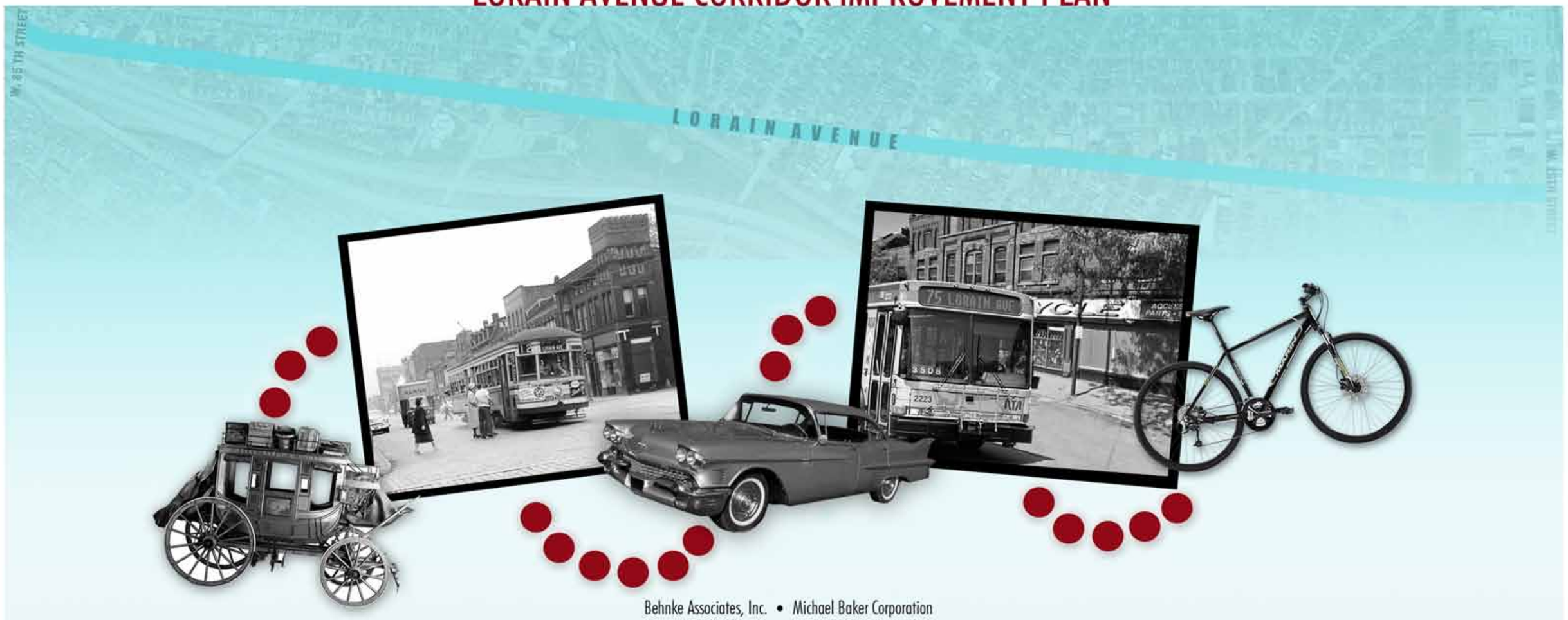
LIVING LORAIN

LORAIN AVENUE CORRIDOR IMPROVEMENT PLAN



Behnke Associates, Inc. • Michael Baker Corporation

December 9, 2013

ACKNOWLEDGEMENTS

We would like to thank the following project sponsors:

Councilman Joe Cimperman, Ward 3 – Cleveland City Council

Councilman Matt Zone, Ward 15 - Cleveland City Council

Ohio City Incorporated

The Detroit Shoreway Community Development Organization

Saint Ignatius High School

Ohio Savings Bank

Ohio Finance Fund

We also extend thanks to:

City of Cleveland

Urban Community School

GCRTA

Project Stakeholders

Public Meeting Participants

The Lorain Avenue Corridor Improvement Plan will encourage economic redevelopment on Lorain Avenue through enhanced transportation options, safety, and aesthetics for residents, merchants, commuters, and visitors.

Lorain Avenue's history as a primary transportation and commercial corridor dates back to the mid 1800's. The opening of the West Side Market in 1912 and introduction of streetcars spurred the corridor's expansion west, creating the foundation for today's commercial district.

The corridor study area extends from West 25th to West 85th Streets, connecting two neighborhoods – Ohio City and Detroit Shoreway. Councilmen Joe Cimperman and Matt Zone work with Ohio City Incorporated and Detroit Shoreway Community Development Organization (CDC) to faciliate redevelopment efforts.

The project study area includes the Ohio City/Market District, Saint Ignatius High School, Urban Community School, EcoVillage, Lorain Historic District, and Antiques District.

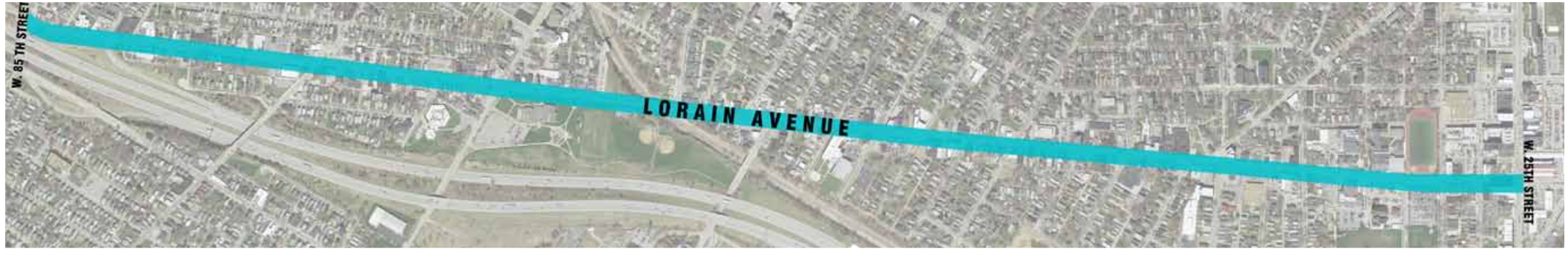
Ohio City is a thriving community, featuring over 150 locally-owned businesses that cater to consumers' demand for local products. The Detroit Shoreway neighborhood's nearby Gordon Square Arts District is another popular dining and entertainment area, offering new restaurants, shops, and entertainment that attract both Clevelanders and tourists. Although Gordon Square is not within the study area, its streetscape design and overall character was considered in development of this plan.

The Ohio City/Market District and Gordon Square Arts District are both catalysts for economic growth, and Lorain's close proximity to Downtown Cleveland presents further opportunities for redevelopment. The project planning team -- composed of Ohio City Incorporated, the Detroit Shoreway CDC, Cleveland public and private stakeholders, Behnke Associates, and Michael Baker Corporation -- collaborated to develop a plan that builds on this momentum. Designed to reinvigorate Lorain, the team's system of roadway, streetscape, and branding improvements will establish high-quality standards that generate interest in business redevelopment and reinvestment throughout the corridor.

PROJECT GOALS:

1. Express Ohio City and Detroit Shoreway brands, strengthen the identity of individual stakeholders and segments along Lorain, and create a sense of place within the corridor.
2. Respect and reflect Lorain Avenue's history and architectural styles, while renewing the corridor with a forward-looking appearance.
3. Improve the safety and efficiency of transportation on Lorain Avenue.
4. Develop the most complete street configuration possible.
5. Create a safer and more welcoming pedestrian and cycling environment, to attract business patrons and reduce dependence on the automobile for all types of trips.
6. Coordinate with and improve GCRTA's transit waiting environments, for increased ridership.
7. Examine ways to reduce the corridor's stormwater impacts on the Cuyahoga River and neighboring watersheds.
8. Coordinate with current and past planning studies and development plans.

Photos, left: Anchored by West Side Market, the Market District's new restaurants, gathering spaces, and entertainment attract both local residents and visitors.



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chapter 1: preparation & process

RELATED STUDIES

The past and current studies to the right all relate to Lorain Avenue. The planning team considered each study's observations and conclusions to develop a coherent system of recommendations for the corridor as a whole. For example, the Living Lorain improvement plan grew directly out of goals and recommendations generated at the Launch Lorain design charette. Additionally, Cleveland's Complete and Green Streets Plan is establishing new transportation mode balance and green infrastructure standards, which Living Lorain incorporates on many levels. Living Lorain also employs the principles of livability and pedestrian prioritization encouraged by the Ohio City Vision TLCI and GRCTA West 25th TOD studies.

The Living Lorain improvement plan adheres to all of these studies' proposed guidelines. Designed to enhance safety, aesthetics, and efficiency, this new plan will establish the standards necessary to make the study area a pedestrian-focused place comfortable for commuters, residents, and visitors.

LAUNCH LORAIN

- Traffic calming
- Streetscape enhancements
- Transit Waiting Environments (TWE)

OHIO CITY TRANSPORATION PLAN

- Complete Streets
- Wayfinding

OHIO CITY VISION T.O.D.

- Importance of historic and urban character
- Prioritize non-motorists

G.R.C.T.A. WEST 25TH STREET T.O.D.

- Improve livability and walkability
- Balance transportation modes
- Enhance transit ridership

COMPLETE AND GREEN STREETS

- Balance transportation modes
- Develop complete and green street standards

CLEVELAND BIKEWAY

- Make Cleveland a bicycle-friendly community
- Bicycle parking ordinance
- Establish Lorain as a neighborhood connector

WEST 65TH T.L.C.I. STUDY

- In progress

PROCESS

The planning process began in February of 2013 with a public kickoff meeting. A series of surveys, analyses, and public meetings followed, creating the foundation for the corridor plan.

Once project goals had been developed, the planning team conducted a block-by-block walking audit of the corridor's existing conditions, including land use, architecture, streetscape design, and traffic. The site inventory cataloged and photographed community assets with development potential, as well as properties in disrepair.

The analysis process also considered the concerns of residents, merchants, and other stakeholders. OCI and DSCDO conducted a survey that asked residents and merchants specific questions about Lorain's current transportation options and streetscape. Their responses helped the planning team to develop a better understanding of the community's wants, needs, and expectations for the project.

Following the traffic and site analysis, the planning team compiled its data into a detailed presentation for stakeholders. The presentation encouraged discussion and teamwork; participants formed groups to develop potential design alternatives.

These group discussions influenced the next phase of the planning process -- concept development. The planning team used participants' feedback to create options for improving the corridor's right-of-way configuration and streetscape. Planners explored conceptual alignments that would incorporate on-street parking and bike facilities, as well as increase pedestrian comfort and safety. The proposed configurations and streetscape elements -- including benches, trash receptacles, street trees, and lighting -- were then presented to stakeholders and the public; their feedback was incorporated in the development of the final concepts shown in this report.

The project's planning process was a collaboration between Ohio City Incorporated (O.C.I.), the Detroit Shoreway Community Development Organization (DSCDO), project stakeholders, and the public.

PROCESS STAGES:

TRAFFIC ANALYSIS
Examine Lorain's existing right-of-way, lane configurations, traffic patterns, and traffic volumes to determine the corridor's transportation needs.

CONCEPTUAL CORRIDOR CONFIGURATIONS
Use traffic analysis and public input to propose configurations that better serve Lorain's residents, merchants, commuters, bicyclists, and pedestrians.

STREETSCAPE IMPROVEMENTS
Within the context of the preferred corridor configuration, develop streetscape treatments that meet the project goals.

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chapter 2: existing conditions

HISTORY & CULTURE

In the mid-nineteenth century, German, Irish, and Hungarian immigrants seeking employment in Cleveland began to settle the area around Lorain Avenue. These new Americans brought popularity and economic growth to the stagecoach route; by 1900, Lorain had emerged as a key arterial for commerce and transportation between downtown Cleveland and points west. The corridor evolved from a stagecoach to streetcar route and continued to expand. By 1930, Lorain had become predominately commercial.

Today, Lorain Avenue continues to be commercial-oriented with a diverse range of businesses, including specialty shops, ethnic markets, restaurants, delis, antique stores, and entertainment venues.

LAND USE

Although Lorain Avenue's land uses are mostly commercial, the corridor also includes scattered industrial, residential, institutional, and recreational uses.

Institutional land uses include a post office, public library, and two schools: Saint Ignatius High School, a Jesuit, college preparatory school near the West Side Market, and Urban Community School, sponsored by the Ursuline Sisters of Cleveland. Building density decreases moving west of West 44th Street, and used car dealerships and parking lots increase. This increase in open, paved areas limits opportunities for eyes on the street, which may encourage crime.

Some of Lorain's businesses, including Fridrich bicycles (above), Klein's Automotive, and Nick's Diner, have served Clevelanders for decades.

DISTRICTS

The planning team identified six distinguishable areas of significance within the study area: Ohio City/Market District, Saint Ignatius High School, Urban Community School, EcoVillage, Lorain Historic District, and Antiques District. Based on discussion with stakeholders, the planning team determined that the:

- Ohio City/Market District
- EcoVillage
- Antiques District

are most important to emphasize in the proposed improvements. These areas are well-established destination points for visitors and local residents, and offer high potential for future business development.

