-it notes and stick them to the map in the appropriate spots. At this meeting, the group decides on the routes for the Yellow Brick Road.





The Professional Design Team and Community Outreach Team walk the proposed routes together. Stopping at each barrier, the two teams and city staff discuss possible solutions onsite. Dan Burden explains why stop signs fail, how bulb-outs and mini-circles make it physically impossible for cars to speed, and how islands in the middle of wide streets help people to cross them. When the Community Outreach Team presents him with a barrier, Burden describes possible solutions used in other cities around the world, sketching them on butcher paper or on the ground in chalk. Everyone can see and comment on the proposed changes.

The process works like magic. Residents quickly develop a shared language and understanding of how to solve the barriers to walking and biking in subsequent locations. The residents, city staff, and professional design team are in synch.



Envisioning the Yellow Brick Road



The Professional Design Team refines the plan. The Professional Design Team refines the plan. The Professional Design team, using the COT and community's ideas develops a working draft plan with detailed measurements and plans for street and sidewalk improvements.



The Professional Design Team and Community Outreach Team create a “Living Preview” of the Yellow Brick Road. As a way to communicate the proposed street improvements to the local community, the project partners create a three-dimensional full-scale model for a segment of the YBR. They use chopped wood pieces, potted plants, sawhorses, Astroturf, traffic cones,



chalk, paint, scavenged road signs, two huge carved wooden totems to create mini-circles, straw waddles to create the illusions of wider sidewalks, narrower streets, crosswalks, and bike lanes.

The Living Preview of the Yellow Brick Road is publicized to the entire community. Notices go out



to neighborhood residents, city officials, police and fire departments, local schools, and the public bus system providers who has a stop in the Living Preview segment. Over two days, 354 people attend the event. Residents mingle with city officials, police officers, and professional transportation planners and engineers to examine and critique the design. A transit bus tests how the vehicle would maneuver around the new traffic circle.

The City sends a fire engine and fire truck to test the two traffic circle designs. But when it tries to get around the first mini-circle it gets stuck. Firemen and local residents work on a solution together, logs and potted plants are rearranged, and the fire truck tries again. Still no luck. It takes 13 tries to find exactly how the mini-circle must be built to allow passage by the fire truck.

The engineer from the Fire Department is jubilant. He explains that Richmond's fire trucks are several feet longer than standard models, causing headaches with road design changes. Professional designers always assume the standard length, he said. "No one ever asked us for our opinion before." Dan Burden says, "People in the world of livable streets will be talking about the Yellow Brick Road Living Preview in decades to come."



5 THE TAKE-AWAYS: *Lessons Learned*

- We need to rethink our understanding of who is an expert. The premise of this project—recognizing that local residents are experts in their own environment—works.
- Empowering a core group of committed local residents—in this case, the young people who first envisioned the Yellow Brick Road—acknowledges this local expertise and builds a foundation of trust in the community.
- Organized and empowered community residents can work together with city staff, transportation planners and engineers, and other professionals to create a detailed conceptual design.
- If they are thus empowered, community residents are capable of learning the language of street design, building neighborhood capacity and skills.
- The Living Preview model is a powerful method to test ideas and engage community members in the transformation of their own streets.
- Design professionals should see their roles as partners who can guide and collaborate and not simply deliver solutions.
- The Yellow Brick Road concept is a dynamic model for neighborhood planning and creating safe routes to key destinations that can be replicated in other neighborhoods in Richmond and across the United States.





Iron Triangle Neighborhood

The Iron Triangle neighborhood is a one square mile region located in central Richmond, just east of the Richmond Parkway and north of Interstate 580. The neighborhood extends east-west from Richmond Parkway to the Burlington Northern Santa Fe (BNSF) rail line, and north-south from Lincoln Avenue to Ohio Avenue. It is primarily a residential neighborhood with several schools, parks and other important community destinations. Elm Playlot, Richmond Greenway, Peres Elementary School, and Lincoln Elementary School are four key hubs in the neighborhood in addition to BART, Nevin Community Center, and other destinations. The existing roadways in the Iron Triangle neighborhood vary from “slow streets” with one lane of traffic in each direction to major arterials that provide regional access to destinations in Richmond, local freeways and BART.



Key Destinations

There are several important destinations accessible by foot within the Iron Triangle, including schools, parks, the Kaiser Permanente Hospital and Medical Center, and the Richmond BART/Amtrak Station. However, Elm Playlot serves as the key focal point for the neighborhood. Distances between these destinations range between a quarter to a full mile, which are considered walkable distances. For example, Peres Elementary School is located 1/4 miles from the Elm Playlot. Similarly, Nevin Community Center and Lincoln Elementary School are 1/4 mile apart, approximately a five minute walk. The Richmond BART station is just under a half mile from the Kaiser Hospital, about an eight minute walk.

Pedestrian Environment

Although sidewalk coverage is fairly continuous in the area, the condition of pedestrian facilities and the surrounding environment make for a challenging walking experience within the Iron Triangle neighborhood. Sidewalks are broken or missing along some of the Yellow Brick Road routes and uncomfortable conditions exist, such as abandoned buildings, squatters, dogs and litter. Creating a more inviting pedestrian environment will have a meaningful effect on the safety, comfort and mobility of Iron Triangle residents and visitors. Many of the “slow streets” identified as preferred walking routes cross major roadways, such as

Barrett and Macdonald Avenues, where additional enhancements to pedestrian crossings may be required. Many of the roadways that connect through the neighborhood feel like “fast streets” and observed speeds are high on these corridors.

Bicycle Facilities

The Iron Triangle’s flat, interconnected and low traffic streets provide a great environment for bicycling. The Richmond Greenway is an important asset for regional connectivity. The Greenway runs through the Iron Triangle just north of Ohio Avenue. Class II bicycle lanes are provided on western portions of Pennsylvania Avenue and Ohio Avenue. Class III sharrows are marked on the portion of Barrett Avenue west of the Kaiser Hospital and Medical Center. Providing comfortable, continuous facilities may encourage more people to bike in the neighborhood.

Transit Facilities

Macdonald Avenue and Harbour Way act as the main transit corridors through the study area, with bus routes also available on 7th Street and Barrett Avenue. AC Transit bus lines that run along the Yellow Brick Road include 71, 72M, 76, and 376. Bus stops along these routes offer very few stop amenities beyond benches at some of the locations. Additional lighting, seating, and overhead coverage will greatly improve the transit environment. The Richmond BART station is located at the northeast edge of the Iron Triangle, and is accessible via Macdonald Avenue, 16th Street, and Nevin Plaza with connections to multiple AC Transit bus lines and

Amtrak.

Bicycle & Pedestrian Collisions

Pedestrian and bicycle related collisions in the Iron Triangle neighborhood for the six year period from 2007 through 2012 was obtained through the Statewide Integrated Traffic Records System (SWITRS). A total of 68 bicycle and pedestrian-related collisions were reported at intersections and mid-block locations in the study area, with an equal amount involving bicycles (34) and pedestrians (34), as shown in Figure 2. A pedestrian death occurred in 2008 at the Carlson Boulevard and Ohio Avenue intersection.

The highest number of pedestrian collisions was reported along Macdonald Avenue (14) and Harbour Way (9), which accounted for two-thirds of all pedestrian collisions in the study area. The Marina Way and Macdonald Avenue intersection had the greatest number of collisions (4). Bicycle collisions were greatest along Macdonald Avenue (5), Bissell Avenue (4), and Barrett Avenue (4).

As compared to other areas in central Richmond, bicycle collisions are higher within the Iron Triangle neighborhood. The rise in collisions may partially be due to the higher volume of bicyclists that ride in the area; both the Richmond BART station and segments of the Richmond Greenway are within the study area. The number of pedestrian collisions within the triangle is similar to the other nearby neighborhoods in central Richmond.

TABLE 1 Intersections with Two or More Pedestrian or Bicycle Collisions - 2007 to 2012	
Intersection	Collisions Reported
Pedestrian Collisions	
Macdonald Avenue & Marina Way	3
Macdonald Avenue & 16th Street	3
Macdonald Avenue & 4th Street	3
Macdonald Avenue & Harbour Way	2
Harbour Way & Bissell Avenue	2
Harbour Way & Nevin Avenue	2
Harbour Way & Roosevelt Avenue	2
Pennsylvania Avenue & 7th Street	2
Bicycle Collisions	
7th Street & Lucas Avenue	2
Chanslor Avenue & Marina Way	2

Source: SWITRS 2007-2012

Overview

This section presents the design vision for the Yellow Brick Road network. The Yellow Brick Road is envisioned to be an interconnected network of safe and secure roadways where children, parents, and all members of the community can travel safely. The Yellow Brick Road streets are intended as important walking routes through the community and, in many cases, this coincides with important bicycle connections. The Yellow Brick Road routes are intended to create “slow streets” that are community focused and include the following key elements:

- Pedestrian and bicycle improvements, including considerations of safety, comfort, wayfinding, and crosswalk enhancements
- Traffic calming improvements, such as traffic circles, raised crosswalks, and speed tables
- Public art, including sculpture, murals, and painted intersections/streets
- Streetscape amenities and secure places, including street trees, bioswales and landscape plantings, benches, and garbage cans as well as pedestrian-scale street lighting and law enforcement

The following pages highlight the key distinctive features of the Yellow Brick Road routes.

Design Vision for Yellow Brick Road



Design Inspirations and Potential Treatments



Source: www.hubss.com



Source: City Labs

Source: City Labs



Source: flickr/Thanh Ha Dang



Source: flickr/Dylan Passmore



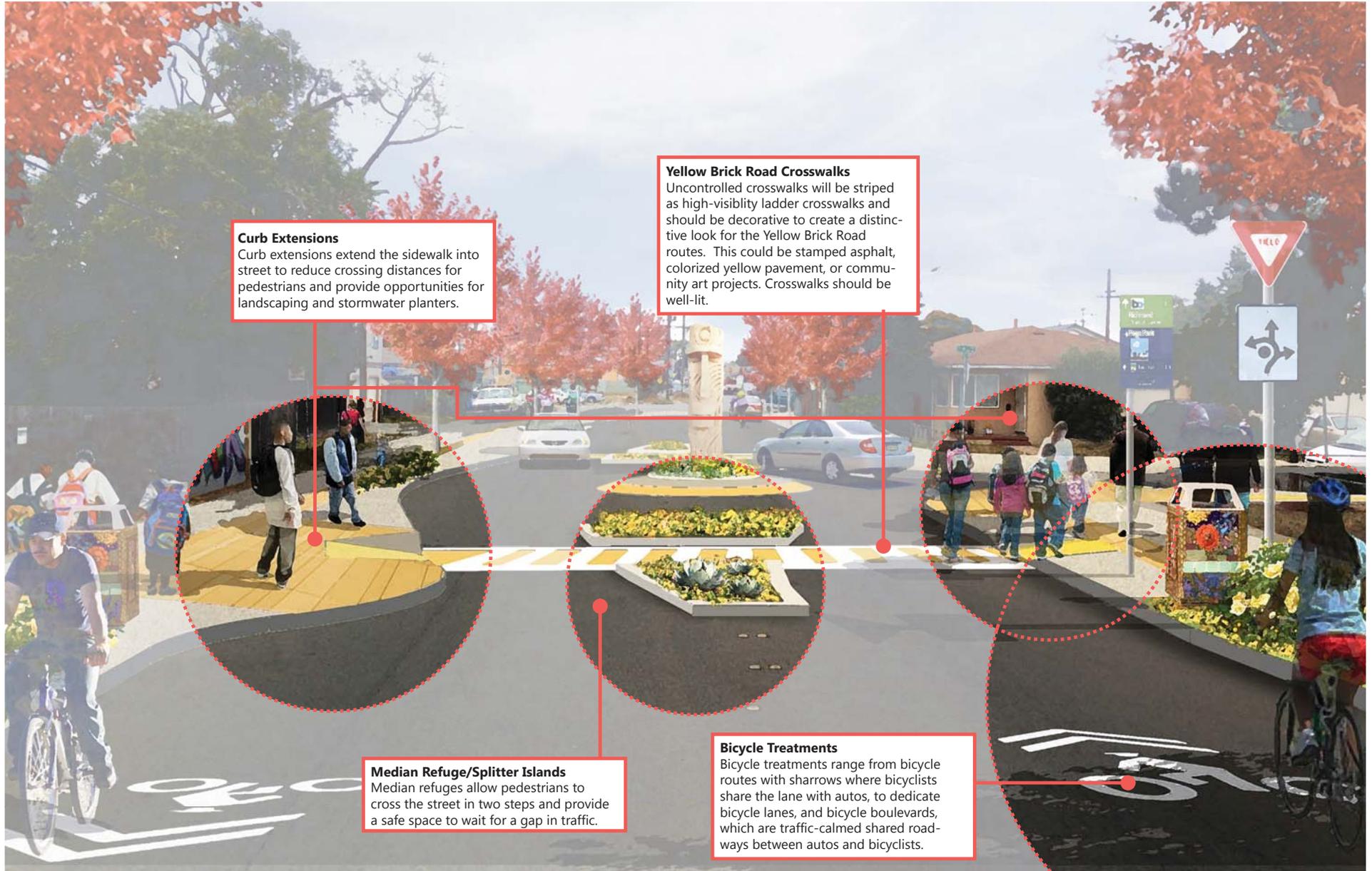
Source: flickr/Lara Justine



Source: flickr/Josh S Jackson



Pedestrian & Bicycle Improvements



Traffic Calming Improvements



Amenities



Bicycle & Pedestrian Wayfinding
Wayfinding signs provide directions and information on the amount of time needed to travel between key destinations.