The Ohio City/Market District continues to attract new restaurants, retail, and residences. Anchored by the West Side Market, this district's recent growth as an artisan community has generated new opportunities for development throughout the corridor. In contrast, the Antiques District's popularity has declined. This plan aims to reinvigorate the District's unique retail venues to promote healthy economic growth not only for the District, but for the whole corridor.

EcoVillage construction began in 2003. Its future development plans will continue to highlight environmental sensitivity and sustainability.

DISTRICT BRANDING & IDENTITY

Branding and identity can define each district by highlighting its unique characteristics and amenities. Ohio City signage effectively guides visitors through the Market District and conveys an identity, but for the other districts, brand presence is intermittent at best.

BRAND PRESENCE

The Detroit Shoreway neighborhood is currently developing branding ideas; new signage is anticipated to be installed later this year.

In EcoVillage, a series of townhomes on W. 58th and the district logo displayed at the RTA rapid transit station are the only indications of the EcoVillage brand.

Signs and banners are scattered throughout the the Antiques District, but do not correspond with the district's official location (W. 73rd to W. 80th Street). The existing Deco sign (shown on the next page) is a clear district identifier, but is used infrequently.

CHARACTER AND CURRENT DISTRICT BRAND EXPRESSION

OHIO CITY / MARKET DISTRICT

OHIO CITY

CLEVELAND'S

Artisan Neighborhood

ECOVILLAGE

ANTIQUES DISTRICT

CORRIDOR FUNCTION

Since its origins in the mid-nineteenth century, Lorain Avenue has served as a commercial corridor and a local and regional connector between downtown Cleveland and neighborhoods west.

Lorain's narrow right-of-way is an average width of 66', with the roadway divided into (2) 12'-wide travel lanes and (2) 11'-wide non-peak hour parking lanes. Two curb lanes provide on-street parking during non-peak hours, providing a necessary buffer between roadway and pedestrian space.

Sidewalks are an average width of 10' on both sides of the roadway -- normally a comfortable width for moderate pedestrian traffic. However, utility poles, folding signs, planters, and other obstacles protrude into pedestrians' path of travel and significantly reduce the width of the pedestrian zone. During peak traffic hours, a lack of buffer between moving vehicles and sidewalks further decreases pedestrian comfort.

Pedestrian volume is highest in the Ohio City/Market District and Antiques Districts, from the Saint Ignatius campus to West 44th Street, and around the Urban Community School campus and Zone Recreation Center.

TYPICAL LORAIN RIGHT-OF-WAY

sidewalk	driving and parking lanes	sidewalk
10' +/-	46'	10' +/-

1

2

Photos: (1) A combination of obstacles on the sidewalk and little buffer between moving vehicles and sidewalks makes for an uncomfortable pedestrian zone. (2) Uneven walking surfaces and varied curb heights are hazardous to pedestrians.

PUBLIC TRANSIT

Two of the Greater Cleveland Regional Transit Authority's (RTA's) most heavily-used routes -- the 22 and 79 A/B -- service the Lorain corridor. Lorain also is close to and nearly parallel with the RTA Rapid Transit Red Line, and serves as a conduit to and from the Red Line stations.

RTA's Transit Waiting Environments have inconsistent treatments, and most lack shelters, benches, and lighting (see photos 1 and 2, below).

BICYCLISTS

Lorain is also a potential major east-west transportation corridor for cyclists. However, the road's lack of pavement for cyclists forces bikes and automobiles to mix unpredictably, increasing the chances for accidents. *Bike Cleveland* has reported several bike/vehicle conflicts along Lorain Avenue.

Although bicycle racks and a bike box have been provided within the Ohio City Market District as public art, they become infrequent west of West 28th Street.

ARCHITECTURE

Lorain's history as a destination for European immigrants has influenced its architecture. Buildings date back to 1865, and styles range from Italianate and turn-of-the century American to Art Deco and modern. Combined, the Cleveland Landmark District (West 20th - West 28th) and the Nationally-Designated Landmark District (West 32nd - West 58th) include eleven buildings listed on the National and Local Register of Historic Places.

Historic buildings are often adjacent to vacant blighted properties that invite vandalism and other crime, creating an uncomfortable and unsafe setting for corridor users. Vacant buildings are especially problematic, since they lack occupants to provide informal street surveillance (or "eyes on the street"). Unmaintained buildings decrease property values for the whole corridor, deterring potential business owners and home buyers, and discouraging growth.

The City of Cleveland is leveraging a Storefront Program to assist merchants with storefront renovations. The program's goal is to increase business visibility, create a sense of ownership, and make Lorain more viable for reinvestment and retail development.


1


3


5


2


4


6

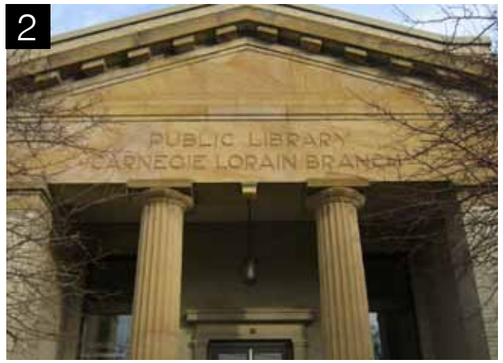

7

(1) New bus shelter installed at Market District Park (2) Transit Waiting Environment at West 85th Street (3) Some cyclists ride with vehicular traffic in driving lanes (4) Cyclists also use Lorain's sidewalks as an alternative to the roadway, which is dangerous for pedestrians. (5) Market District bike racks double as public art. (6) Some Lorain Avenue bike racks double as public art, but are intermittent throughout the corridor. (7) Unmaintained antique shop with adjacent vacant retail space

Bike racks in the Market District (top) and along Lorain Avenue double as public

ARCHITECTURAL CHARACTER

(1) Bijou Antiques (2) Carnegie-Lorain Public Library (3) Urban Community School (4) Lorain Surgical Supply building (5) Saint Ignatius High School



CORRIDOR EDGES

Many of the corridor's land uses, such as parking lots, car dealerships, schools, and residences, require enclosure. Property owners employ methods ranging from ornamental fencing and guardrails to bollards connected with cables. Fence types, heights, and styles are inconsistent. Schools and residences typically use ornamental fencing; car dealerships and parking lots vary between ornamental and chain link fence (see photo, right).

Inconsistent fencing around used car lots

UTILITIES

Utility poles and overhead wires run the length of Lorain Avenue and are especially dense and unsightly west of W. 53rd Street. Poles are sidewalk obstacles for pedestrians and restrict locations for street furnishings. Low overhead wires limit potential street tree possibilities to only low varieties.

Current lighting includes cobra-head fixtures and lamps attached to utility poles (see photos 2-4, right). Ohio City/Market District employs historic acorn lighting up to West 26th Street (see photo 4, right).

Utilities photos, right: (1) Above-ground utilities limit locations for street trees and are unsightly. (2) Lighting in Antique District (3) Standard cobra-head fixture (4) Acorn lighting in Market District

FURNISHINGS

Benches, large planters, trash receptacles, and bike racks are scattered throughout the corridor. Locations and styles are inconsistent, which contributes to an overall discordant streetscape. More seating and bike racks are also necessary.

Additional elements -- such as newspaper vending boxes, pay phones, folding signs, and mailboxes -- clutter the walks and restrict pedestrian movement in some locations.

PUBLIC ART & OWNERSHIP

Public art adds color, life, and a sense of identity, pride, and ownership. The corridor offers many opportunities for additional public art.

Some of Lorain's public art is incorporated into buildings, fences, and other structures. Colorful murals add interest to building facades. Artistic fences and gates with unique metal work are both functional and aesthetic.

Lorain also features stand-alone sculptures and installations that add unique character to the streetscape. For instance, birdhouses in the EcoVillage reinforce the district's emphasis on sustainability and appreciation for nature.

1

2


3

4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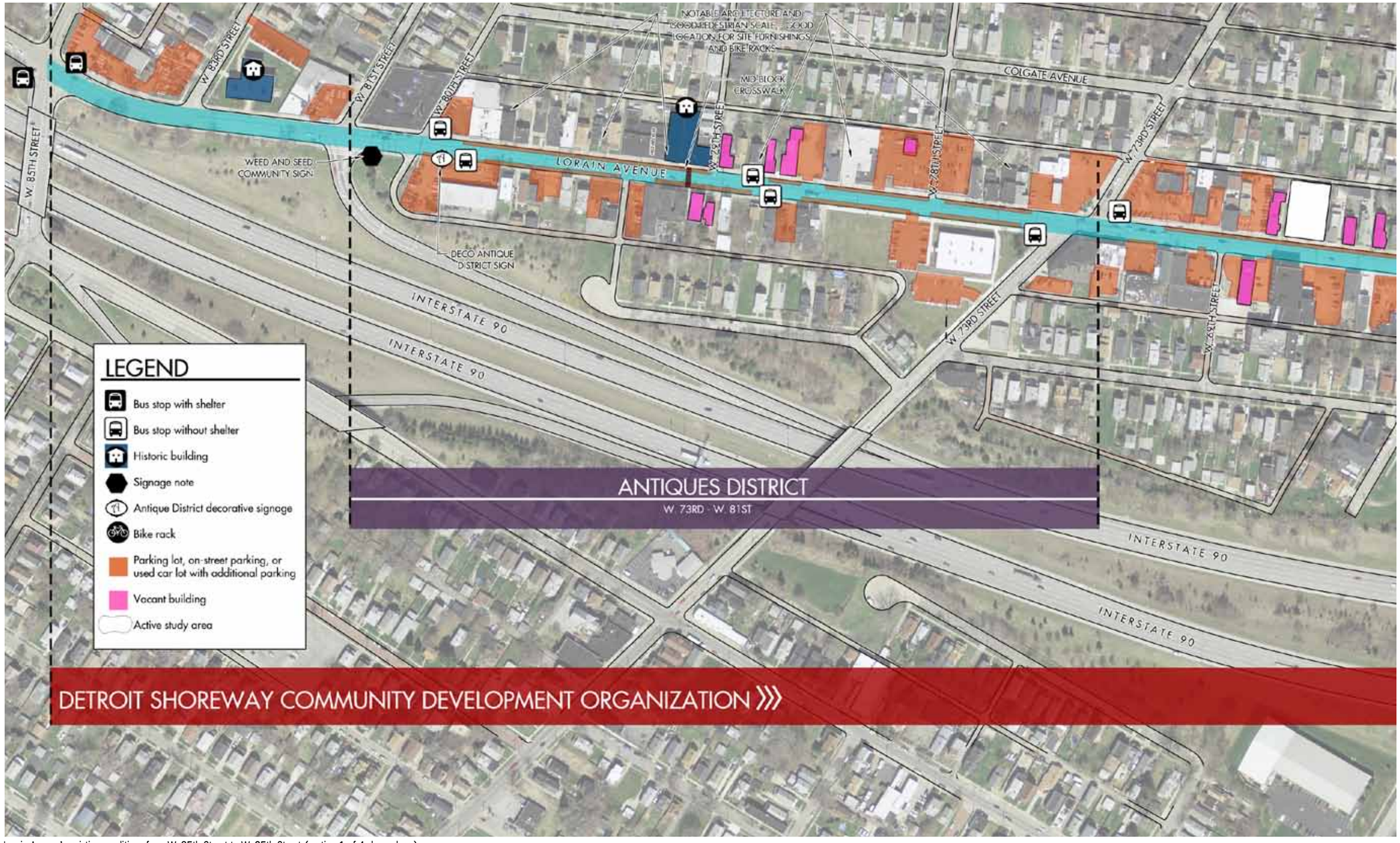
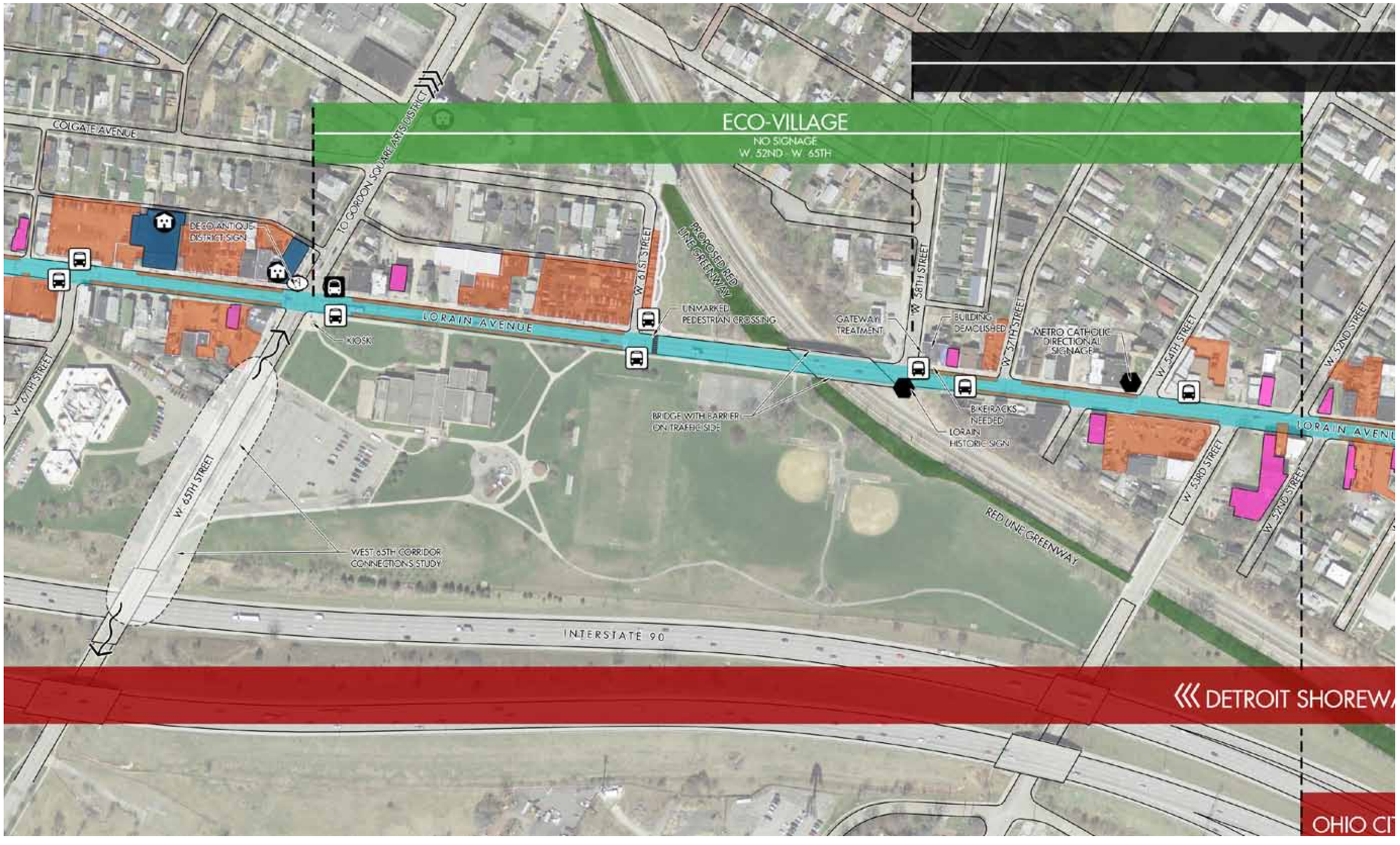
10

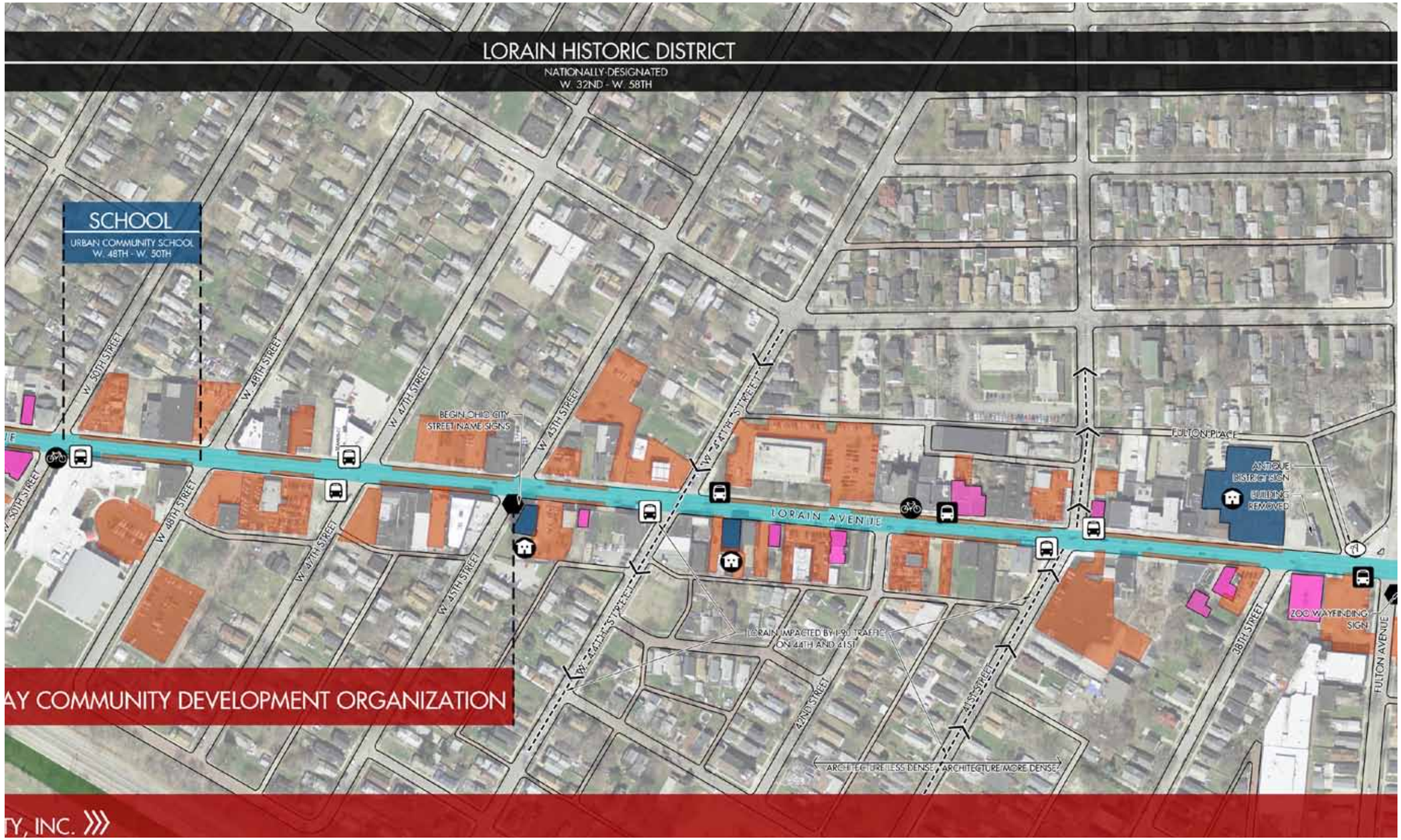
(1) Outdated pay phones clutter the sidewalks; many have been vandalized. (2) Bench styles vary among individual businesses, and are inconsistent. (3) Birdhouses are a creative addition to the EcoVillage streetscape. (4) Newspaper vending boxes are unused and/or outdated and should be removed. (5) Current trash receptacles are unattractive. (6) Some benches appear structurally unsafe. (7) Metal art enhances ornamental fencing in the EcoVillage and reinforces the district's identity. (8) Sidewalk clutter detracts from sculptural earphone-shaped bike racks. (9) A colorful mural adds artistic interest to a bare wall. (10) A unique metal parking lot gate provides security and doubles as public art

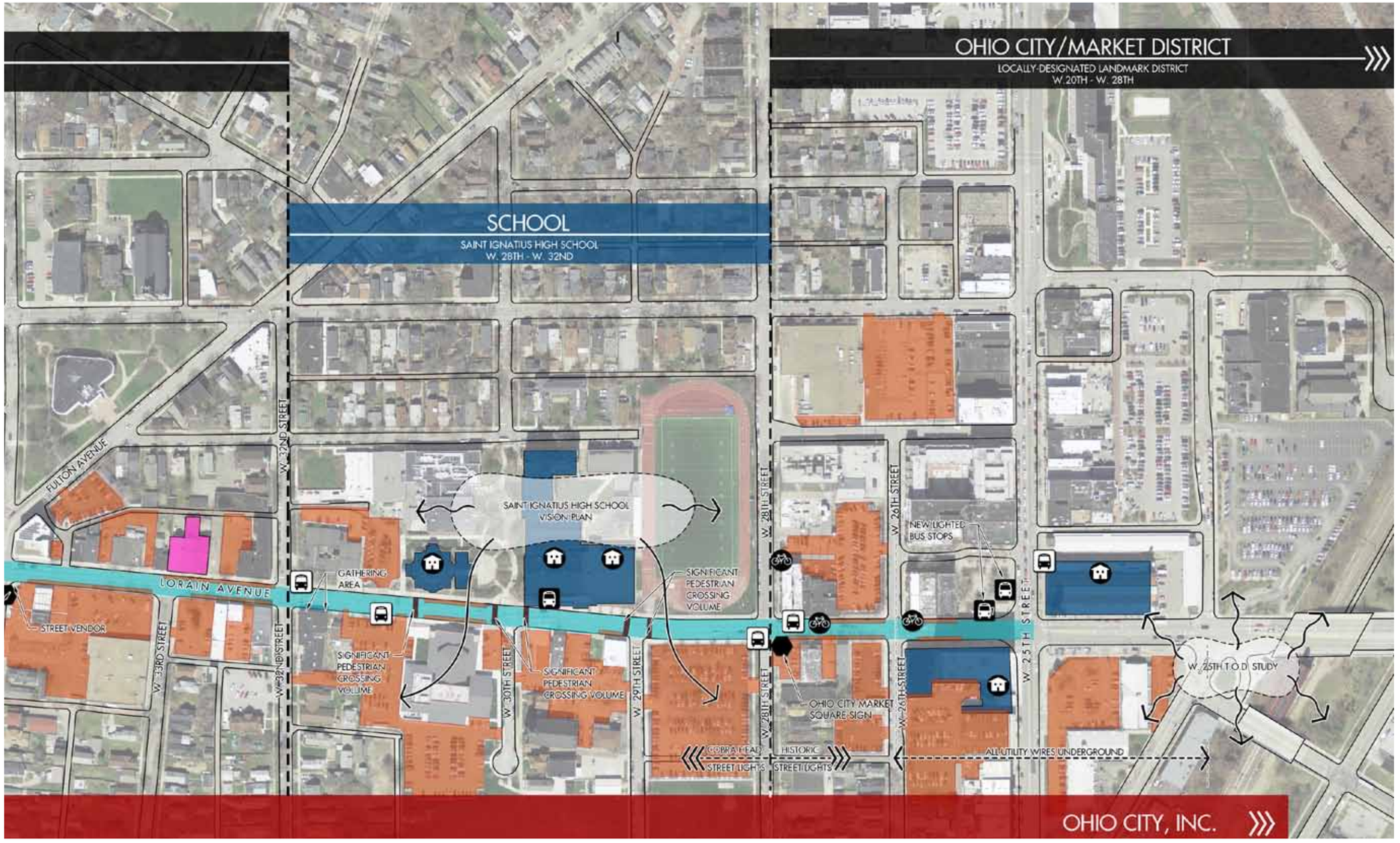
EXISTING CONDITIONS MAP



Lorain Avenue's existing conditions from W. 85th Street to W. 25th Street (section 1 of 4 shown here).


ECO-VILLAGE
NO SIGNAGE
W. 52ND - W. 65TH
COLGATE AVENUE
TO GORDON SQUARE ARTS DISTRICT
DECO ANTIQUE DISTRICT SIGN
W. 61ST STREET
PROPOSED RED LINE GREENWAY
UNMARKED PEDESTRIAN CROSSING
GATEWAY TREATMENT
W. 58TH STREET
BUILDING DEMOLISHED
W. 57TH STREET
METRO CATHOLIC DIRECTIONAL SIGNAGE
W. 54TH STREET
W. 52ND STREET
LORAIN AVENUE
KIOSK
W. 67TH STREET
W. 65TH STREET
BRIDGE WITH BARRIER ON TRAFFIC SIDE
BIKE RACKS NEEDED
LORAIN HISTORIC SIGN
W. 53RD STREET
W. 52ND STREET
LORAIN AVENU
RED LINE GREENWAY
WEST 65TH CORRIDOR CONNECTIONS STUDY
INTERSTATE 90
DETROIT SHOREWA
OHIO CI


LORAIN HISTORIC DISTRICT
NATIONALLY-DESIGNATED
W. 32ND - W. 58TH
SCHOOL
URBAN COMMUNITY SCHOOL
W. 48TH - W. 50TH
W. 50TH STREET
W. 48TH STREET
W. 47TH STREET
W. 45TH STREET
BEGIN OHIO CITY STREET NAME SIGNS
W. 44TH STREET
W. 41ST STREET
FULTON PLACE
ANTIQUE DISTRICT SIGN
BUILDING REMOVED
LORAIN AVENUE
ZOO WAYFINDING SIGN
38TH STREET
FULTON AVENUE
LORAIN IMPACTED BY I-90 TRAFFIC ON 44TH AND 41ST
42ND STREET
ARCHITECTURE LESS DENSE
ARCHITECTURE MORE DENSE
AY COMMUNITY DEVELOPMENT ORGANIZATION
TY, INC.