Trash Cans, Benches, Bus Shelters
Streetscape amenities such as trash cans, benches, and bus shelters can help provide clean environments that provide comfortable places for people to pause and rest.

Public Art



Sculpture and Public Art
Sculpture and public art provide a venue for the community to showcase its local artists while also beautifying the pedestrian environment and creating comfortable, inviting place to walk. Roundabouts, traffic circles, and curb extensions all provide opportunities for art.

Painted Intersections, Crosswalks, and Murals
The distinctive Yellow Brick Road crosswalks and speed tables provide an opportunity for the community to complete painted crosswalks and intersections. While the crosswalks and intersections could be a literal "yellow brick" type of treatment, they can also be considered murals on the ground and can be painted between the white stripes as community art projects.

Overview

The Pogo Park Team and Community Outreach Team (COT) have been engaged in the Iron Triangle neighborhood long before this Plan, walking every street in the neighborhood, discussing key issues with local residents and business owners, and identifying issues and opportunities for improvements. Through the Yellow Brick Road/Iron Triangle Neighborhood Plan, their work has continued and has been supplemented with larger public outreach events including walking audits, temporary installation, and meetings with representatives from various City of Richmond departments and Contra Costa Health Services.

Outreach Events

March 2014 Community Walk Audit & Nighttime Walk

On March 6, 2014 Pogo Park and COT led a walking audit with City staff, the consultant team, and residents through the Iron Triangle neighborhood. Through this effort, key barriers, issues, and opportunities in the neighborhood were identified and mapped.

The following key themes were identified:

- **Code enforcement, security, and lighting issues:** Residents identified many locations with abandoned houses and empty lots, unsafe dumping along the streets, and reckless driving near schools. They also identified discomfort caused by aggressive dogs and crime hotspots. Improving police presence and enforcement, installing pedestrian-scale lighting, providing emergency phones, moving dogs to the backyard, and repurposing abandoned lots can help to improve the safety along the Yellow Brick Road routes.
- **Need for neighborhood greening:** The community expressed a need for improved greenery to provide shade, comfortable places to sit, and create a more comfortable and pleasant pedestrian experience. Opportunities for improvement include planting more trees, better tree maintenance, providing public seating areas, and creating incentives for residents to maintain their yards and sidewalk areas.
- **Improved sidewalks and enhanced crosswalks:** Broken sidewalks and missing crosswalks, particularly near schools and parks, were of major concern to the community. Repairing and maintaining the pedestrian network along the YBR is a key opportunity to improve circulation. Enhancing uncontrolled crosswalks at major intersections was another key issues.
- **Wayfinding to key destinations and highlighted YBR route:** Providing signage that guides pedestrians, bicyclists and drivers to key destinations within the Iron Triangle will help connect the community and improve the mobility for residents of all ages along the YBR. Another key feature could be flags, banners, art, signs, and other distinct elements that define the YBR routes, which could have a yellow brick motif.



May 2014 Walk Audit and Charrette

In May 2014, Pogo Park and the COT team hosted a two-day walking audit and charrette event with Dan Burden, who is a nationally-recognized leader in walkability and neighborhood transformation, and the consultant team. Dan worked with Pogo Park and COT to identify site-specific issues and opportunities and developed a series of preliminary improvement ideas for corridors around the neighborhood.

The following corridors were studied in depth:

- 8th Street/Elm Avenue
- 16th Street connecting the Greenway to BART
- Lucas Avenue
- Pennsylvania Avenue
- Ripley Avenue and Harbour Way

These concepts were used to inform the recommendations presented in this Plan.



October 2014 Living Preview Temporary Installation

In October 2014, the proposal for 7th Street and Elm Avenue were treated as a 48-hour temporary installation. 7th Street between Pennsylvania and Ripley Avenues and Elm Avenue between 7th and 8th Streets were treated with temporary striping, potted plants, totem pole art installations, and spray chalk to show the community the improvements proposed for the Elm to Peres Root Route. Many residents turned out for the event and showed broad support for the improvements. Many key Richmond stakeholders including Mayor Gayle McLaughlin and US Congressman George Miller also supported the event. The Richmond Fire Department also showed support for the project and worked closely with Pogo Park and the consultant team to field-test turning radii of their various fire trucks on the roundabout and traffic circle temporary installations. AC Transit buses were also field tested through the roundabout on 7th Street. These dimensions and measurements are reflected in the concept plans for the Elm Play Lot to Peres Elementary School Roots Route.

The following improvements were installed for the two-day installation:

- **Roundabout at 7th Street/Elm Avenue** — included potted plants and a totem pole art installation in the circle, splitter islands with high-visibility crosswalks, and curb extensions to reduce vehicle speeds through the intersection
- **Protected Walkway on 7th Street** — to close the existing sidewalk gap on the west side of the roadway a protected “curb” (landscape waddle) was installed
- **Bicycle Lanes on 7th Street** — parking was prohibited on the east side of the street and bicycle lanes were striped in both directions. Sharrows were striped through the roundabout.
- **Traffic Circle at 8th Street/Elm Avenue** — included a totem pole art installation in the circle and curb extensions to reduce auto speeds. Stop signs were covered to show how Yield control would work on all approaches.
- **“Play Street” on Elm Avenue** — Elm Avenue was blocked to vehicle traffic to allow for kids to play in the street and for the community event to take place. Pogo Park painted the streets to create artful images in the roadway.

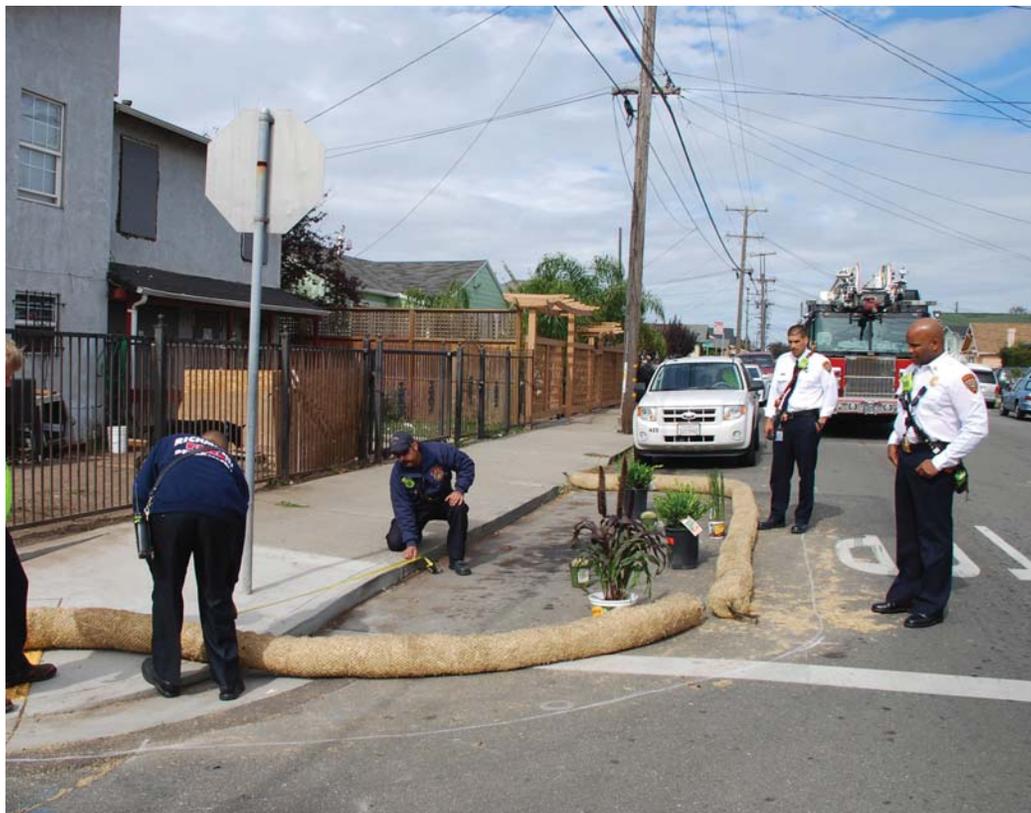


24 | Yellow Brick Road



January 2015 Community Workshop

On January 26, 2015, Pogo Park and the consultant team hosted an evening public workshop and dinner at the Elm Playlot. Participants included neighborhood residents, Pogo Park staff, City of Richmond staff, and other community members. The workshop consisted of a presentation focused on the “design toolkit” used to create the Yellow Brick Road vision. Participants had the opportunity to review concepts for the Elm to Peres, 8th Street, 16th Street, and Richmond Greenway routes. They also had the opportunity to review the full Yellow Brick Road network and the types of treatments proposed for the routes. Feedback was incorporated into the recommendations presented in this Plan.