OHIO CITY/MARKET DISTRICT
LOCALLY-DESIGNATED LANDMARK DISTRICT
W. 20TH - W. 28TH
SCHOOL
SAINT IGNATIUS HIGH SCHOOL
W. 28TH - W. 32ND
FULTON AVENUE
W. 32ND STREET
SAINT IGNATIUS HIGH SCHOOL VISION PLAN
W. 28TH STREET
W. 26TH STREET
NEW LIGHTED BUS STOPS
GATHERING AREA
SIGNIFICANT PEDESTRIAN CROSSING VOLUME
LORAIN AVENUE
STREET VENDOR
W. 33RD STREET
W. 30TH STREET
W. 29TH STREET
W. 25TH STREET
W. 25TH T.O.D. STUDY
OHIO CITY MARKET SQUARE SIGN
W. 26TH STREET
COBRA HEAD STREET LIGHTS
HISTORIC STREET LIGHTS
ALL UTILITY WIRES UNDERGROUND
OHIO CITY, INC.

chapter 3: traffic analysis

EXISTING CONDITIONS

Traffic analysis was conducted to assess the traffic operations and performance of Lorain Avenue between West 25th and West 44th Streets, as it is currently configured. This section of Lorain Avenue was identified for traffic analysis because the volumes are heavier on Lorain east of West 44th Street due to commuter traffic traveling to and from I-90. Additionally, Saint Ignatius students who are dropped off and picked up in the morning and afternoon contribute to the corridor's traffic volume. Based on historic data, traffic volumes to the west of West 44th Street are lower than volumes to the east, so capacity reductions that work acceptably for the analyzed intersections are expected to work acceptably to the west.

Lorain Avenue, as configured today, functions essentially as a two-lane road. Four travel lanes are marked, but on-street parking is permitted in the outside lanes (with peak hour restrictions). During off-peak hours, Lorain Avenue functions as a two lane road. During the AM peak period (7:00-9:30 a.m.), Lorain Avenue carries traffic in two eastbound lanes and one westbound lane. Similarly, during the PM peak period (4:00-6:30 p.m.), Lorain Avenue carries traffic in two westbound lanes and one eastbound lane. On-street parking is prohibited on the intersection approaches so the signalized intersections are able to function with 2-lane approaches. Exclusive left turn lanes are not provided. As such, the inside lane at intersections with measurable left turning traffic function as de facto left turn lanes.

Signal progression is a consideration for Lorain Avenue. Signal progression can be used to physically reinforce speed limits by using signal timing plans and offsets that are set to best accommodate vehicles traveling at the speed limit. The city of Cleveland has not recently evaluated Lorain Avenue for corridor performance so there may be opportunities to enhance traffic operations with signal progression. The Lorain Avenue traffic analysis was completed with optimized signal timing plans and signal progression for optimal corridor performance.

Traffic volume data was collected in the early spring of 2013 while schools were in session. The traffic analysis assessed intersection performance during the AM and PM peak hours. Traffic operations are assessed based on Level of Service (LOS), a grading scale that indicates the level of delay associated with intersection performance. LOS A represents free-flow conditions, LOS E indicates intersection operations at capacity, and LOS F is over-capacity. LOS D is the design standard for urban areas such as Lorain Avenue. The specific delay thresholds for both signalized and unsignalized intersections are provided by the Transportation Research Board in the Highway Capacity Manual and are shown in the LOS table on this sheet. Additionally, a v/c ratio (volume/capacity) that is less than 1.0 indicates that the lane is operating below capacity. A v/c ratio of 1.0 indicates that the lane is operating at capacity and a v/c greater than one indicates over-capacity conditions.

The results of the existing conditions traffic analysis indicate that the corridor functions below its capacity and with low levels of delay. The nine signalized intersections in the corridor are expected to operate at LOS C or better during both AM and PM peaks, with most intersections operating at LOS B or better. Overall intersection vehicle delays range from 0.70 sec/veh (LOS A) to 22.6 sec/veh (LOS C). These results are consistent with field observations. This indicates that there is excess capacity along the Lorain Avenue corridor and it would be feasible to consider capacity reduction. Reducing the motorized vehicle capacity of Lorain Avenue would reduce the overall amount of pavement needed for vehicular travel along the corridor, thereby allowing other use(s) within the excess roadway width, which could be used to accommodate on-street parking or a dedicated bicycle facility.

Features of the current Lorain Avenue corridor configuration include:

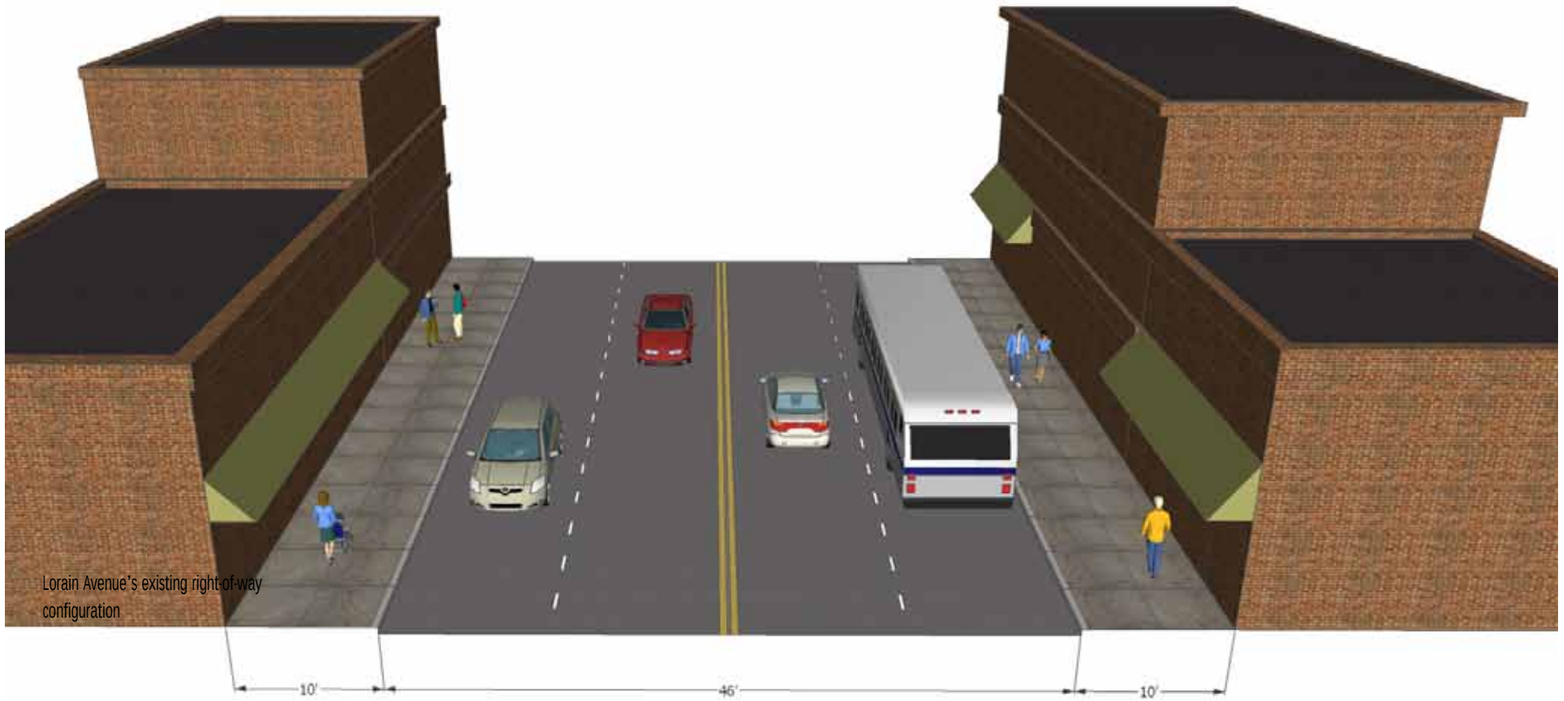
- 2-lane corridor with a single travel lane in each direction except peak hours
  - AM peak: 2-lanes eastbound and 1-lane westbound
  - PM peak: 1-lane eastbound and 2-lanes westbound
- On-street parking on both sides of the street, with peak hour restrictions
- No exclusive left turn lanes
- Pedestrian crossings at signalized intersections
- No bicycle accommodations

The graphics on page 14 illustrate Lorain's existing traffic conditions.

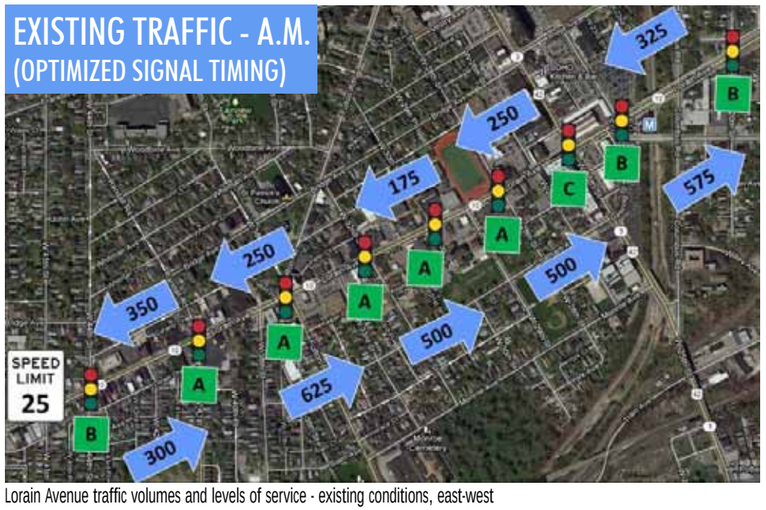
LEVEL OF SERVICE (LOS) (Highway Capacity Manual, 2010)

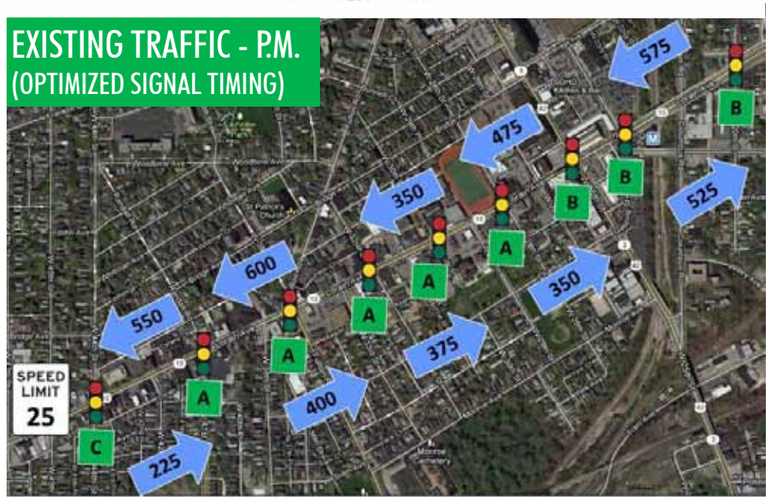
LOS	Signalized Intersection AVERAGE DELAY (SEC/VEH)	Unsignalized Intersection AVERAGE DELAY (SEC/VEH)
A	x<10	x<10
B	10<x<20	10<x<15
C	20<x<35	15<x<25
D	35<x<55	25<x<35
E	55<x<80	35<x<50
F	80<x	50<x

TRAFFIC ANALYSIS: EXISTING CONDITIONS



Lorain Avenue's existing right-of-way configuration





Lorain Avenue traffic volumes and levels of service - existing conditions, east-west

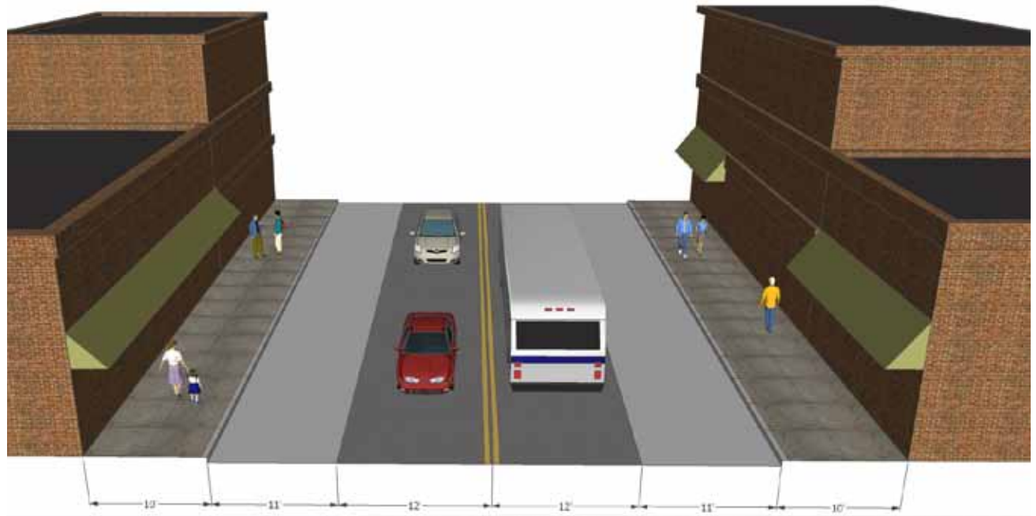
TRAFFIC ANALYSIS:
POTENTIAL 2-LANE CONFIGURATION

Conversion of Lorain Avenue to a 2-lane roadway (without a median and/or turn lane) would provide a single travel lane in each direction. With this configuration and understanding that Lorain Avenue is a transit corridor, it is important to note that vehicles would experience some delay as traffic would be required to wait behind buses that are stopped to unload and load passengers, as well as for any vehicles waiting to turn.

The results of the capacity analysis indicate that the reconfiguration of Lorain Avenue as a 2-lane corridor could be considered as a reasonable reconfiguration alternative, since the corridor is expected to function at LOS D or better. Note that vehicles waiting to turn left will block following vehicles. This impact is included in the capacity analysis. Additionally, it is important to remember that delay will be incurred by vehicles waiting behind buses that are stopped to unload and load passengers, as well as for any vehicles waiting to turn. This additional delay is not reflected in the capacity analysis results.

The 2-lane Corridor allows for reconfiguration of two of the existing marked lanes, thereby accommodating other use(s) within the excess roadway width. It could be used for both on-street parking and a dedicated bicycle facility. Features of this corridor configuration include:

- 2-lane corridor, which calms traffic
  - Single eastbound and westbound travel lanes
  - No left turn lanes
  - Potential for landscaped median or center turn lane
  - Two lanes of existing roadway are made available for other use
- Enhanced mid-block crossing opportunities
- Dedicated on-street parking (24/7 operations) AND dedicated bicycle facility (both can be accommodated)
  - On-street parking would be provided on only one side of the street
- Traffic stops for turning vehicles and stopped buses



2 LANES - A.M.
(OPTIMIZED SIGNAL TIMING)

2 LANES - P.M.
(OPTIMIZED SIGNAL TIMING)

Lorain Avenue east-west traffic volumes and projected levels of service - 2 lanes

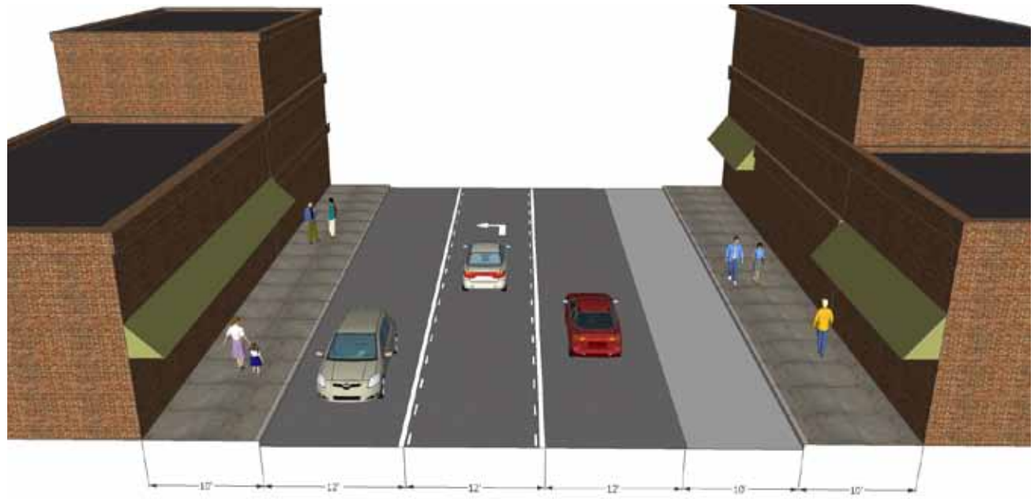
TRAFFIC ANALYSIS:
POTENTIAL 2-LANE WITH TURN LANE/ MEDIAN CONFIGURATION

Conversion of Lorain Avenue to a 2-lane roadway with a median and/or turn lane would provide a single travel lane in each direction and a center lane that would accommodate exclusive left turn lanes at intersections and could accommodate either a center (two-way left) turn lane or a raised median between intersections. Physical separation of the vehicle-traveled-way with a median would simplify and improve pedestrian crossings between intersections, with enhanced mid-block crossing opportunities. Provision of a center turn lane would remove left turning vehicles from the through traffic stream, thereby improving operational safety and efficiency.

The results of the capacity analysis indicate that the reconfiguration of Lorain Avenue as a 2-lane corridor with median/turn lane is feasible, since the corridor is expected to function at LOS D or better. Lorain Avenue is an RTA bus corridor, so this reconfiguration may have some impact on vehicles' ability to pass buses that are stopped to unload and load passengers. Vehicles may choose to use the turn lane to pass the stopped buses. It is important to note that provision of left turn lanes at intersections will improve the operational safety. Left turning vehicles are removed from the through traffic stream, reducing the accident potential for rear end and side-swipe collisions. Additionally, aligning the opposing left turns across from each other provides better sight distance for turning vehicles, thereby reducing the accident potential for right angle (t-bone) collisions. Note that the length of the left turn lane at intersections will depend on anticipated vehicle volumes and associated queues. Turn lane lengths will be determined in the design phase.

The 2-lane Corridor with Median/Turn Lane configuration allows for reconfiguration of one of the existing marked lanes, thereby accommodating other use(s) within the excess roadway width. It could be used for on-street parking or a dedicated bicycle facility. Features of this corridor configuration include:

- 2-lane corridor with median/turn lane for motorized vehicles, which improves safety and efficiency
  - Single eastbound and westbound travel lanes
  - Exclusive left turn lanes at intersections
  - Potential for landscaped median or center turn lane between intersections
  - One lane of existing roadway is made available for other use
- Enhanced mid-block crossing opportunities
- Dedicated on-street parking (24/7 operations OR dedicated bicycle facility (both cannot be accommodated)
  - On-street parking (one side of street) with sharrows
  - Bike lanes (no on-street parking)
- Traffic calming



2 LANES WITH TURN LANE/MEDIAN - A.M.
(OPTIMIZED SIGNAL TIMING)

2 LANES WITH TURN LANE/MEDIAN - P.M.
(OPTIMIZED SIGNAL TIMING)

Lorain Avenue east-west traffic volumes and projected levels of service - 2 lanes with turn lane / median

CAPACITY ANALYSIS RESULTS (OVERALL INTERSECTION PERFORMANCE)

Lorain Avenue Intersection		Existing Conditions		2-Lane with Median		2-Lane	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
W. 20th Street	LOS	B	B	B	C	B	C
	Delay	13.4	15.6	14.8	20.5	16.6	23.1
	v/c	0.37	0.36	0.69	0.67	0.70	0.63
W. 24th Street/ Gehring Avenue	LOS	B	B	C	C	C	C
	Delay	13.1	15.1	20.6	21.7	24.6	29.5
	v/c	0.36	0.44	0.67	0.78	0.57	0.96
W. 25th Street	LOS	C	B	C	C	C	C
	Delay	22.6	18.3	23.7	21.8	25.8	31.0
	v/c	0.75	0.74	0.76	0.82	0.77	0.84
W. 28th Street	LOS	A	A	A	B	B	B
	Delay	6.6	7.6	7.6	10.7	15.4	10.1
	v/c	0.35	0.38	0.61	0.62	0.62	0.61
W. 30th Street	LOS	A	A	A	A	A	A
	Delay	0.70	3.4	1.0	3.2	2.3	3.3
	v/c	0.15	0.24	0.28	0.30	0.28	0.29
W. 32nd Street	LOS	A	A	A	A	A	A
	Delay	3.7	3.2	4.3	3.4	7.9	5.9
	v/c	0.48	0.48	0.49	0.48	0.55	0.51
Fulton Road	LOS	A	A	B	B	B	B
	Delay	7.1	7.1	11.8	10.3	13.1	11.1
	v/c	0.53	0.47	0.81	0.63	0.81	0.74
W. 41st Street/ Randall Road	LOS	A	A	A	A	B	A
	Delay	8.9	7.3	9.9	9.6	12.6	9.4
	v/c	0.60	0.37	0.60	0.66	0.65	0.58
W. 44th Street	LOS	B	C	B	C	C	D
	Delay	19.5	20.5	19.6	20.2	22.8	38.3
	v/c	0.61	0.72	0.61	0.73	0.74	0.97

This chart compares LOS delays for the three corridor configurations evaluated for Lorain Avenue: existing, 2-lane with dedicated parking and a 2-lane with median.

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chapter 4: concepts & recommendations

What makes a great street?

- Space for people to walk leisurely, and places for people to gather
- Physical comfort, through shade in the summer, protection from the elements where possible, and traffic calming measures to make pedestrians the primary users of the corridor
- Street edge definition, to direct and engage people's eyes
- Transparency, to invite people beyond the street edge, and to foster a feeling of security
- Congruence between the architecture and the streetscape design and materials
- Maintainability, to promote a sense of cleanliness and to reduce the burden on the owner and stakeholders
- High quality design, details, and construction

Lorain Avenue can become a great street by adhering to the guidelines above, as well as the recommendations presented in this chapter, **in bold,** and summarized at the end of this chapter.

COMPLETE & GREEN STREETS

Complete Streets are designed to serve and provide safe access for pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities. Green streets balance and maximize their corridors' environmental, economic, and social performance through careful stewardship of water, vegetation, soils, materials, human health, and maintenance. **As a complete and green street, Lorain will:**

- **Increase roadway capacity**
- **Improve safety for all users**
- **Improve accessibility for all users**
- **Encourage healthier lifestyles**
- **Reduce air and water pollution**
- **Reduce downstream watershed impacts**
- **Reduce personal transportation costs**
- **Improve quality of life**
- **Provide social equity**

Good sidewalks become destinations in their own right, providing spaces for people to gather, dine, and socialize.

DESIGN FOR PEDESTRIANS

All pedestrians, regardless of age or size, should be able to move safely and comfortably within the corridor.

SIDEWALKS

Safe and accessible sidewalks benefit both pedestrians and merchants. Not only do active sidewalks allow for more "eyes on the street" to monitor safety, but they also encourage pedestrians to patronize local shops and restaurants.

Successful sidewalks incorporate the following ten elements:

1. ACCESSIBILITY
2. ADEQUATE WIDTH
3. SAFETY
4. CONTINUITY
5. LANDSCAPING
6. DRAINAGE
7. QUALITY OF PLACE AND SOCIAL SPACE
8. PEDESTRIAN-SCALE LIGHTING
9. MINIMAL CLUTTER

ACCESSIBILITY

All new **sidewalks and corner features** (such as curb ramps and landings) **will adhere to the Americans with Disabilities Act (ADA).** Call buttons, signs, symbols, markings, and pavement textures will also be ADA-compliant.

ADEQUATE WIDTH

The minimum width for an unobstructed sidewalk within the central business district is six feet. A two-to-six-foot wide amenity strip should include street trees, additional landscaping (only in areas where parties responsible for maintenance can manage additional landscaping), and site furnishings. **This plan proposes an average width of 10' for Lorain's sidewalks, including a 4', permeable-pavement amenity strip (see lane configuration options, pages 28-29).**

SAFETY

Maintaining a clear line-of-sight at corners and intersections is critical to pedestrian and motorist safety. If the project budget allows, **utilities should be buried at corners and intersections** to improve visibility and increase pedestrian space. Sidewalk design should comply with Cleveland's City Code.

CONTINUITY

Consistent furnishings, specialty paving, public art, landscaping, and lighting help to create a contiguous streetscape, delineate pedestrian space, and define corridor identity.

LANDSCAPING & STREET TREES

Street trees enhance the overall visual and spatial character of the pedestrian zone and the corridor as a whole. A continuous canopy defines pedestrian space on both sides of the road, especially where buildings are set back from the sidewalk or non-existent.

Street trees and landscaping also create a more pleasant setting for pedestrians, cyclists, and motorists. A beautiful street increases property value and encourages commercial growth.

Street trees should be urban and salt tolerant, mature to a size that does not conflict with overhead power lines, and require little maintenance. The chart below lists tree species to consider.

Additional salt and urban-tolerant landscaping can be utilized to define gathering spaces, but should be used only where they will be properly maintained.

RECOMMENDED STREET TREES


Ginkgo


Honeylocust


Lacebark Elm


Serviceberry


Thornless Hawthorn


Zelkova

QUALITY OF PLACE & SOCIAL SPACE

Complete and green streets' sidewalks should function as destinations in and of themselves, through the arrangement of seating and landscaping. **Where space and land use beyond the right-of-way permits, opportunities for more significant gathering and meeting places should be examined, to further enhance the corridor.** The image and plan below are two such examples.

DRAINAGE

Permeable pavement is proposed throughout Lorain's amenity strip and road edges. Per a preliminary geologic survey completed by Strand Associates in February, 2013 (see Appendix), native soils under eastern Lorain Avenue and the surrounding areas are sandy to gravelly. Granular soils create a desirable pervious pavement subbase to filter and infiltrate rainwater directly into the ground, and reduce the burden on the existing storm system.

Where pervious pavement is not feasible due to unfavorable soil conditions or other constraints, bioretention should be considered. Designed to collect, infiltrate, and remove pollutants from stormwater runoff before it enters a drainage system, bioretention areas use a combination of plantings and subsurface infiltration layers to remove contaminants, as well as reduce runoff rate and volume. Curb bulbouts are the most typical location for bioretention in a narrow corridor, similar to Lorain Avenue. Bioretention, however, requires a significant level of maintenance.