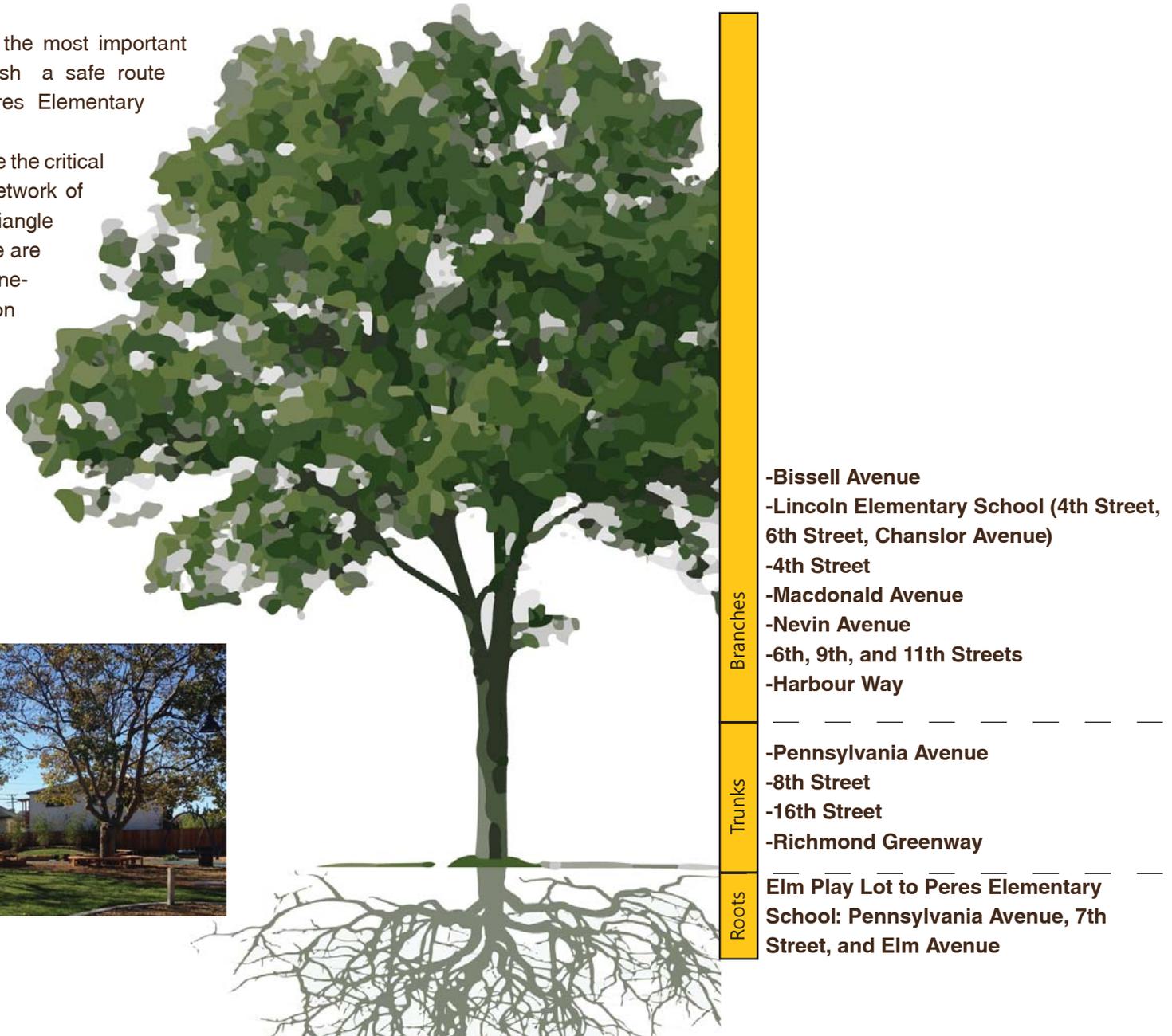
Yellow Brick Road Vision Network

Overview

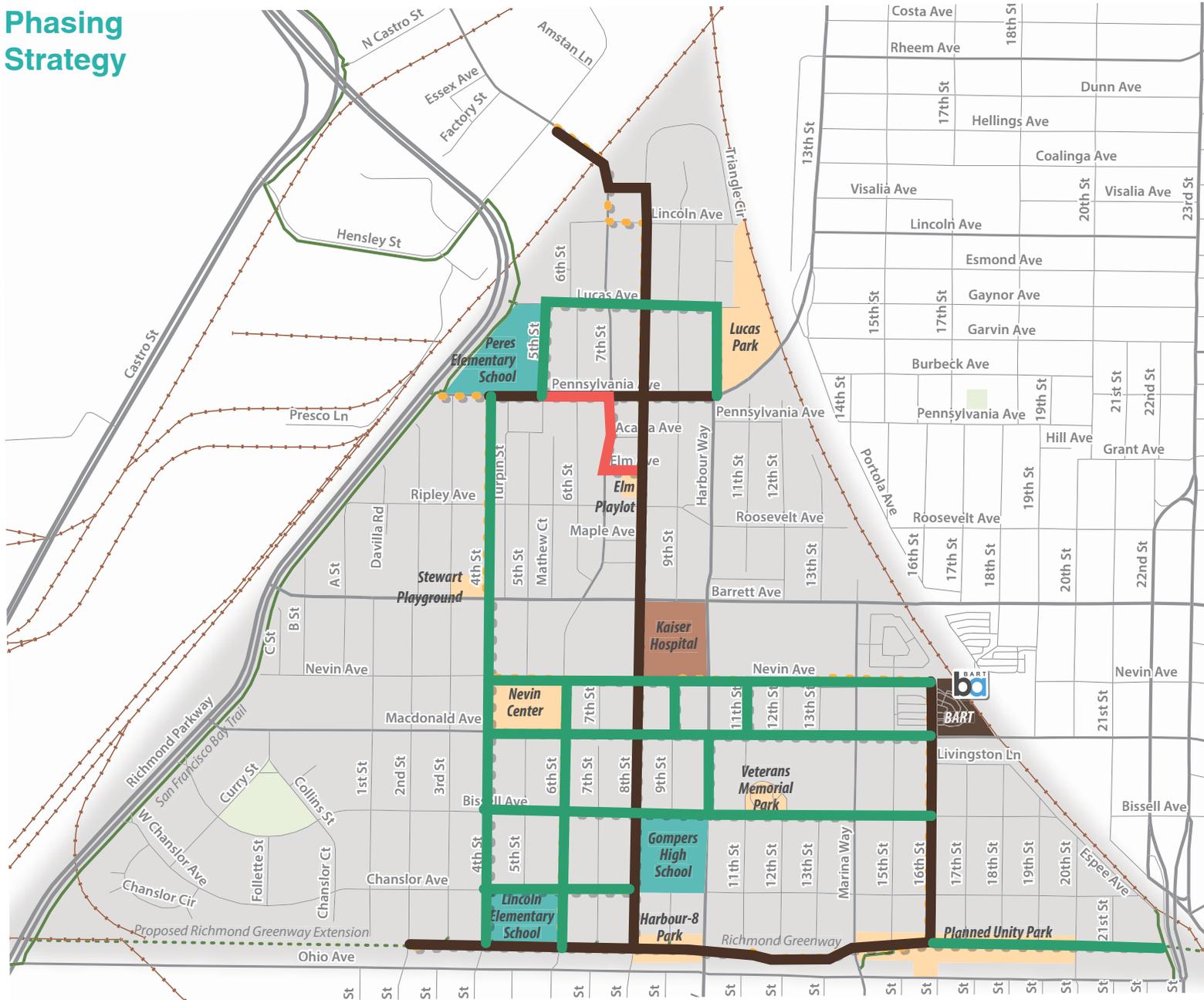
The Yellow Brick Road (YBR) vision network was established by the residents of the Iron Triangle neighborhood. The map at right shows the long term vision of the YBR network, with all routes implemented. As the network covers an extensive area, phasing for the project is necessary. The YBR vision network can be divided into three phases of the project, which can be likened to the parts of a tree:

- 1. The Roots: Phase 1** — This is the most important Yellow Brick Routes that establish a safe route between Elm Play Lot and Peres Elementary School
- 2. The Trunks: Phase 2** — These are the critical Phase 2 projects that create a network of YBR routes throughout the Iron Triangle
- 3. The Branches: Phase 3** — These are the Phase 3 routes that create a fine-grain network throughout the Iron Triangle

The beautiful large Elm trees at the Elm Play Lot provide the naming inspiration for the phasing strategy. The following chapters define the Root, Trunk, and Branch YBR routes in detail.



Yellow Brick Road Phasing Strategy



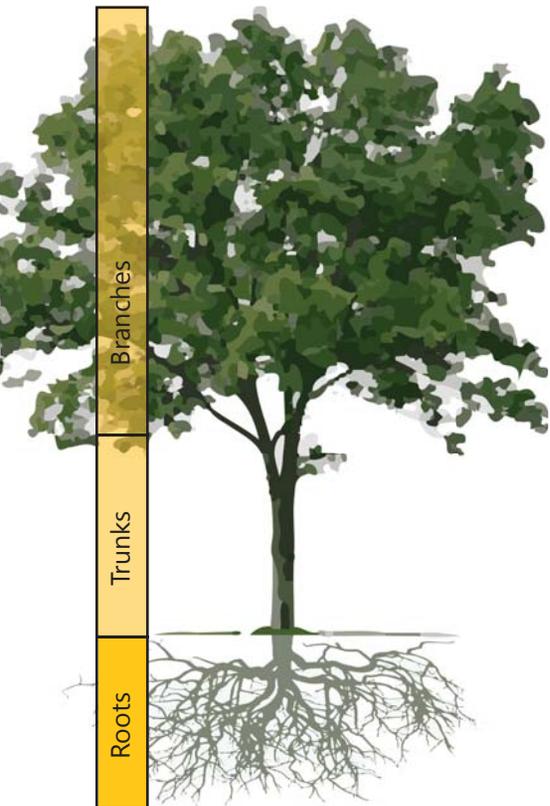
- LEGEND**
- School
 - Park
 - Iron Triangle Study Area
 - Root Route - Phase 1
 - Trunk Route - Phase 2
 - Branch Route - Phase 3
 - Existing Trail/Path
 - Proposed Trail/Path

Overview

The “Root Route” is envisioned to create the first phase of the Yellow Brick Road. The Root Route will provide a critical north-south route between Elm Playlot, located at the intersection of 8th Street and Elm Avenue, to Peres Elementary School, located near the intersection of Pennsylvania Avenue and 4th Street. This first Yellow Brick Route will build on recent community and City investments at the Elm Play Lot and on Pennsylvania Avenue. The Root Route consists of the following segments:

1. **Pennsylvania Avenue** — between 4th and 7th Streets
2. **7th Street** — between Pennsylvania and Elm Avenues
3. **Elm Avenue** — between 7th and 8th Streets

Design plans and a fact sheet are presented on the following pages.



Elm Play Lot to Peres Elementary School



Description

Through pedestrian, bicycle, and traffic calming improvements, this route would build on the revitalization of Elm Playlot and create a strong walking connections between Peres Elementary School and the Elm Playlot. As such, it is identified as the highest priority for the neighborhood and should be considered as a “demonstration project” for the Yellow Brick Road. The drawings shown for this project represent a “long-term” or “grant-funded” solution with permanent materials, such as concrete sidewalk and curb and gutter. However, there may be an opportunity to use interim design materials to more quickly and cost-effectively get safety improvements onto the ground using high-quality but low-cost materials, such as striping and landscape planters. A short-term solution should be considered as the design is detailed. The concept drawings have been reviewed in the field with the Richmond Fire Department during the Living Preview event. These drawings reflect the measurements and design elements (e.g. rolled curb or mountable curb) needed for various sized

Richmond fire trucks to operate through the area. **Detailed concept plans for the Elm to Peres route are presented in Appendix A.**

Cost

The project is expected to cost approximately, \$722,800, including soft costs and contingencies. **The detailed breakdown of unit costs, quantities, and soft costs is presented in Appendix A.** An interim design using temporary but attractive materials could cost significantly less than this and provide substantial safety and comfort benefits for pedestrians and bicyclists in the near-term before grant-funding for the permanent improvements can be secured.

Issues & Opportunities

- 7th Street has a wide cross-section which encourages high-speeds on this important pedestrian route
- Sidewalks are narrow (4' or less) on the west side of 7th Street
- 7th Street and Elm Avenue provide important

connections between Peres Elementary School and Elm Playlot

- Elm Avenue is a one-block long roadway that could be converted to a “slow street” or “play street” in front of Elm Playlot
- STOP-sign compliance is low at the 8th Street/ Elm Avenue intersections
- Improvements to this corridor can build off of the recent investments in Elm Playlot and serve as a catalyst for pedestrian improvements projects in the Iron Triangle neighborhood

Key Proposals

7th Street between Pennsylvania and Ripley Avenues

- Stripe Class II bicycle lanes in both directions
- Consider parking prohibition on east side of 7th Street to accommodate bicycle lanes or consider time of day bicycle lanes
- Maintain parking on west side of the roadway wherever possible
- Extend sidewalk on west side to provide

Elm Play Lot to Peres Elementary School

- comfortable walking area
- Maintain driveway access on west side of street with sidewalk extension and consolidate driveways if possible
- Yellow Brick Road Crosswalks: Colorized, stamped asphalt pattern of yellow bricks within all parallel crosswalks (raised and at-grade) on the route
- Pedestrian and Bicycle Wayfinding Signs: Use WCCTAC design guidelines and sign types to indicate distance to activity centers along the route like schools, parks, and BART
- Pedestrian-scale lighting
- Landscaping, stormwater planters, and trees wherever feasible, including roundabouts and traffic circles

Elm Avenue between 7th and 8th Streets

- Parking prohibition on south side of Elm Avenue between 7th Street and 20' east of 7th Street
- Convert parallel parking in front of Elm Playlot to back-in angled parking
- Parking prohibition on north side of the street
- Elm Avenue should feel like a “slow street” or “play street” adjacent to the park
- Street painting and art could be considered
- Yellow Brick Road Crosswalks: Colorized, stamped asphalt pattern of yellow bricks within all parallel crosswalks (raised and at-grade) on the route
- Pedestrian and Bicycle Wayfinding Signs: Use WCCTAC design guidelines and sign types to

indicate distance to activity centers along the route like schools, parks, and BART

- Pedestrian-scale lighting
- Landscaping, stormwater planters, and trees wherever feasible, including roundabouts and traffic circles

7th Street/Ripley Avenue Intersection

- Curb extensions onto Ripley Avenue
- Stripe crosswalk on north side of 7th Street

7th Street/Elm Avenue Intersection

- Roundabout to replace side-street STOP control intersection
- Ladder crosswalks across 7th Street on north and south side of roadway with splitter islands
- Splitter islands should be mountable, as shown on the concept plans, to accommodate Richmond Fire Department fire trucks and emergency vehicles
- Splitter islands should be a minimum of 6' feet in width at the pedestrian refuge to allow bicyclists and pedestrians with strollers to safely wait clear of the travel lane
- Curb on west side of the roundabout should be rolled to accommodate Richmond Fire Department fire trucks and other emergency vehicles
- Roundabout should include landscaping and art
- Sharrows through intersection and intersection approach to guide bicyclists

- Directional curb ramps wherever feasible

7th Street/Acacia Avenue Intersection

- Curb extensions onto Acacia Avenue on southeast and southwest corner
- Stripe high-visibility ladder crosswalk on south side of 7th Street
- Continue Class II bicycle lanes through intersection
- Directional curb ramps where feasible

8th Street/Elm Avenue Intersection

- Large curb extension on southwest side of intersection to shadow back-in angled parking
- Traffic circle with Yield-control at 8th Street/Elm Avenue to replace existing all-way Stop-control
- Curb extensions on all corners of intersections to create deflection through the intersection
- Landscaping and art in traffic circle and curb extensions, wherever possible