Tree biofiltration (see image below) combines good qualities of permeable pavement and bioretention, with less maintenance than bioretention. **This plan recommends utilizing the most efficient combination of permeable pavement, biorentention, and tree biofiltration, to clean, slow, and reduce rainwater runoff from the Lorain Avenue corridor.**

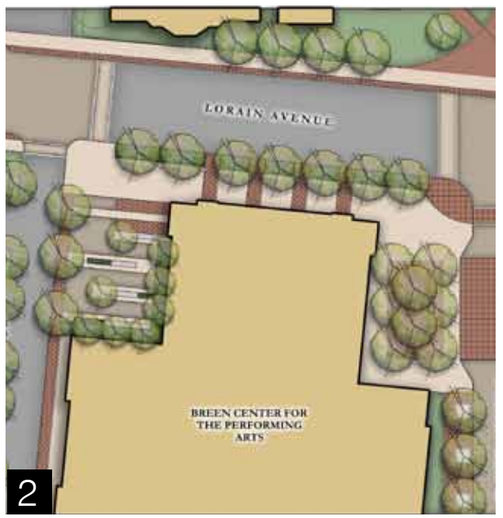
PEDESTRIAN-SCALED LIGHTING

Low, decorative street lighting helps denote pedestrian zones. Higher light levels create a safer environment.

MINIMAL CLUTTER

Another important quality for safe and attractive sidewalks is minimal clutter. Signage, parking meters, newspaper vending boxes, and utility poles are obstacles that compete for pedestrian sidewalk space and distract the eye from storefronts. **Parking pay stations would eliminate the need for individual parking meters. News vending boxes should be concentrated in a few specific areas or removed. Signage should be concentrated on light poles or traffic signal poles to increase sidewalk space and simplify wayfinding. Burying utilities in high-traffic areas would reduce the number of utility poles and maximize pedestrian space.**

Images: (1) Tree biofiltration requires less maintenance than a bioretention cell. Image courtesy of Bonestroo. (2) Pedestrian Plaza and streetscape concept for Saint Ignatius High School Breen Center for the Performing Arts



DESIGN FOR PUBLIC TRANSIT

Bus stops, renamed **Transit Waiting Environments (TWE), should be attractive destinations that incorporate:**

- transparent shelters (same model as W. 25th)
- pedestrian-scale lighting
- specialty pavement
- seating
- trash and recycling receptacles
- low-maintenance landscaping (where space allows)

Coupled with regular maintenance, TWE's that meet these criteria will feel safe and become a neighborhood amenity.

The planning team and stakeholders discussed implementing a Bus Rapid Transit (BRT) "Lite" system on Lorain. BRT systems use off-board fare collection, bus priority treatment at intersections, greater TWE spacing, and infrastructure improvements (such as station platforms in the center of the street and at bus-floor elevation) to increase bus route performance and decrease travel time. While the study area's narrow right-of-way cannot accommodate center stations and balance transportation modes equally, **greater TWE spacing and locations on the far side of intersections could improve bus transportation efficiency on Lorain.**

The Market District Park bus shelter should be used throughout the corridor.

In the Ecovillage, bus shelters can incorporate green roofs to further promote the district's identity as a sustainable community. Interpretive signage could explain the roof's function and benefits. Combined with a permeable pavement amenity strip and tree biofiltration, TWE's could become key features for highlighting sustainable, transit-oriented design.

DESIGN FOR BICYCLISTS

The community has expressed a desire to incorporate bicycle accommodations within the Lorain Avenue streetscape project. It is important to note that various populations of bicyclists and potential bicyclists have different needs and desires. For example, commuter bicyclists are likely to feel comfortable riding on the road and mixing with traffic while recreational cyclists would prefer a separately designated bicycle facility like bike lanes or a multi-use trail. Some potential bicycle treatments include sharrows (shared use lane markings), bike lanes, and cycle tracks (essentially a bike trail that runs parallel with and adjacent to the roadway). Bicycle treatments that do not provide separate physical space for bicyclists (i.e., sharrows) do not typically attract new bicyclists.

Cycle tracks have not been implemented in the city of Cleveland due to concerns for operational safety and effective traffic control, specifically where cycle tracks cross intersections. Bike lanes and multi-use trails, along with sharrows, are the typical bicycle facility treatments used in Cleveland. Cycle tracks are very common in the Netherlands, but there has not been substantial study of North American cycle tracks.

Recent research conducted in Montreal, Canada, investigated bicycle injury rates on cycle tracks versus in the street ("Risk of Injury for Bicycling on Cycle Tracks Versus in the Street", Injury Prevention Online First, February 9, 2011). Using existing crash and injury data from Montreal, Canada, a city with a network of cycle tracks in use for more than 20 years, this study compared bicyclist's injury and crash rates with published data and bicyclists' injury rates on cycle tracks, versus in the street, to determine the relative risk of injury on cycle tracks as compared with reference streets. Six cycle tracks were evaluated. All were two-way, located on one side of the street, with half the bicyclists riding in a direction opposite to that of the closest vehicular traffic. Each cycle track was compared with one or two reference streets without bicycle facilities that were considered alternative bicycling routes. The study considered whole segments of cycle tracks and not just intersections, measured bicycle exposure directly, and included appropriate comparison groups. The results showed that 2.5 times as many cyclists rode on cycle tracks compared with reference streets, and there were 8.5 injuries and 10.5 crashes per million bicycle kilometers. On average, the relative risk of injury on cycle tracks was 0.72 when the cycle track crash and injury data was compared with data on bicycling in reference streets (28 percent lower). Each of the six specific comparisons showed cycle tracks experienced the same or reduced risk of injury rates as their referenced streets, with some cycle tracks performing substantially better (more safely) than others. The results suggest that cycle tracks lessen, or do not increase, crash and injury rates compared to bicycling in the street. Note: This lowered risk exists in spite of the less-than-ideal design of the Montreal cycle tracks, such as lack of parking setbacks and intersections, which is a recommended practice. The study does not assess the relative safety of cycle tracks as compared to bike lanes.

This plan proposes implementing a cycle track on the north side of the street (see lane configuration options, pages 28-29). Successful implementation of a cycle track will involve resolving the operational safety concerns inherent in the traffic condition where cycle tracks cross intersections. Appropriate traffic controls are needed to regulate vehicle and bicycle traffic in a manner that avoids permitting simultaneous conflicting movements, such as turns by vehicles across the cycle track while bicycles also have the right of way. Considerations may include separate traffic and bicycle signals, vehicular turn restrictions, other traffic and access control measures, and facility treatments to control vehicular circulation across the cycle track. Transit operations and their impacts to corridor performance will also need to be considered. These issues will be studied in greater detail as the plan moves forward, and will incorporate collaboration with the City.

A cycle track is more protective than a standard bike lane, so it can accommodate multiple levels of cyclists. A safety buffer separates its parallel inbound and outbound lanes from on-coming traffic or parked cars.

CROSSING TREATMENTS

Crossing treatments for pedestrians and public transit users can increase safety and beautify the street. The following treatments should be employed on Lorain Avenue.

MEDIAN PEDESTRIAN REFUGE

Center islands narrow the cartway, shorten pedestrians' crossing distance, and provide a place of pedestrian refuge. On a two-travel lane road (one each direction,) this refuge allows pedestrians to cross one lane of traffic at a time. To improve car visibility and increase pedestrian-motorist eye contact, the pedestrian cut through the island should be oriented at an angle, toward oncoming traffic. **Proposed Lorain alignments incorporate a pedestrian refuge at midblock crossings.**

HIGH-CONTRAST CROSSWALKS

Crosswalks with high visual contrast clarify pedestrian crossing zones for motorists, increase motorists' awareness of their speed, and encourages people to cross only at specific locations. **All crosswalks along Lorain will be made highly visible with continental or ladder striping, or with colored, stamped concrete.**

IN-STREET PEDESTRIAN CROSSING ZONES

Where needed, signs placed in the middle of the street to denote crossing zones will raise motorist awareness and pedestrian comfort at non-signalized crossings.

BICYCLE PAVEMENT MARKINGS

Pavement markings for cyclists clarify right-of-way, raise awareness, increase eye contact, and guide cyclists and drivers to reduce accident frequency. **Lorain's dedicated cycle track lanes will include bike lane pavement markings to define cyclist and motorist right-of-way.**

CURB RAMPS

Accessible curb ramps designed according to the Americans with Disabilities Act create accessible routes across streets. Compliant ramps also create high visual contrast that guides pedestrians to crossing locations and raise motorists' awareness of crossing zones. **All curb ramps installed along Lorain will be ADA-compliant.**

COUNTDOWN PEDESTRIAN SIGNALS

Crossing signals with a countdown number show pedestrians if and how long they have to cross safely. **Countdown pedestrian signals should be installed at all pedestrian crossings on Lorain.**

PEDESTRIAN HYBRID BEACONS

Crossing signals, such as High-Intensity Activated crosswalk (HAWK) beacons and Rectangular Rapid Flash Beacons (RRFB), flash bright warning lights to motorists, only when pedestrians activate them, to cross the street. These signals have been found to be more effective than traditional, flashing yellow pedestrian crossing lights. **RRFB's will improve pedestrian safety at areas with significant pedestrian crossing volumes, such as Saint Ignatius High School.**

GATEWAYS

A gateway functions as an outdoor doorway, through which visitors move and arrive at a destination. When designed and executed properly, gateways send a clear signal to motorists to slow down, since they have arrived at a special area. Gateways should relate to and complement the district's character and identity, and can vary in scale. **The design process for Lorain Avenue improvements should determine the appropriate gateway treatments for Saint Ignatius High School, and the EcoVillage and Antiques Districts.**

BULBOUTS

Curb extensions toward the center of the road at intersections and mid-block crossings narrow the cartway, slowing motorists and reducing pedestrians' crossing distance. **See map on pages 24-25 for locations of enhanced intersections with bulbouts.**

Photos, left: (1) Median refuges improve pedestrian comfort and safety by narrowing the cartway and creating a stopping place to wait for on-coming traffic to clear. (2)Clearly marked crosswalks increase motorist awareness and pedestrian safety.

Photos, above: (1) Pedestrian crossing beacons use warning lights to alert motorists of an approaching pedestrian crossing. (2) Bulbouts create additional pedestrian space to incorporate planting, bioretention, and/or seating. Bulbouts also reduce pedestrian crossing distance. (3) Gateway entrance to Youngstown State University

ENHANCED INTERSECTIONS

Intersections should be enhanced at the locations shown on the enlargement map pages 24 & 25.

OHIO CITY/MARKET DISTRICT

Enhanced intersections are important at West 25th, West 28th, West 32nd, and Fulton Road, due to heavy vehicular and pedestrian volumes. A PHB at West 30th Street would improve the safety for crossing Saint Ignatius students.

ECOVILLAGE

An improved crosswalk on the east side of the West 52nd intersection is necessary for pedestrian safety and will enhance the EcoVillage entrance.

Although the EcoVillage transit station has a crosswalk on the west side of the West 61st intersection, the planning team recommends relocating it adjacent to the existing bus stop and creating a mid-block crossing. On the south side of Lorain, a bulbout and a pedestrian hybrid beacon system would improve pedestrian safety. Since this bus stop is highly-utilized, it has potential to develop as a key pedestrian space that highlights sustainability and reinforces the EcoVillage's identity and brand. Bulbouts offer opportunities for sustainable landscaping, bioretention, and seating.

The West 65th intersection should also be enhanced with new crosswalks and specialty paving. This intersection is currently being reviewed as part of the West 65th TOD study.

ANTIQUES DISTRICT

The existing midblock crossing near 79th Street includes flashing lights that help pedestrians to cross Lorain safely. However, this sign should be updated with a PHB, and the corresponding crosswalk should be enhanced with stamped, colored concrete. A similar mid-block crossing should be added at West 78th and include bulbouts on the south side of Lorain. This additional space can incorporate landscaping, seating, bioretention, art, or other design features that reinforce the district's identity and brand.

DESIGN ELEMENTS

GATEWAY FEATURES such as columns, art, signage, or other elements will create a sense of entry into a district

STAMPED, COLORED CONCRETE will act as a rumble strip outside of crosswalks

BRICK PAVING will be used in the amenity strip and in pedestrian space around the intersection

CROSSWALKS use stamped concrete to provide contrast and longevity

INTERSECTION TREATMENTS

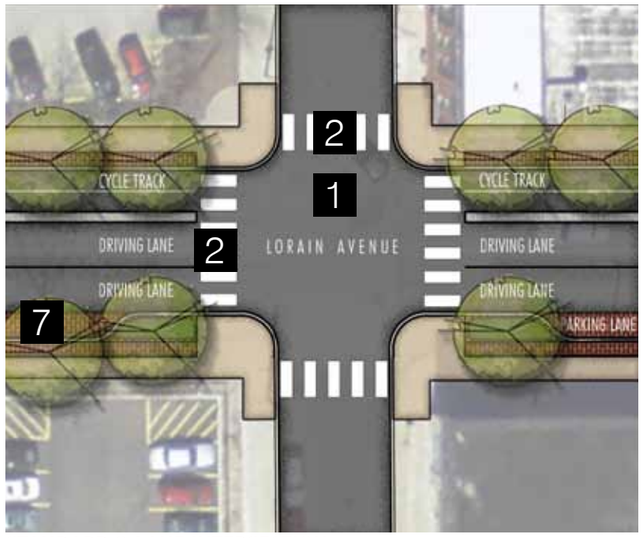
LEGEND:

- Enhanced 2-lane intersection
- Enhanced 2-lane intersection with turn lane or median
- Existing bus stop without shelter
- Existing bus stop with shelter
- 2 travel lanes with turn lane or median

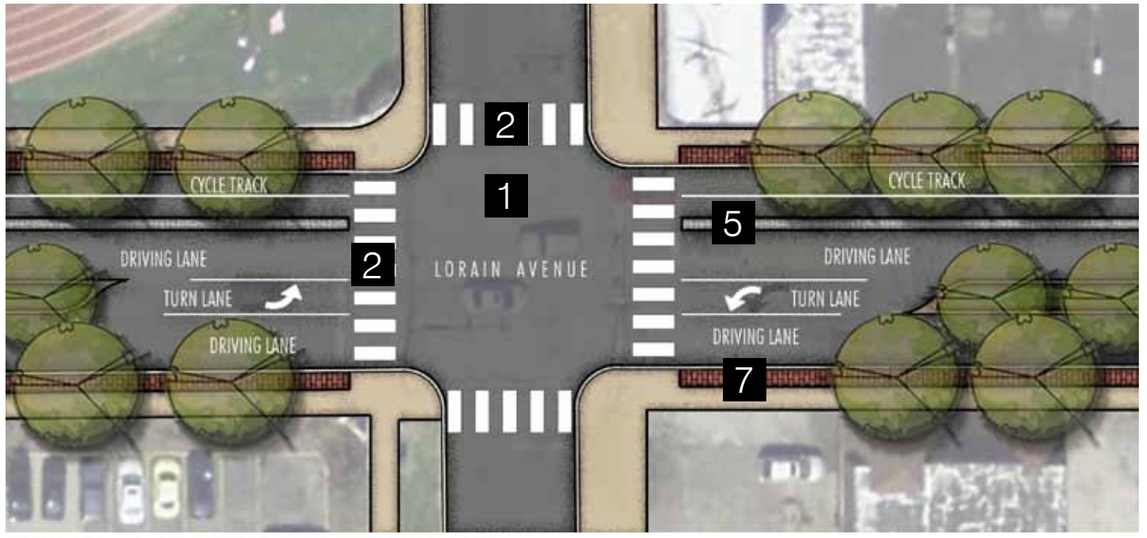
ENLARGEMENT KEY:

1. Asphalt pavement
2. High-contrast, striped crosswalk
3. Plain concrete
4. Stamped, colored concrete crosswalk
5. High-texture, stamped, colored concrete
6. Brick pavers
7. Permeable brick pavers

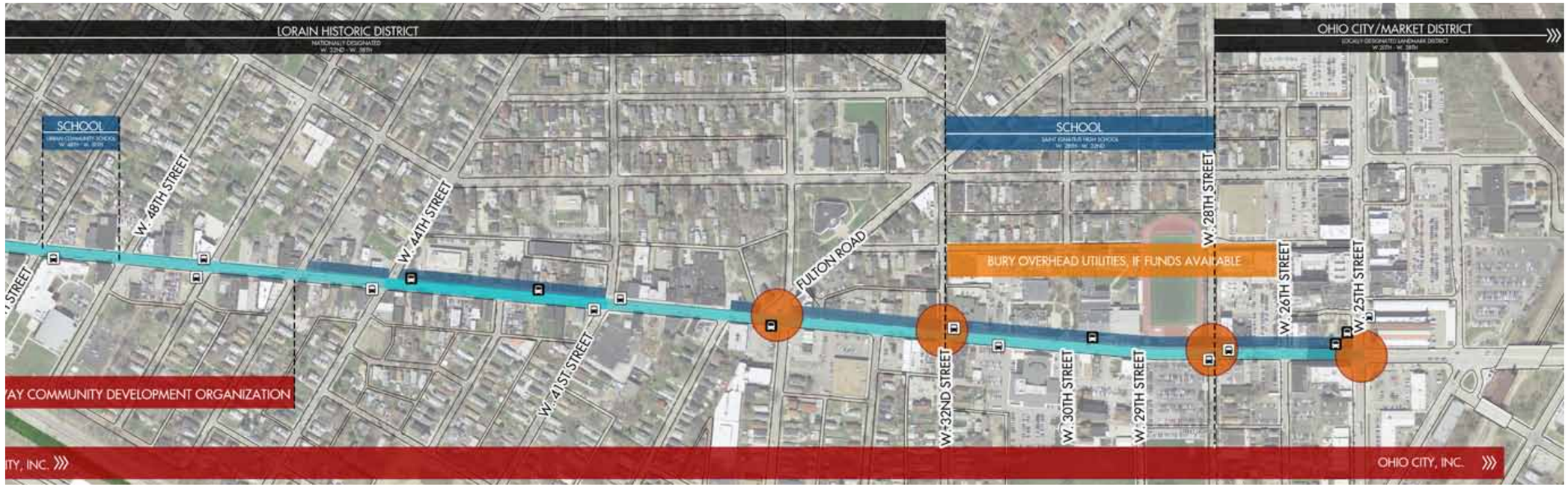
STANDARD INTERSECTION TREATMENTS



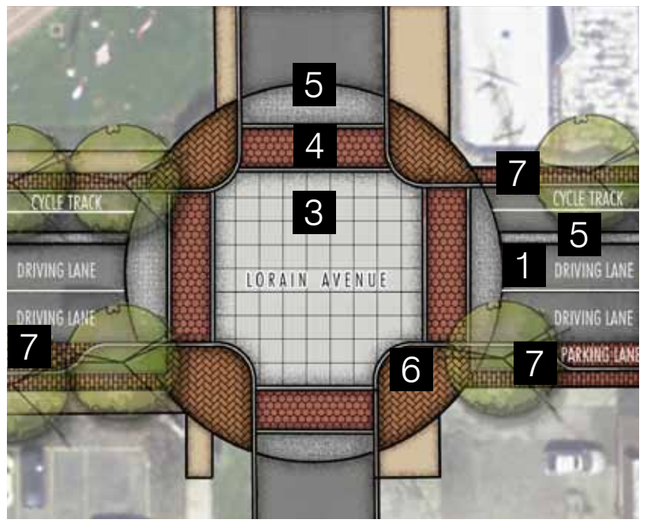
STANDARD 2-LANE INTERSECTION



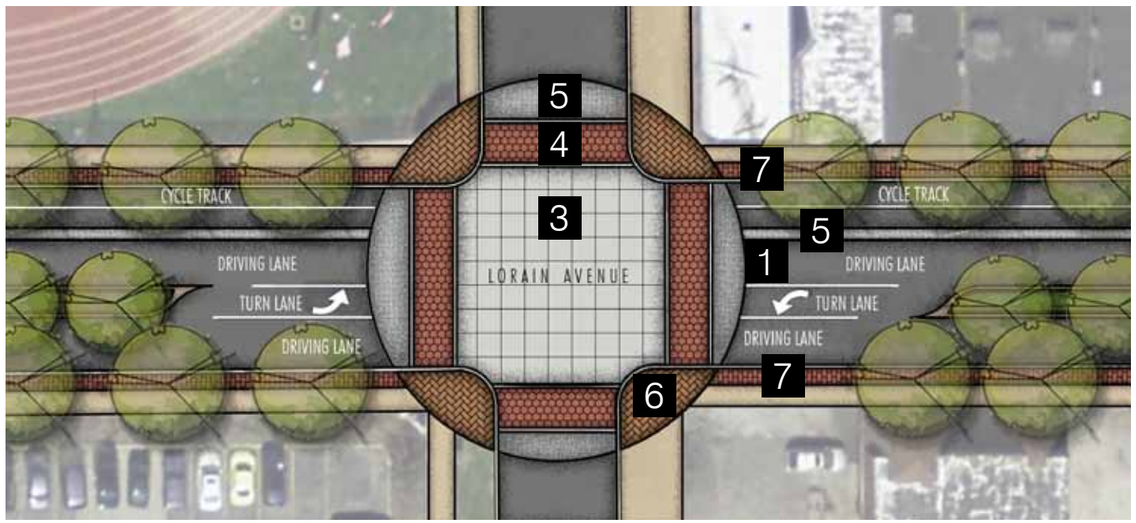
STANDARD 2-LANE INTERSECTION WITH TURN LANE



ENHANCED INTERSECTION TREATMENTS



ENHANCED 2-LANE INTERSECTION



ENHANCED 2-LANE INTERSECTION WITH TURN LANE

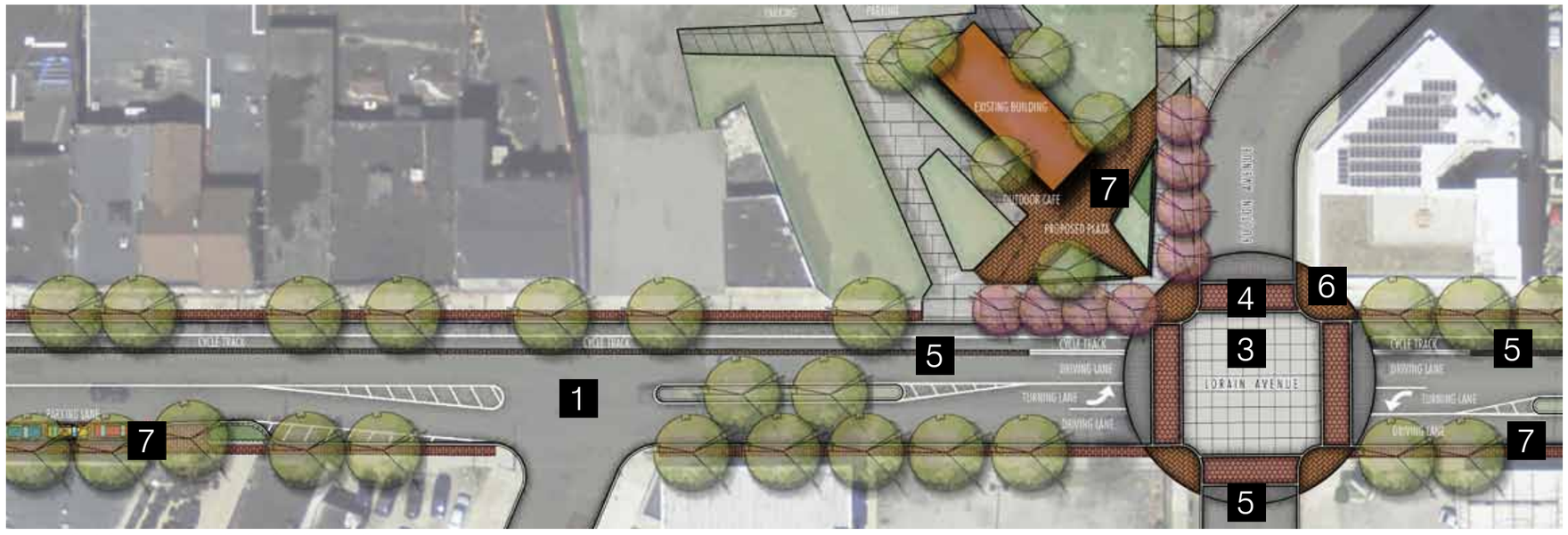
FULTON INTERSECTION

LEGEND:

- Enhanced 2-lane intersection
- Enhanced 2-lane intersection with turn lane or median
- Existing bus stop without shelter
- Existing bus stop with shelter
- 2 travel lanes with turn lane or median

ENLARGEMENT KEY:

1. Asphalt pavement
2. High-contrast, striped crosswalk
3. Plain concrete
4. Stamped, colored concrete crosswalk
5. High-texture, stamped, colored concrete
6. Brick pavers
7. Permeable brick pavers