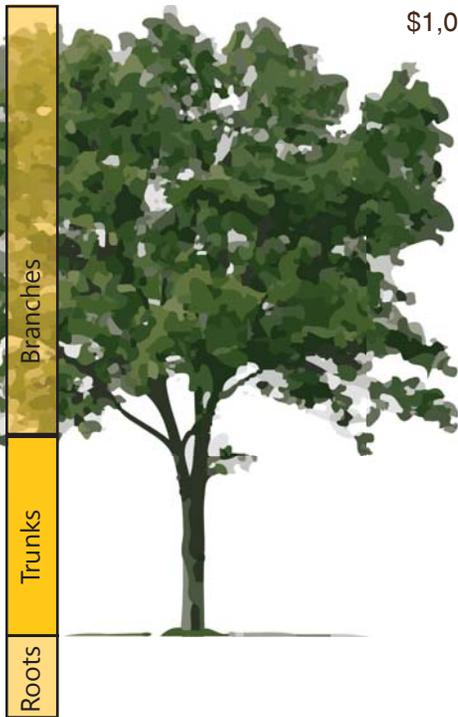
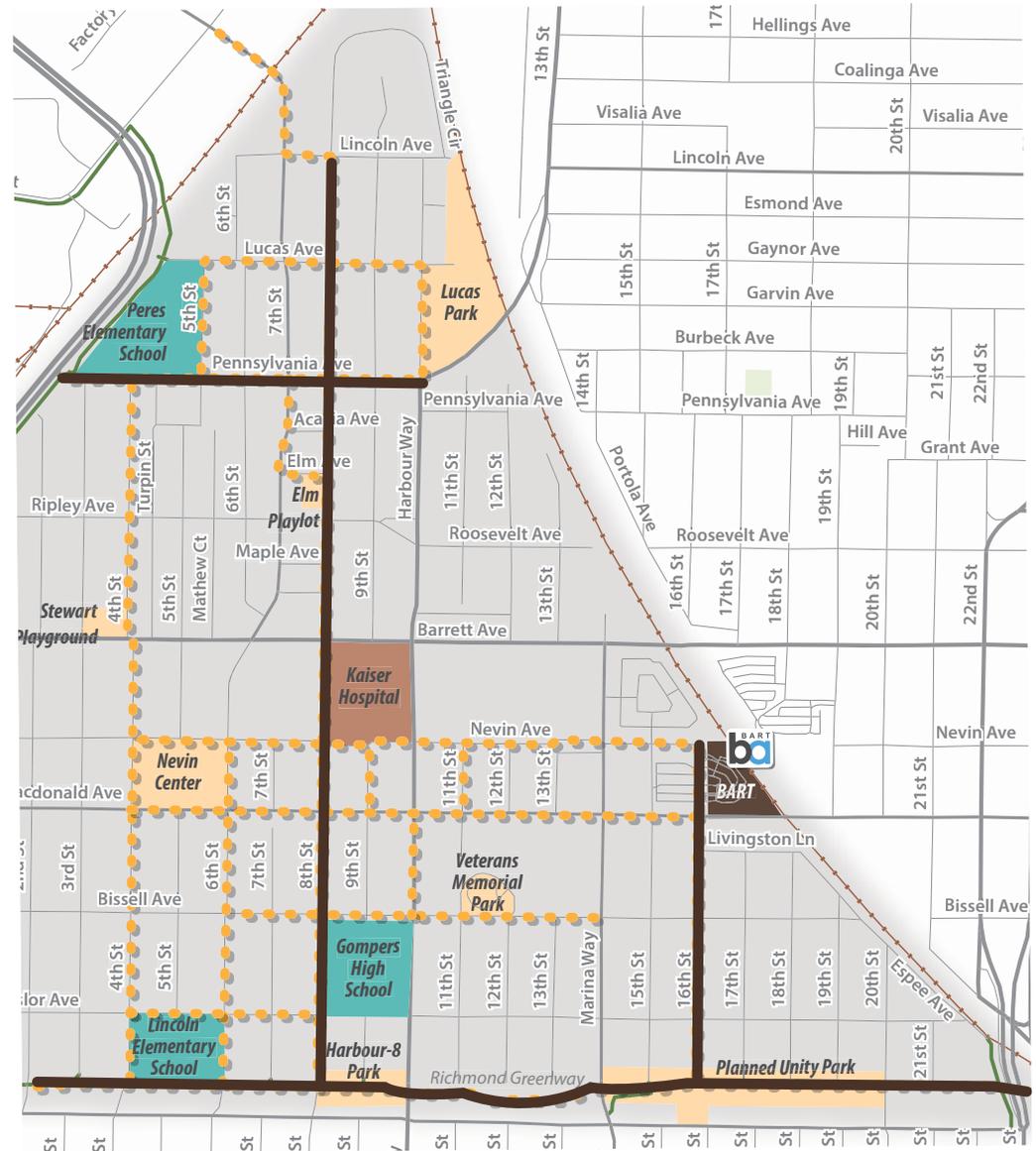


Overview

The “Trunk Routes” are envisioned to create a core network for the Yellow Brick Road. These are the second phase of the Yellow Brick Road. With the Elm Play Lot to Peres Elementary School route completed, the following four routes are anticipated to provide primary north-south and east-west connectivity throughout the Iron Triangle neighborhood:

1. **8th Street** — between Lincoln and Ohio Avenues
2. **16th Street** — between Macdonald Avenue and Richmond Greenway
3. **Pennsylvania Avenue** — between 4th Street and Harbour Way/13th Street
4. **Richmond Greenway** — Trail Crossings between 2nd Street and 23rd Street

Concept diagrams and fact sheets are presented for each Trunk Route project on the following pages. Project costs are relative planning level costs, where: \$ = less than \$500,000; \$\$ = \$500,001 to \$1,000,000, and \$\$\$ = greater than \$1,000,000.



8th Street



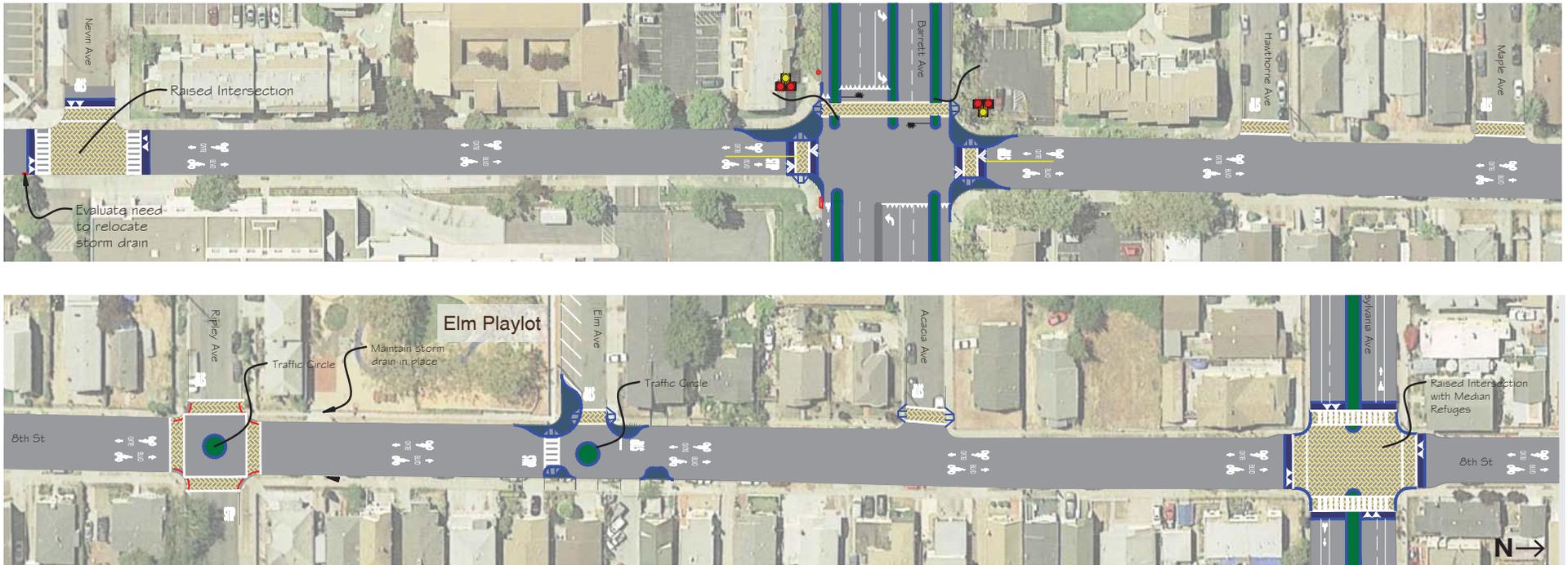
Description

8th Street is a low volume roadway that runs north-south through the Iron Triangle neighborhood, connecting residents to the Richmond Greenway, Gompers High School, and the Elm Playlot. Additionally, several other key destinations are located one to two blocks east or west of 8th Street, including Lincoln and Peres Elementary Schools, Richmond BART Station, Nevin Community Center, and Kaiser Hospital and Medical Center. 8th Street is a community-identified “walking route” or “slow street” through the Iron Triangle neighborhood. As such, improvements are focused on traffic calming and bicycle boulevard type treatments to enhance unsignalized crossings for bicyclists and pedestrians, reduce auto speeds, and improve the streetscape.

Cost

\$\$\$ - This is one of the highest cost projects in the network, as it includes significant traffic calming features to create slow walking street and bicycle boulevard. Key design features include raised intersections and crosswalks, which affect roadway drainage.





Issues & Opportunities

- Gompers High School: The newly reconstructed High School is located on both sides of 8th Street, which presents an opportunity to consider a special pedestrian zone on 8th along the school frontage as well as the gateways to the school at the intersections with Bissell Avenue and Chanslor Avenue
- Ohio Avenue: Existing intersection is skewed, which creates long crossing distances and unpredictable auto movements
- 7th Street is designated as a bicycle boulevard in the Richmond Bicycle Master Plan; however, with lower volume and speeds on 8th Street,

8th Street is considered as a preferred bicycle boulevard route.

- High turning movement speeds at some intersections, including Elm Avenue/8th Street
- Poor traffic control compliance at some all-way STOP intersections
- Difficult, long pedestrian crossings across multiple lanes of traffic at Barrett Avenue and Pennsylvania Avenue

Key Proposals

8th Street between Lincoln and Ohio Avenues

- Bicycle Boulevard signs and striping including oversized bicycle boulevard stencils

- Consider speed humps along corridor
- Yellow Brick Road Crosswalks: Colorized, stamped asphalt pattern of yellow bricks within all parallel crosswalks (raised and at-grade) on the route
- Yellow Brick Road Raised Intersections: Stamped asphalt with community-designed painted intersections
- Pedestrian and Bicycle Wayfinding Signs: Use WCCTAC design guidelines and sign types to indicate distance to activity centers along the route like schools, parks, and BART
- Pedestrian-scale lighting
- Landscaping and stormwater planters



8th Street between Lincoln Avenue and Triangle Court

- Work with property owners between 7th and 8th Streets to provide a mid-block connection between 7th Street/elevated rail tracks and Triangle Court
- Consider mid-block crosswalk and bicycle boulevard improvements on 8th Street through Triangle Court if mid-block improvements can be made

Ohio Avenue/8th Street Intersection

- Realignment of Ohio Avenue intersection to improve alignment with curb extensions

Richmond Greenway/8th Street Intersection

- Raised crosswalk with rectangular rapid flashing beacons (RRFBs)

Chanslor, Bissell, Nevin, and Lincoln Avenues Intersections with 8th Street

- Raised intersection with decorative paving
- Ladder crosswalks on 8th Street, and mark standard crosswalk across side-street

Macdonald Avenue/8th Street Intersection

- Install median noses at existing refuges

Barrett Avenue/8th Street Intersection

- Pedestrian Hybrid Beacon and decoative paving crosswalk on west side of Barrett Avenue, including curb extensions and a median refuge
- Speed tables/raised crosswalks with curb extensions on crosswalks across 8th Street

Ripley Avenue/8th Street Intersection

- Traffic circle with yield-control
- Ladder crosswalks with decorative paving

Elm Avenue/8th Street Intersection

- Traffic circle with yield-control
- Ladder crosswalks with decorative paving
- Large curb extension shadowing back-in angled parking on the southwest corner

Pennsylvania Avenue/8th Street Intersection

- Raised intersection with decorative paving
- Landscaped medians with refuges on east and west crosswalks across Pennsylvania

Lucas Avenue/8th Street Intersection

- Traffic circle with yield control



- Ladder crosswalks with decorative paving
- Curb extensions on northwest and southeast corners to correct intersection offset

16th Street

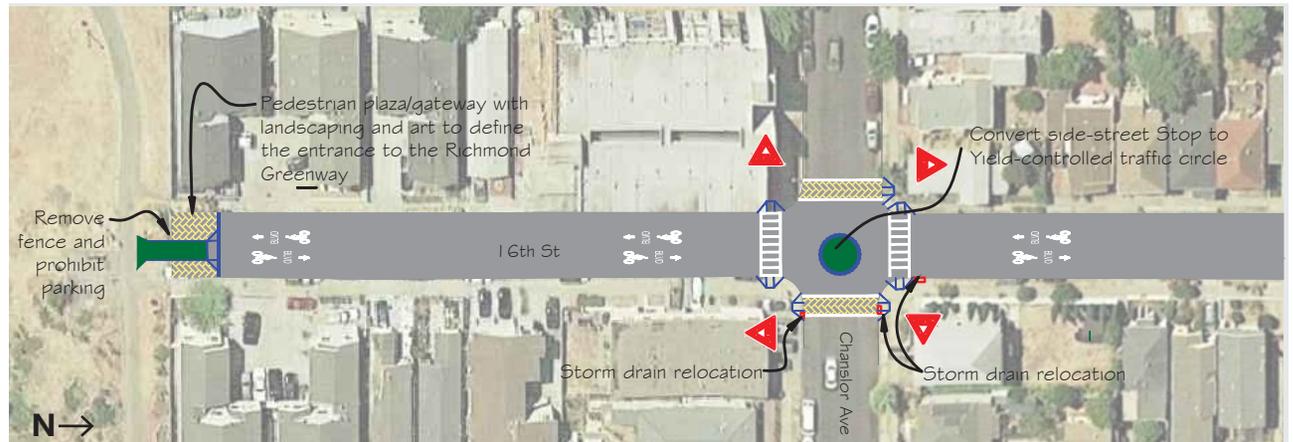


Description

16th Street is a key connection between the Richmond BART station and the Richmond Greenway and serves as a key walking route to access both destinations from adjacent neighborhoods. Improvements on this corridor would improve the aesthetics of the pedestrian facilities by adding Yellow Brick Road crosswalks, enhancing the sidewalk landscaping, and installing a pocket park at the entrance to the Richmond Greenway.

Cost

\$ - This is one of the lower cost projects in the network, as it is a short segment of roadway. Significant curb work, which can affect drainage, is proposed, including the gateway/path at the Greenway and the raised crosswalks at Bissell Avenue.



Issues & Opportunities

- **Sidewalking Parking:** Due to narrow roadway widths and a desire to keep autos out of street, cars are often parked on the sidewalk or blocking the sidewalk in short driveways
- **Landscape Sidewalk Buffer:** a landscape zone exists on 16th Street sidewalks, and residents in some blocks maintain the

landscape strip while in others it has been paved over or is dirt. Opportunities exist to enhance existing landscape strip with low maintenance plants

- **Parked Cars at Greenway Entrance:** residents park perpendicularly against the entrance to the greenway, which blocks access for bicyclists and pedestrians and can create an unwelcome



feel to the Greenway. Prohibiting parking could allow for creation of a Greenway Gateway, community garden, or pedestrian plaza.

- **Existing Curb Extension at Macdonald Avenue:** the existing southwest curb extensions tapers onto Macdonald Avenue, creating longer crossing distances and an inconsistent pedestrian environment. Large turning radii is needed to accommodate buses coming out of BART.
- **Bicycle Boulevard Designation:** 16th Street is designated a proposed bicycle boulevard in the Richmond Bicycle Master Plan
- **Traffic Control:** Stop signs on 16th Street favor side-street traffic instead of bicycle boulevard traffic, causing bicyclists to start and stop

Key Proposals

16th Street between Richmond Greenway and Macdonald Avenue

- Bicycle boulevard signs and striping, including oversized bicycle boulevard stencils
- Replace existing landscape strip with bioswales

and street trees, as width allows

- Yellow Brick Road Crosswalks: Colorized, stamped asphalt pattern of yellow bricks within all parallel crosswalks (raised and at-grade) on the route
- Yellow Brick Road Raised Intersections: Stamped asphalt with community-designed painted intersections
- Pedestrian and Bicycle Wayfinding Signs: Use WCCTAC design guidelines and sign types to indicate distance to activity centers along the route like schools, parks, and BART
- Pedestrian-scale lighting along corridor
- Landscaping and stormwater planters in curb extensions

Macdonald Avenue Intersection

- Curb extension on northwest corner of Macdonald Avenue/BART that accommodates AC Transit buses making the southbound right-turn onto Macdonald from the BART Station.

Livingston Avenue Intersection

- Raised crosswalk with decorative paving across Livingston Avenue

Bissell Avenue Intersection

- Raised crosswalks (or raised intersection) with decorative paving across Bissell Avenue
- Ladder crosswalks across 16th Street
- Curb extensions onto 16th Street at each corner

Chanslor Avenue Intersection

- Traffic circle with yield control
- Ladder crosswalks on all approaches

Richmond Greenway Cul-de-Sac/Intersection

- New pocket park at Richmond Greenway with gateway signage and community art installation
- Prohibit parking at cul-de-sac to accommodate pocket park

Pennsylvania Avenue



Description

Pennsylvania Avenue is a primary route for Peres Elementary School families. It is also a key connection between the School and Elm Playlot. Pennsylvania Avenue cul-des-sacs at the Richmond Parkway and extends east to Harbour Way, where it becomes 13th Street/Rumrill Boulevard. Substantial school pick-up and drop-off occurs on Pennsylvania Avenue and 4th Street along the school frontage. Many parents make mid-block U-turns across Pennsylvania Avenue. A four- to three-lane reduction occurred in 2012, which striped bicycle lanes and a center left-turn lane.

This project would colorize the existing Class II bicycle lanes along the school frontage, create a raised, landscaped median to provide pedestrian refuges at crosswalks, prevent mid-block U-turns, and improve the landscaping and aesthetics of the streetscape. Traffic calming improvements are also proposed, including raised intersections, raised crosswalks, and a single-lane roundabout at Turpin Court, adjacent to the school entrance. Yellow Brick Road wayfinding, colorized/stamped crosswalks, pedestrian-scaled



lighting, and art would be located along the corridor.

Cost

\$\$\$ - This is one of the higher cost projects in the network, as it includes significant traffic calming features to create a slower street. Key design features include a roundabout, multiple raised intersections and crosswalks, and a raised median, all of which affect roadway drainage, move curbs, and introduce landscaping.

Issues & Opportunities

- Harbour Way is a difficult intersection to navigate as a pedestrian with multiple right-turn slip lanes and could be realigned to improve accessibility, for which the Rumrill Boulevard/13th Street Complete Streets Study will refine recommendations
- Consider roundabout at Pennsylvania/Turpin Court to facilitate pick-up/drop-off turning movements along the school frontage

Key Proposals

Pennsylvania Avenue between Richmond Parkway and Harbour Way

- Raised, landscaped median between 4th and Harbour Way, with stormwater planters
- Green painted bicycle lane to highlight potential conflicts between bicycles and autos along the school frontage during pick-up and drop-off activity
- Yellow Brick Road Crosswalks: Colorized, stamped asphalt pattern of yellow bricks within all parallel crosswalks (raised and at-grade) on the route
- Yellow Brick Road Raised Intersections: Stamped asphalt with community-designed painted intersections
- Pedestrian and Bicycle Wayfinding Signs: Use WCCTAC design guidelines and sign types to indicate distance to activity centers along the route like schools, parks, and BART
- Pedestrian-scale lighting

Bay Trail/Richmond Parkway Intersection

- Stripe sharrows connecting to path entrance
- Prohibit parking in front of the path entrance

Turpin Court Intersection

- Roundabout with decorative pavement and ladder crosswalks and splitter islands
- Install “escape ramps” from bicycle lanes onto sidewalk for those who do not feel comfortable riding through the roundabout
- Utilize roundabout to facilitate school drop-off/pick-up and allow U-turns

4th and 9th Streets Intersections

- Raised crosswalks with decorative paving across side-street

5th and 7th Streets Intersection

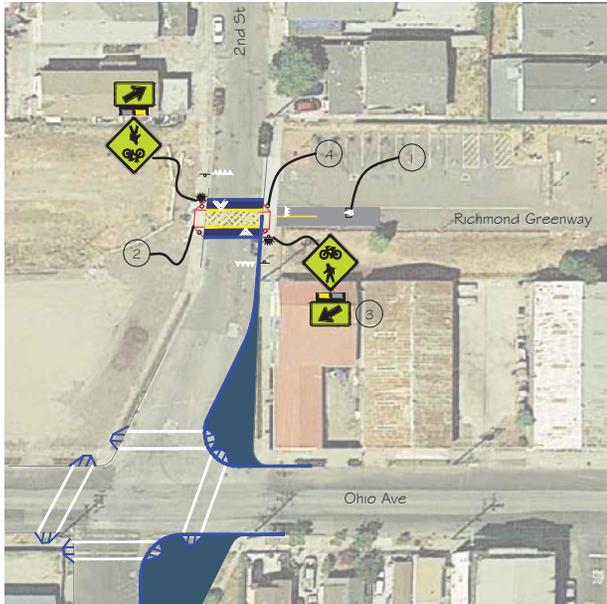
- Curb extensions onto 5th and Pennsylvania on all corners
- Ladder crosswalks across Pennsylvania and decorative stamped crosswalks across side-street

6th and 8th Streets Intersection

- Raised intersection with decorative paving
- Ladder crosswalks across Pennsylvania
- Standard crosswalks across side-streets
- Landscaped median refuges on east and west crosswalks



Richmond Greenway



Description

The Richmond Greenway is an important community asset and an east-west connection that runs through the entire Iron Triangle neighborhood. To the east, plans are in place to connect it with the Ohlone Greenway to connect to multiple East Bay communities. With Pogo Park’s work on Harbour 8 Park and other park planning efforts, the Greenway is also an important neighborhood destination. Signs and beacons on the Greenway are often confusing to trail users and some crossing distances are long. Improvements on this route would improve crossings with Rectangular Rapid Flashing Beacons (RRFBs) with detection for both pedestrians and bicycles in addition to raised crosswalks/speed tables to decrease speed of approaching vehicles and emphasize the priority



of trail users.

Cost

\$\$ - This is a relatively low cost project. The traffic calming features, including raised crosswalks and significant curb extensions to correct offsets at Ohio Avenue, require curb work and may affect roadway drainage.

Issues & Opportunities

- **Existing Flashing Beacons:** While existing flashing beacons are in place, there is confusing, non-standard signage that creates confusion between trail users and drivers to who has priority and whether or not the beacons are activated.
- **Long Crossings at Some Locations:** At Harbour Way, a median refuge could be installed to allow trail users to cross in two stages and provide a safe space to wait



for a gap in oncoming traffic.

- **Skewed Ohio Avenue Intersections at 2nd, 6th, and 8th Streets:** realign intersection to narrow intersection and address the intersection offset to reduce speeds and clarify expectations between all modes.
- **Greening and Landscaping along the Greenway:** build off the recent investments from Harbour 8 Park. Irrigation equipment was stolen and should be restored.

Key Proposals

Richmond Greenway between 2nd Street and Harbour Way

- **Yellow Brick Road Trail Crossings:** Colorized, stamped asphalt pattern of yellow bricks within all parallel crosswalks (raised and at-grade) on the route. Install rectangular rapid flashing beacons (RRFBs) with high-visibility trail crossing sign assembly (W11-15 and W11-15p or similar) at all trail crossings
- **Pedestrian and Bicycle Wayfinding Signs:** Use WCCTAC design guidelines and sign types to indicate distance to activity centers along the route like schools, parks, and BART



- Pedestrian-scale lighting
 - Landscaping and stormwater planters
- 2nd, 4th, 6th, and 8th Streets Intersections**
- Raised trail crossing with decorative paving and rectangular rapid flashing beacons (RRFBs)
 - Advanced yield markings and install “Yield Here to Pedestrian” signs at all crosswalk approaches

Harbour Way Intersection

- Raised trail crossing with decorative paving and rectangular rapid flashing beacons (RRFBs)
- Advanced yield markings and install “Yield Here to Pedestrian” signs at all crosswalk approaches
- Install raised median refuge
- New Class II bicycle lanes on Harbour Way to access the trail

Ohio Avenue Intersection

- Curb extensions at intersections of Ohio Avenue with 2nd Street, 6th, and 8th Street to address skewed intersections, create clear expectations, and to reduce speeds through the intersections



Overview

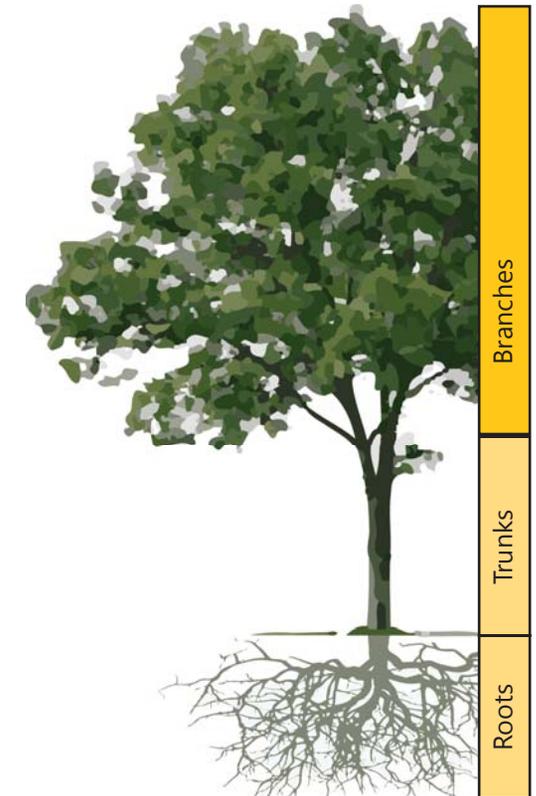
The “Branch Routes” are envisioned to create a finer grain Yellow Brick Road network, to fill in the gaps between the Roots and Trunk Routes. These are the third phase of the Yellow Brick Road. With the basic network in place, the following routes are anticipated to provide important secondary routes throughout the Iron Triangle:

1. **Lincoln Elementary School** — Chanslor Avenue, 4th Street, and 6th Street
2. **Lucas Avenue** — between 5th Street and Harbour Way
3. **Bissell Avenue** — between 4th Street and 16th Street

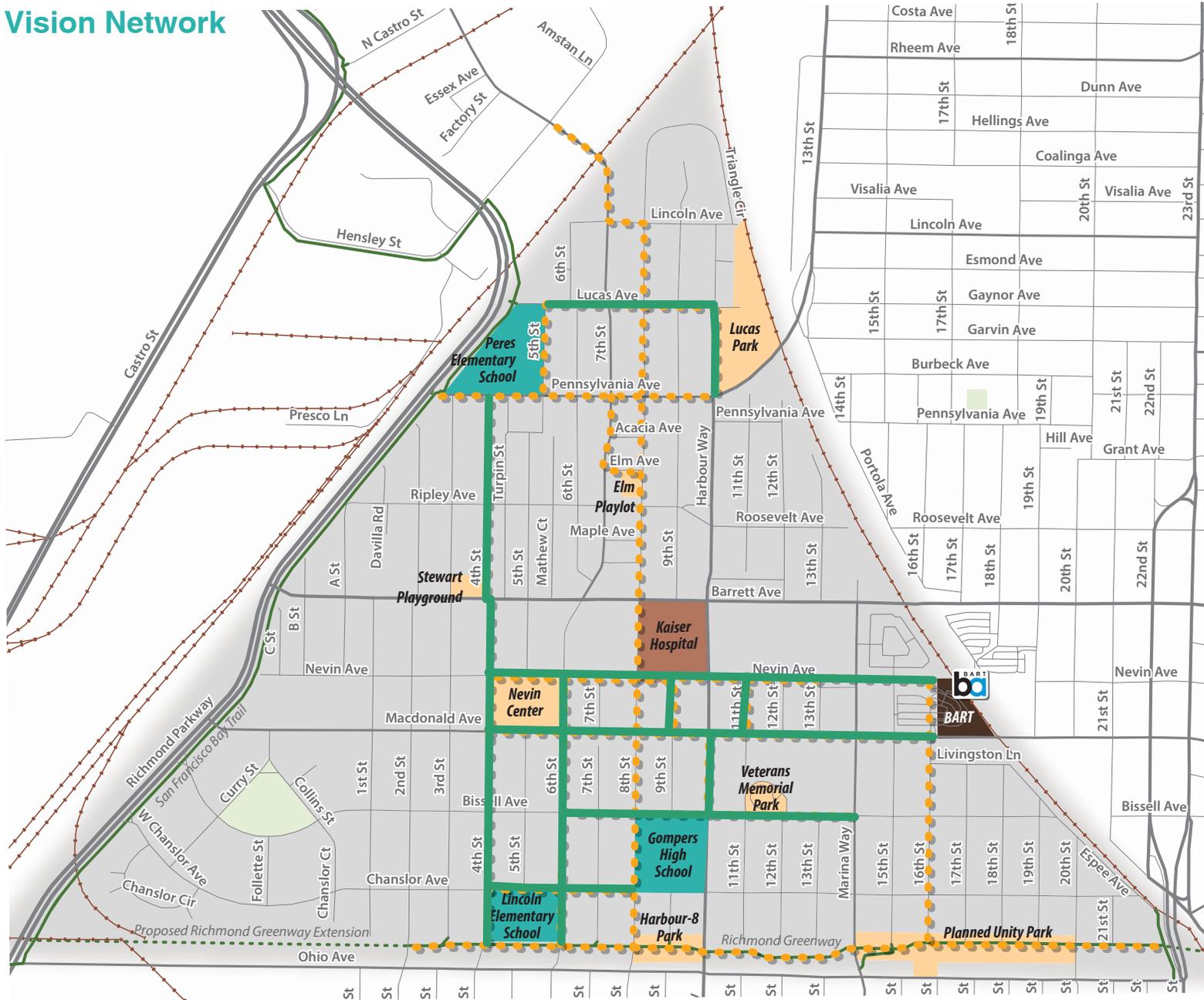
Concept diagrams and fact sheets are presented for each Trunk Route project on the following pages.

Additional Branch Routes

Macdonald Avenue, Nevin Avenue, 6th Street, 9th Street, Harbour Way, and 11th Street are additional Branch Routes in the Yellow Brick Road network. Macdonald Avenue, Nevin Avenue, 6th Street, and Harbour Way have proposed improvements and have been studied in further detail in the Richmond Bicycle Master Plan, Richmond Pedestrian Plan, and/or Richmond Livable Corridors. Plans for these roadways and the short segments of 9th and 11th Streets should include the range of treatments presented in the Design Guidelines section of this Plan.



Yellow Brick Road Vision Network



- Legend**
-  Yellow Brick Road Routes
 -  School
 -  Park
 -  Iron Triangle Study Area
 -  Branches
 -  Existing Trail/Path
 -  Proposed Trail/Path

Lincoln Elementary School (Chanslor Avenue & 6th Street)

Description

Lincoln Elementary School is one of two neighborhood elementary schools in the Iron Triangle neighborhood. It is located adjacent to the Richmond Greenway, Chanslor Avenue, 4th Street, and 6th Street, all of which serve as important safe routes to school. Many parents and children walk to this school along Chanslor Avenue and although crosswalks are provided, additional pedestrian enhancements would improve the safety for school children using this route. Improvements in this area would narrow the crossing distances across Chanslor Avenue by adding median refuges and curb extensions. A raised intersection at Chanslor Avenue and 4th Street would emphasize the priority of pedestrians and reduce vehicle speeds.

Cost

\$\$ - This project involves curb work and traffic calming treatments which may affect drainage, including raised intersections and median refuges.

Issues & Opportunities

- **Vacant Parcels/Abandoned Buildings:** Several parcels and abandoned buildings along 5th Street and Chanslor Avenue could be rehabilitated and reactivated to create positive, attractive buildings adjacent to the school
- **Circulation Along School Perimeter:** Adding a pedestrian entry on 4th Street, along with a designated curbside drop off zone, could distribute school pick-up/drop-off and enhance connectivity of the pedestrian network, reducing distances for students walking to school from the south and west

Key Proposals

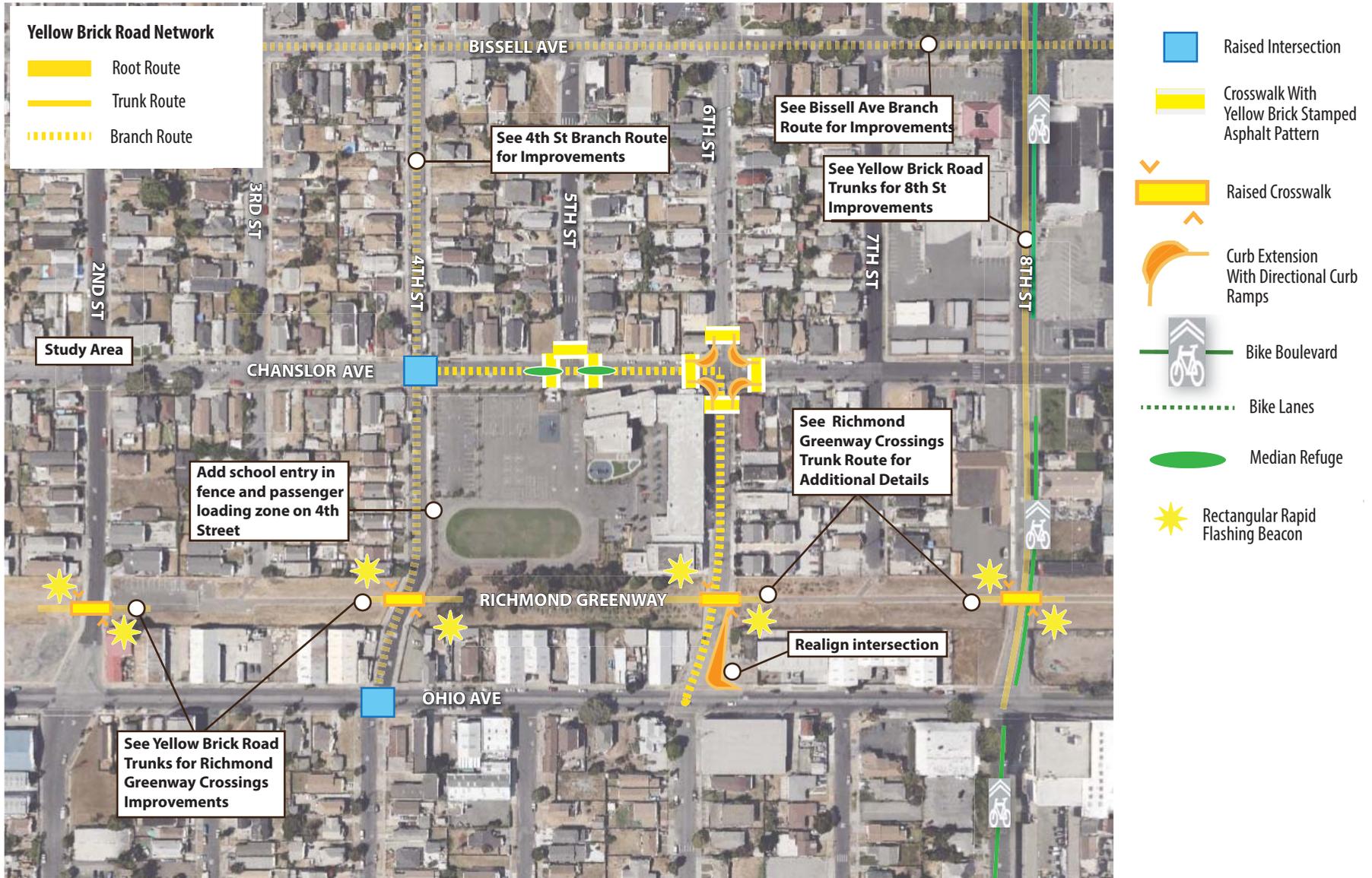
4th Street, 5th Street, Chanslor Avenue, and Ohio Avenue

- Work with other City agencies to rehabilitate vacant and abandoned properties
- Yellow Brick Road Crosswalks: Colorized, stamped asphalt pattern of yellow bricks within all parallel crosswalks (raised and at-grade) on the route
- Yellow Brick Road Raised Intersections: Stamped asphalt with community-designed painted intersections
- Pedestrian and Bicycle Wayfinding Signs: Use WCCTAC design guidelines and sign types to indicate distance to activity centers along the route like schools, parks, and BART



- Landscaping and stormwater planters
 - Pedestrian-scale lighting
 - Landscaping and stormwater planters
- #### 5th Street/Chanslor Avenue Intersection
- Decorative crosswalks on all approaches
 - Median refuges for crosswalks across Chanslor Avenue
- #### 6th Street/Chanslor Avenue
- Decorative crosswalks on all approaches
 - Curb extensions on all corners
- #### 4th Street/Chanslor Avenue and 4th Street/Ohio Avenue Intersections
- Raised intersection with decorative paving

Lincoln Elementary School Proposed Improvements



Lucas Avenue

Description

Lucas Avenue is a residential street that runs east to west in the Iron Triangle neighborhood. The street ends with direct connections to pedestrian attractors on either end - Lucas Park on the east side and Peres Elementary School on the west side — and is fully contained within the Iron Triangle neighborhood with no outside connections for vehicles. Improvements on this route would improve offset intersections by adding curb extensions or traffic circles as well as add parallel Yellow Brick Road crosswalks to the route.

Cost

\$\$ - This is a relatively low cost project primarily consisting of stamped asphalt and crosswalk striping. Traffic circle require landscaping and curb work which could affect drainage.

Issues & Opportunities

- **Offset/Skewed Intersections:** There are offset intersections along Lucas Avenue at 6th, 7th, and 8th Streets. Offset intersections disrupt a straight path for pedestrians and can cause long crossings at unmarked locations and confusion for drivers
- **Traffic Circles and Curb Extensions:** These tools can channelize vehicles along a predictable path and slow traffic down for pedestrians
- **Safe Routes to School:** Opportunity to create a safe route to school along Lucas Avenue from residents coming from north of the school

Key Proposals

Lucas Avenue between 5th Street and Harbour Way

- Yellow Brick Road Crosswalks: Colorized, stamped asphalt pattern of yellow bricks within all north-south crosswalks to highlight safe route to school along Lucas Avenue and 8th Street
- Pedestrian and Bicycle Wayfinding Signs: Use WCCTAC design guidelines and sign types to indicate distance to activity centers along the route like schools, parks, and BART



- Pedestrian-scale lighting
- Landscaping and stormwater planters

6th Street Intersection

- Traffic circle with Yield control on all approaches and landscaping
- Decorative paving in ladder crosswalks across 6th Street
- Traffic circle may be a dumbbell or similar configuration to account for the large intersection offset
- Install public art and landscaping in traffic circle while maintaining good sight lines between drivers, pedestrians, and bicyclists

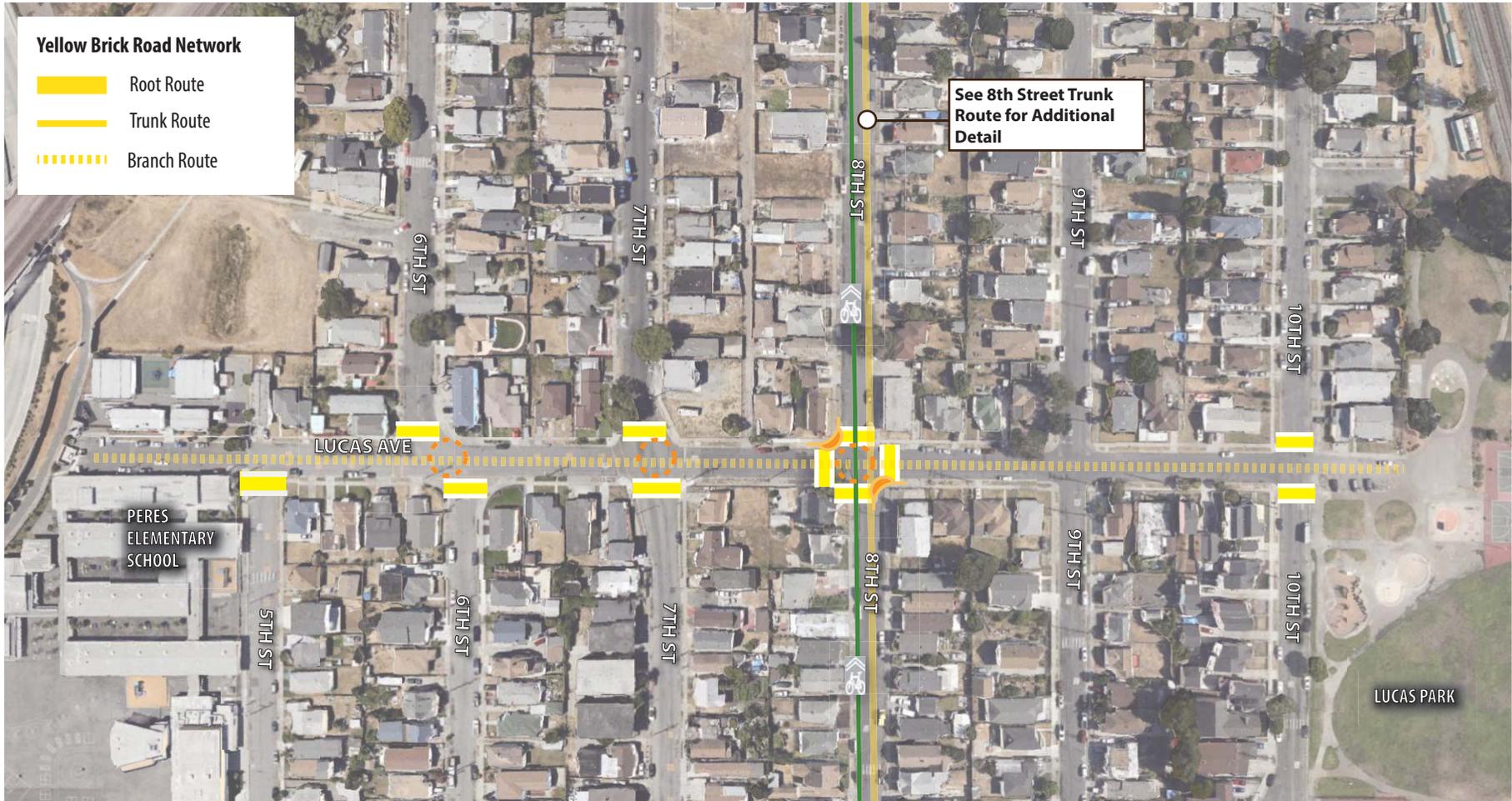
7th Street Intersection

- Traffic circle with Yield control on all approaches and landscaping
- Decorative paving with ladder crosswalks across 7th Street
- Install public art and landscaping in traffic circle while maintaining good sight lines between drivers, pedestrians, and bicyclists

8th Street Intersection

- Traffic circle with Yield control on all approaches and landscaping
- Decorative paving with ladder crosswalk across 8th Street
- Install curb extensions with stormwater planters/green infrastructure on northwest and south
- Install public art and landscaping in traffic circle while maintaining good sight lines between drivers, pedestrians, and bicyclists

Lucas Avenue Proposed Improvements



Bissell Avenue

Description

Bissell Avenue connects a variety of uses including residential and commercial, as well as parks, schools and churches. This route crosses multiple designated Yellow Brick Road routes such as 4th, 8th, and 16th Streets. Improvements on this route would improve pedestrian safety and access to Veterans Memorial Park by installing Rectangular Rapid Flashing Beacons (RRFBs) at the existing crosswalk at one end of Bissell Way and raising the offset intersection on the other end. Curb extensions at some of the major intersections along the route would reduce crossing distances and improve visibility of pedestrians.

Cost

\$\$\$ - This project involves curb work and traffic calming treatments which many affect drainage, including raised intersections and curb extensions.

Issues & Opportunities

- **Commercial Loading:** Large trucks can block the sidewalk at commercial loading zones near Veterans Memorial Park
- **Uncontrolled Crosswalks:** East of 7th Street, many crosswalks are uncontrolled along Bissell Avenue. Depending on volumes and speeds, these may be candidates for further enhancements, including high-visibility ladder striping and, at higher volume and speed crossings, rectangular rapid flashing beacons (RRFBs)

Key Proposals

Bissell Avenue between 4th Street and 16th Street

- Yellow Brick Road Crosswalks: Colorized, stamped asphalt pattern of yellow bricks within all parallel crosswalks (raised and at-grade) on the route
- Yellow Brick Road Raised Intersections: Stamped asphalt with community-designed painted intersections
- Pedestrian and Bicycle Wayfinding Signs: Use WCCTAC design guidelines and sign types to indicate distance to activity centers along the route like schools, parks, and BART
- Pedestrian-scale lighting
- Landscaping and stormwater planters

4th Street Intersection

- Replace existing all-way Stop intersection at 4th Street with traffic circle with Yield control on all approaches
- Stripe ladder crosswalks at all approaches

6th Street, Harbour Way, and Marina Way Intersections

- Install curb extensions with stormwater planters/green infrastructure
- Decorative paving crosswalks across side-streets

8th Street and Bissell Way Intersections

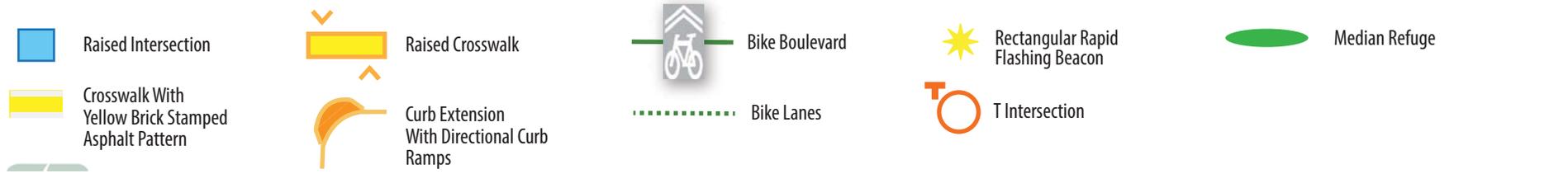
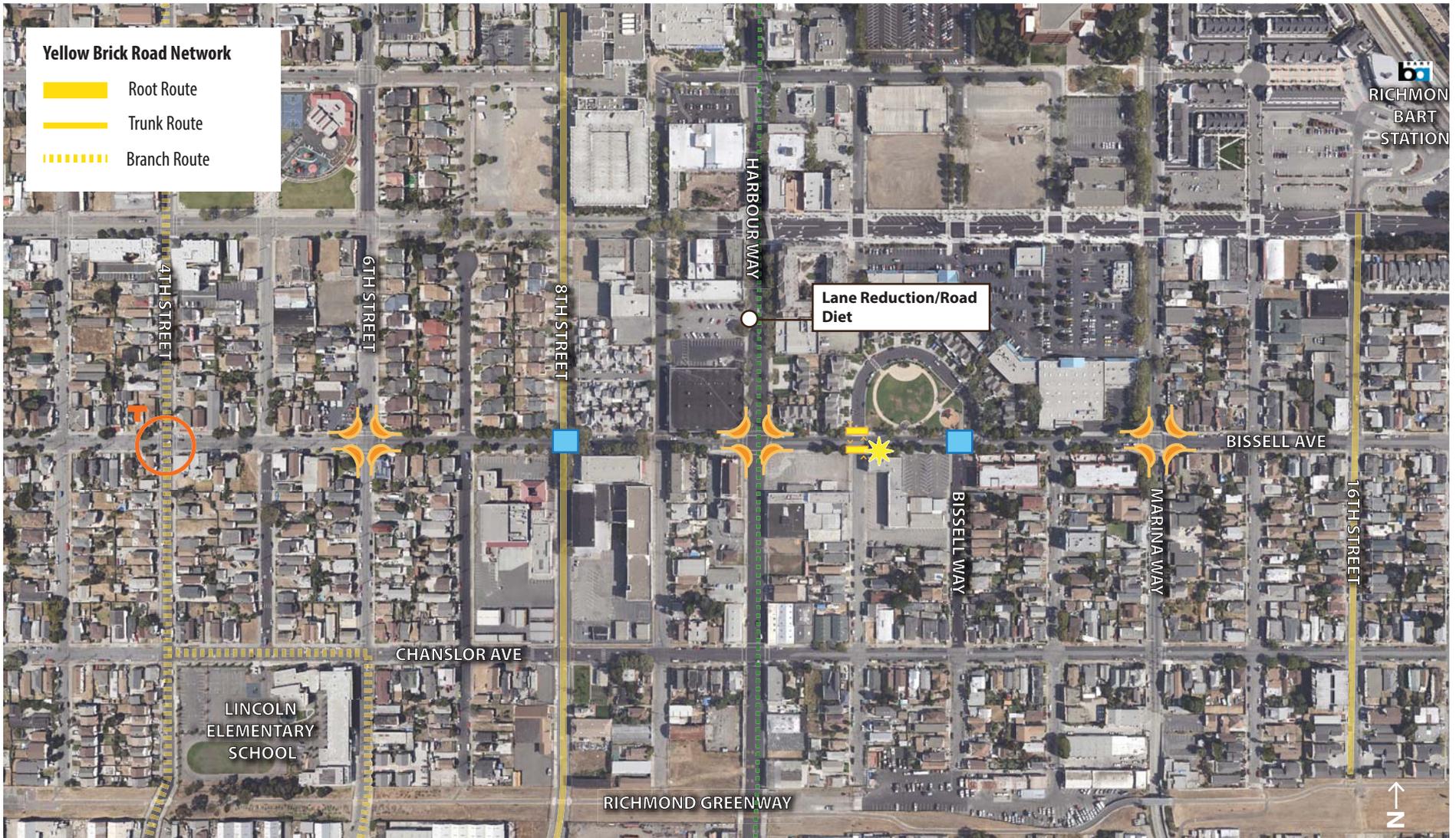
- Install raised intersections to reduce speeds and prioritize pedestrians
- Decorative paving crosswalks across side-streets

11th Street Intersections

- Install raised crosswalks with decorative paving across 11th Street
- Consider enhancing existing uncontrolled crosswalk across Bissell Avenue with Rectangular Rapid Flashing Beacon (RRFB)



Bissell Avenue Proposed Improvements



Branches

4th Street

Description

The 4th Street YBR Branch Route provides a continuous north-south route on the west side of the Iron Triangle neighborhood. This route provides connections between Peres Elementary School, Nevin Center, Lincoln Elementary School, and the Richmond Greenway.

Cost

\$\$ - This project involves some curb work and traffic calming treatments which many affect drainage, including raised intersections and median refuges.

Issues & Opportunities

- **Uncontrolled Crosswalks:** intersections at Barrett Avenue and Nevin Avenue both have uncontrolled and unmarked crosswalks
- **Intersection Offset:** At Barrett Avenue, 4th Street is offset which may be difficult to negotiate for pedestrians and bicyclists
- **Long Blocks:** long blocks with limited traffic control may increase auto speeds

Key Proposals

4th Street between Pennsylvania Avenue and Ohio Avenue

- Install speed tables or speed humps to reduce speeds
- Yellow Brick Road Crosswalks: Colorized, stamped asphalt pattern of yellow bricks within all parallel crosswalks (raised and at-grade) on the route
- Yellow Brick Road Raised Intersections: Stamped asphalt with community-designed painted intersections
- Pedestrian and Bicycle Wayfinding Signs: Use WCCTAC design guidelines and sign types to indicate distance to activity centers along the route like schools, parks, and BART
- Pedestrian-scale lighting
- Landscaping and stormwater planters

Barrett Avenue Intersection

- Ladder crosswalks with median refuge areas across Barrett Avenue and enhance with rectangular rapid flashing beacon (RRFB)

Nevin Avenue Intersection

- Raised intersection

Macdonald Avenue Intersection

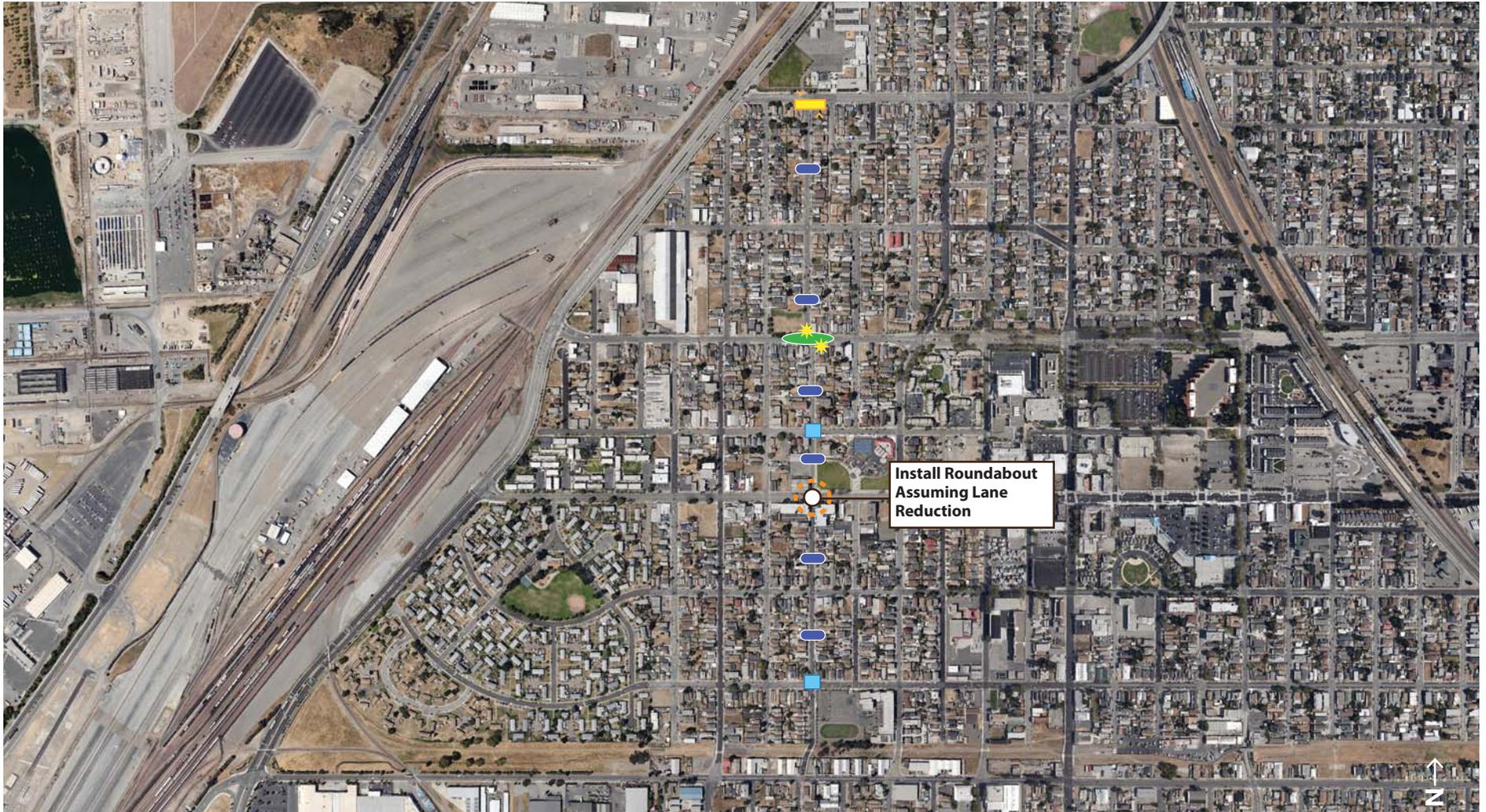
- Roundabout at intersection with Macdonald Avenue, assuming lane reduction on Macdonald Avenue
- OR ladder crosswalks with median refuges and Rectangular Rapid Flashing Beacons (RRFBs) across Macdonald

Bissell Avenue Intersection

- Replace existing all-way Stop intersection with traffic circle with Yield control on all approaches
- Stripe ladder crosswalks on all approaches



4th Street Proposed Improvements



- Raised Intersection
- Crosswalk With Yellow Brick Stamped Asphalt Pattern
- Raised Crosswalk
- Curb Extension With Directional Curb Ramps
- Bike Boulevard
- Bike Lanes
- Intall Roundabout
- Rectangular Rapid Flashing Beacon Signage
- T Intersection
- Median Refuge
- Speed Table/Hump



Vision Plan Going Forward

The Yellow Brick Road/Iron Triangle Vision Plan is intended to detail improvements first identified under the Richmond Pedestrian Plan. This document is organized around grant-ready fact sheets that the City and Pogo Park can take forward to secure grant funding based on concept designs, approximate cost estimates, public outreach documentation, and existing conditions information.

The Tree concept that frames this Plan is intended as a phasing plan for the Yellow Brick Road network. As such there are four distinct next steps envisioned for this project:

- 1. Adopt the Yellow Brick Road/Iron Triangle Neighborhood Plan as an Appendix to the Pedestrian Plan** — integrate this planning document into the Richmond Pedestrian Plan by adopting this document as an appendix to the Pedestrian Plan. The Richmond Bicycle Master Plan can also be amended, as needed, to account for the bicycle improvements proposed in this Plan.
- 2. Secure Funding for & Implement the Roots Route: Elm Play Lot to Peres Elementary School** — the concept design plans for the Elm to Peres Roots Route and corresponding cost estimate and fact sheet are intended to provide the City with clear documentation of the highest priority route associated with the Yellow Brick Road network. This project can be included in competitive grant applications to create the case for funding this critical Roots Route. While this route is a community priority, the City should pursue all Yellow Brick Routes opportunistically. Additionally, interim design improvements for all routes should be considered and may provide cost-effective, immediate solutions to improve walkability in the Iron Triangle neighborhood.
- 3. Secure Funding for & Implement the Trunk Routes: 4th Street, 8th Street, Pennsylvania Avenue, and the Richmond Greenway Trail Crossings** — with the critical first phase in place and/or headed towards construction, identify grants and apply for funding for the Trunk Routes. The concept plans included in this Plan are scaled concept drawings prepared to a level of detail that will allow these projects to be competitive for grant funding. Detailed cost estimates should be prepared for the routes. The fact sheets included in this Plan can be included in competitive grant applications to create the case for funding the critical Root and Trunk Routes.
- 4. Continue to Develop the Branch Routes** — Concept diagrams and project ideas are identified in this Plan for the secondary and tertiary Yellow Brick Road routes that will help create a fine-grained, highly-connected pedestrian-first network in the Iron Triangle. The City can pursue additional planning funding for these projects to further define the projects and get community feedback.



Yellow Brick Road

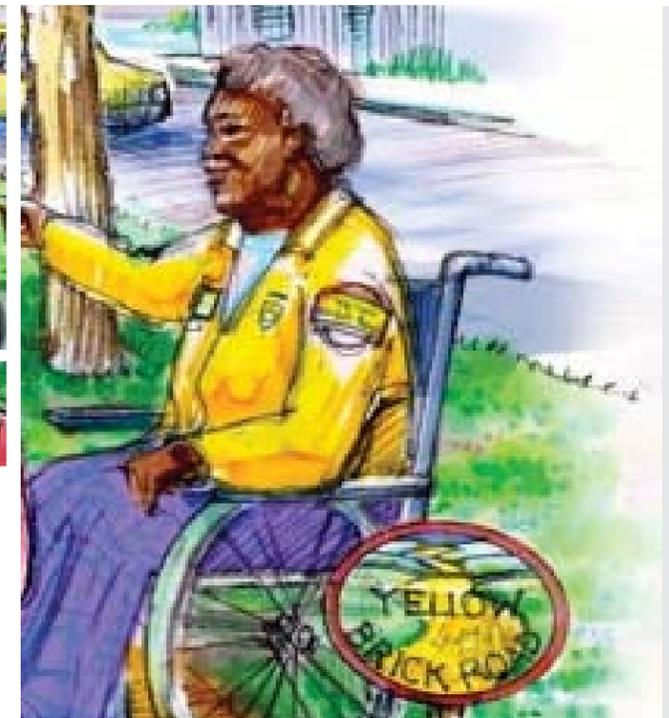
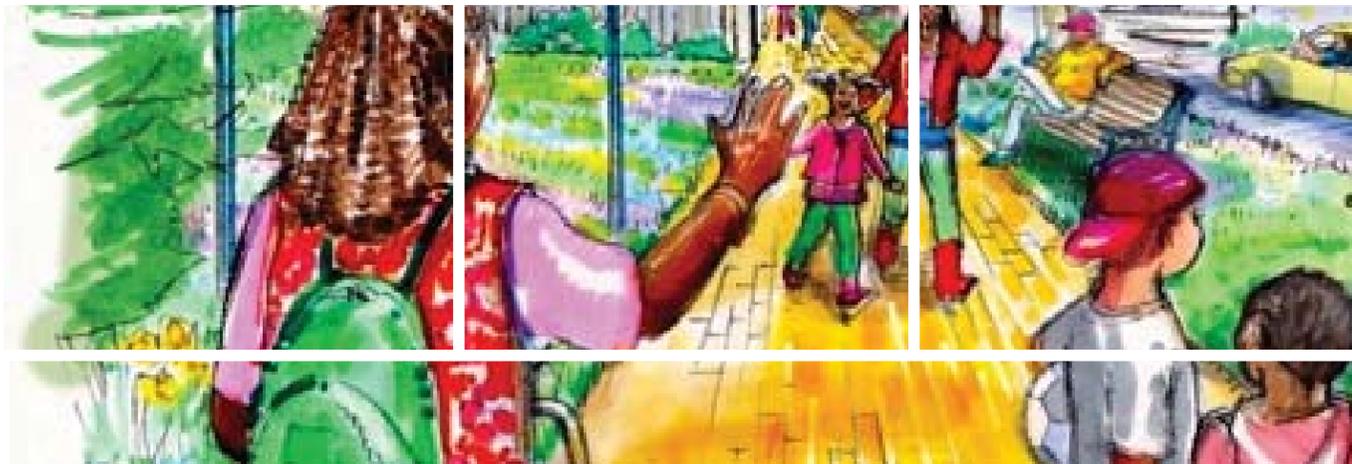




Yellow Brick Road Iron Triangle Walkable Neighborhood Plan

Appendix A

Transforming lives by transforming public space.



FEHR & PEERS

February 2015





Engineers Estimate of Construction Costs

Project:	Yellow Brick Road: Elm to Peres Route
Location:	7th Street and Elm Avenue
Date:	02/25/2015
Project #:	WC13-3084
Checked:	RM

Signing & Striping

I.D	Design Element	Unit of Measure	Unit Cost	Quantity	TOTAL
Signing					
000001	Install New Sign on New Post	ea	\$700.00	28	\$19,600.00
000002	Install New Customized Wayfinding Sign on New Post	ea	\$1,000.00	16	\$16,000.00
000005	Relocate Existing Sign and Post	ea	\$400.00	1	\$400.00
000008	Remove Existing Sign & Post	ea	\$150.00	2	\$300.00
Striping					
000032	Detail 23 - Marker Type Double Yellow Center Line	lf	\$4.50	173	\$778.50
000033	Detail 24, 25, 27B - 4" Solid Edgeline	lf	\$1.00	816	\$816.00
000058	Detail 39 - Bike Lane (Paint)	lf	\$1.25	1040	\$1,300.00
000023	12" Limit Line/Crosswalk	lf	\$6.60	754	\$4,976.40
000032	Pavement Legends (Thermo)	sf	\$8.50	274	\$2,329.00
000033	Paint Curb	lf	\$2.50	880	\$2,200.00
000035	Remove Thermoplastic Striping and Markings	sf	\$5.00	22	\$110.00

CIVIL

I.D	Design Element	Unit of Measure	Unit Cost	Quantity	TOTAL
Paving/Curb					
000003	Slurry Seal	SF	\$2.00	37000	\$74,000.00
000004	Parking Lot Paving (3" AC/6" Class II AB)	SF	\$6.00	2658	\$15,948.00
000009	Concrete Curb	LF	\$30.00	297	\$8,910.00
000010	Concrete Curb & Gutter	LF	\$40.00	1032	\$41,280.00
000011	Concrete Driveway	SF	\$15.00	504	\$7,560.00
000012	Mountable Concrete Surface	SF	\$15.00	639	\$9,585.00
000013	Concrete Sidewalk	SF	\$10.00	7341	\$73,410.00
000016	Curb Ramp	EA	\$3,500.00	12	\$42,000.00
Utilities					
000033	Drainage Inlet Relocation Along Pipe	EA	\$7,500.00	2	\$15,000.00
Aesthetic/Architectural					
000044	Box Tree	EA	\$750.00	6	\$4,500.00
000045	Bench	EA	\$1,000.00	4	\$4,000.00
000046	Bike Rack	EA	\$1,000.00	2	\$2,000.00
000050	Decorative Crosswalk Paving	SF	\$13.00	2520	\$32,760.00
000053	Planting Area	SF	\$20.00	559	\$11,180.00
000057	Trash Can	EA	\$400.00	4	\$1,600.00
000058	Tree Grates	EA	\$1,500.00	6	\$9,000.00

SUBTOTAL			\$401,542.90
5%	Traffic Control		\$20,077.15
10%	Mobilization		\$40,154.29
10%	Construction		\$40,154.29
20%	Management		\$40,154.29
20%	Contingency		\$100,385.73
TOTAL CONSTRUCTION			\$602,314.35
5%	Environmental		\$30,115.72
15%	Design		\$90,347.15
TOTAL COST			\$722,777.22