ENHANCED 2-LANE INTERSECTION & FULTON PLAZA

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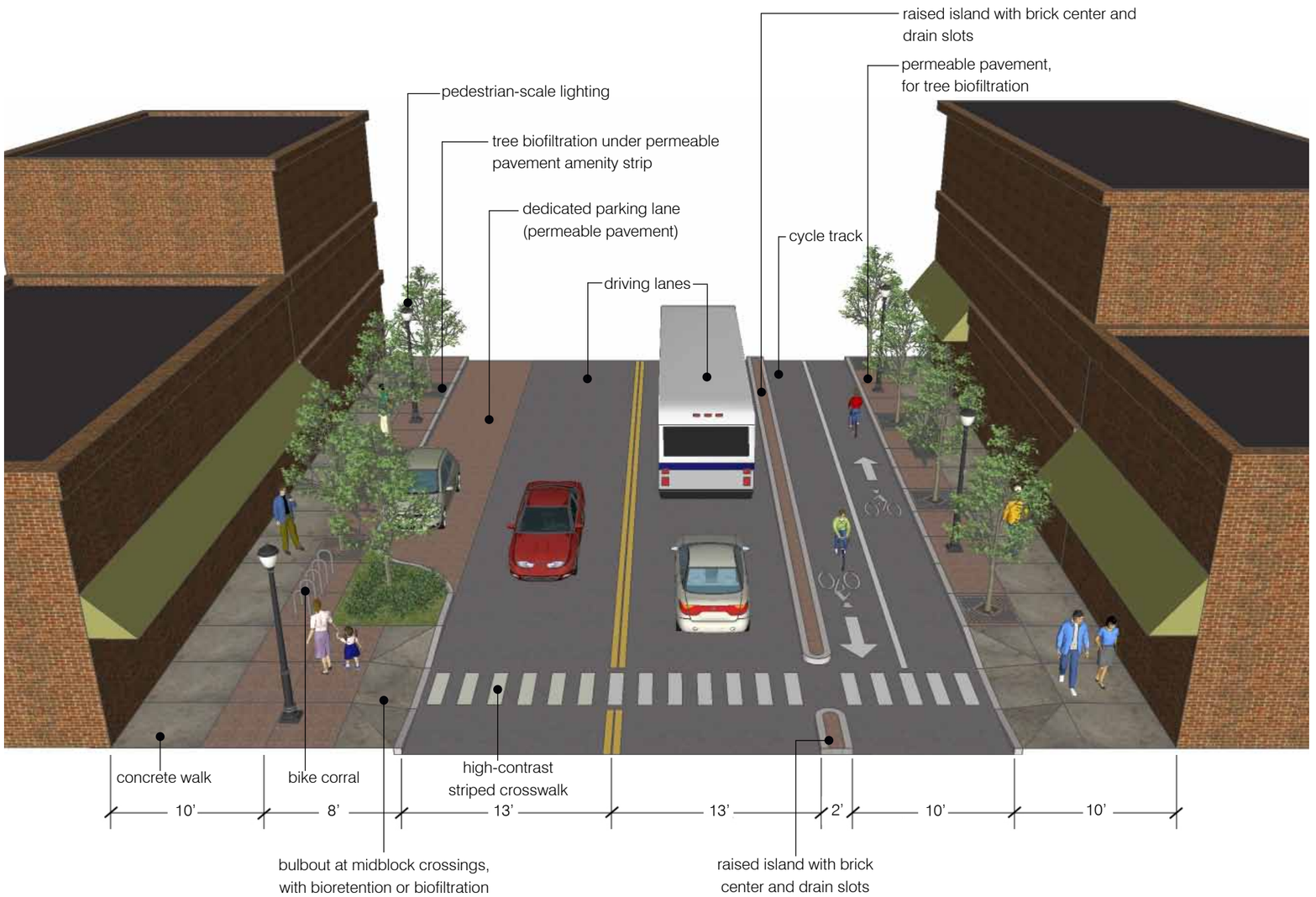
PROPOSED LANE CONFIGURATIONS

Based on the City of Cleveland's Complete and Green Street goals (see page 19) and the public input process, the planning team concluded that the following lane configurations best serve the needs of pedestrians, cyclists, motorists, and merchants.

Proposed dimensions are approximate; exact dimensions will be determined during the design stage

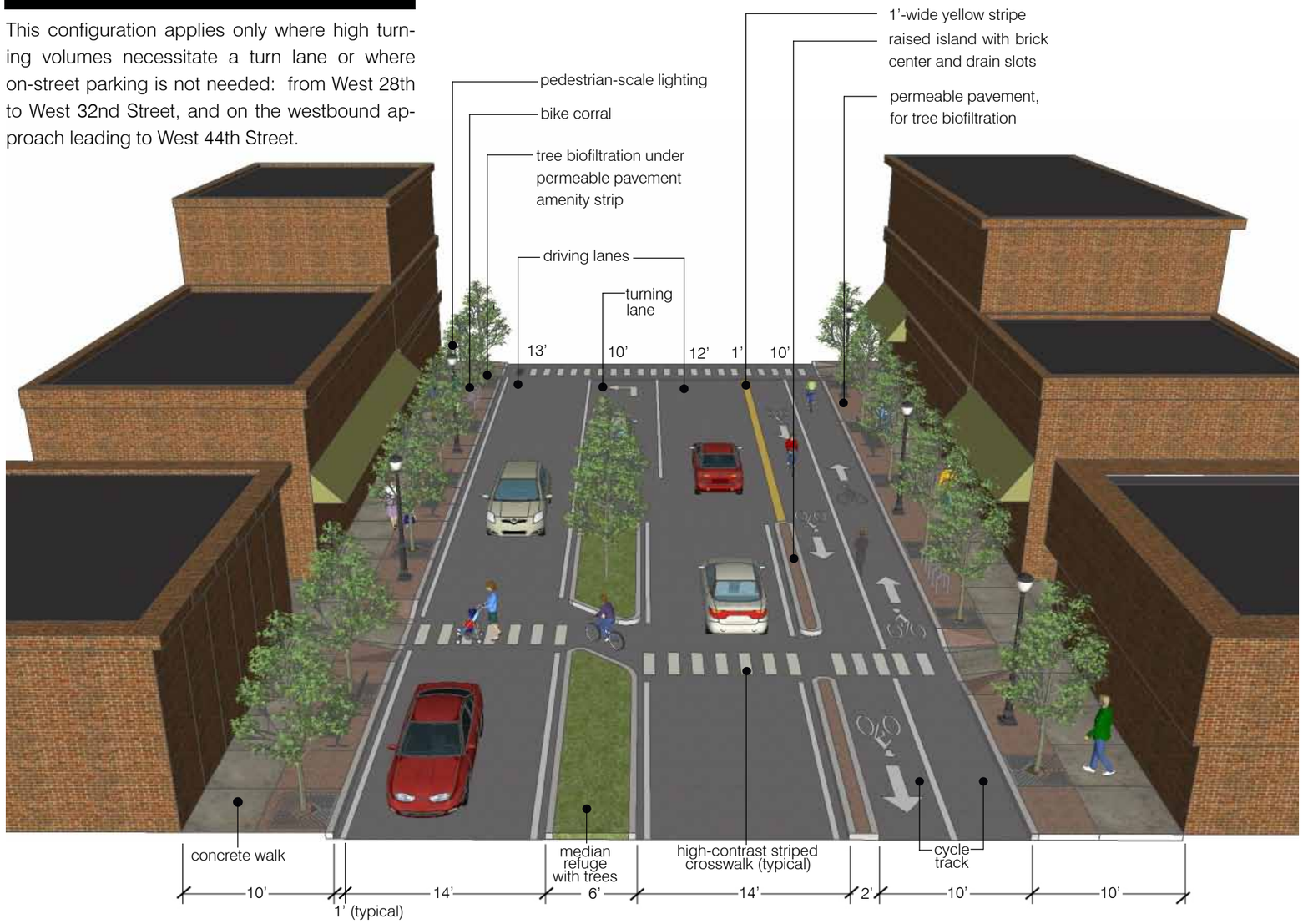
2 LANES WITH DEDICATED PARKING

This configuration applies to the majority of the corridor, and is the preferred configuration.



2 LANES WITH TURN LANE/MEDIAN

This configuration applies only where high turning volumes necessitate a turn lane or where on-street parking is not needed: from West 28th to West 32nd Street, and on the westbound approach leading to West 44th Street.



STREETSCAPE

The consistent use of appropriate streetscape elements can create an identity, reinforce brand, unify a corridor, and create places that attract and retain people. All of the following elements are important to incorporate, for a great street.

PAVEMENT

New materials should have a unique and contemporary feel, but also reference the corridor's historic and architectural context. **This plan recommends brick; stamped, colored concrete; and regular concrete for authenticity, durability, and color longevity.**

SITE FURNISHINGS & PUBLIC ART

Furnishings should complement the surrounding architecture, but offer an opportunity for visual punctuation with color or unique designs. **Based on feedback at stakeholder and public meetings, benches, trash receptacles, and recycling receptacles should possess a blended traditional/contemporary look. Metal is most durable, and black will reinforce the desired classic style.**

As mentioned in the existing conditions section, **many of Lorain's existing bike racks double as public art; this approach should be continued throughout the corridor to add color and artistic flair. Benches, receptacles, and bike racks are needed along the entire length of the study area, and should be located regularly at gathering places and establishments, including restaurants, art galleries, and libraries.**

LIGHTING & UTILITIES

Lighting is necessary for security, a sense of safety, and to encourage pedestrian traffic and gatherings. **A combination of high lights and pedestrian-scale lights will ensure adequate light levels and pedestrian-friendly spaces. Mounting both light types on the same pole will reduce the number of poles needed, and minimize visual clutter.**

Cleveland Public Power is currently planning for a wholesale replacement of its fixtures with LED lamps to reduce the total number of fixtures, establish consistency throughout the City, and decrease maintenance costs. The pole and light style will be historic, per the future CPP standard.

Although overhead utility line burial is expensive, it has a significantly positive impact on corridor aesthetics and makes sense to implement, in focused areas. Overhead wires east of West 60th are limited primarily to power for street lights. **This report recommends utility burial in high volume areas, where funds are available. Where this is not feasible, all poles should be examined for consolidation.**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Photos: (1-4) Pavement materials will complement Lorain's historic architecture. (5) Scuptural bike racks will be continued throughout the Lorain corridor. (6) Preferred trash receptacle (Landscape Forms - Scarborough) (7) Preferred bench (Landscape Forms - Scarborough)


6


7

PARKING

Adequate parking is a must for a viable commercial district. **The corridor plan proposes an all-day, dedicated permeable parking lane on the south side of Lorain where a center turn lane is not needed. Lorain's existing off-street parking areas and vacant lots can also provide additional parking for businesses** (see existing conditions map, pages 9-12, for locations). Several local municipalities provide public parking lots every few blocks (based on commercial density) to effectively accommodate the needs of both merchants and customers.

Additionally, a standard edge treatment should be established throughout the Lorain corridor, similar to the 4'-0" tall ornamental fencing around Saint Ignatius High School's parking lots.

Parking lot edge existing condition

A standard parking lot edge treatment should be established throughout the corridor, similar to the ornamental fence shown here at Saint Ignatius High School.

MAINTENANCE

Lorain's roadway and pedestrian areas should be designed with longevity and maintenance as a top priority. Infrastructure is not sustainable, if its maintenance requirements are beyond the capacity of the responsible entity.

- **This plan proposes tree biofiltration cells to encourage stormwater control and minimize maintenance.**
- **Life cycle costs should be considered** in materials selection and construction detail design for the Lorain streetscape.
- **Quality of construction** will affect longevity and maintenance of Lorain's improvements.

IDENTITY & BRAND

Creating a brand for each of the three districts and delivering those brands consistently – through streetscape elements, signage, and gateway treatments – will contribute to the districts' success. Visitors will know when they have arrived at the district, and will have a good understanding of what the district is about.

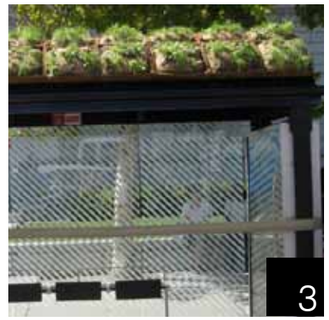
DISTRICT NAME	EXISTING BRAND & IDENTITY	RECOMMENDATIONS
OHIO CITY/ MARKET DISTRICT	• Well-defined brand of an artisan community with historic neighborhoods, food-related businesses, and many non-profits. • Signage and wayfinding fairly well developed • Existing sculptural bike racks reinforce district as an artisan community	• Continue bike rack program, with focus on brand message. • Replace missing Ohio City sign toppers on street signs • Look for opportunities to repeat Ohio City red/white/blue color scheme and stars • Add gateway treatment at ends of district
ECOVILLAGE	• Logo begins to articulate a brand, but EcoVillage identity is nearly non-existent • Sustainability-focused development • Sandy soils allow for green infrastructure	• Add district's logo to benches, trash receptacles, and/or wayfinding signage • Add sign toppers which speak the brand • Add bioretention planters to increase sustain-ability, visibly • Add green roofs to bus shelters within district • Develop public art recycling receptacles and bike racks • Add gateway treatment at ends of district
ANTIQUES	• District brand and signage not clear • Art deco antique sign is effective, but there are few • Historic buildings are attractive and send antique message	• Increase existing antique sign density, within district limits. Remove signs outside of district. • Develop public art bike racks that say "antique" • Add gateway treatment at ends of district

Photos:

1. Continue existing sculptural bike racks
2. Fill in missing sign toppers.
3. Bus shelter with green roof
4. Existing Tremont sign toppers send a green, nature-related message
5. Bike rack concepts for Larchmere Boulevard say "antiques area."
6. Relocate existing Antiques signs to accurately define district


1

2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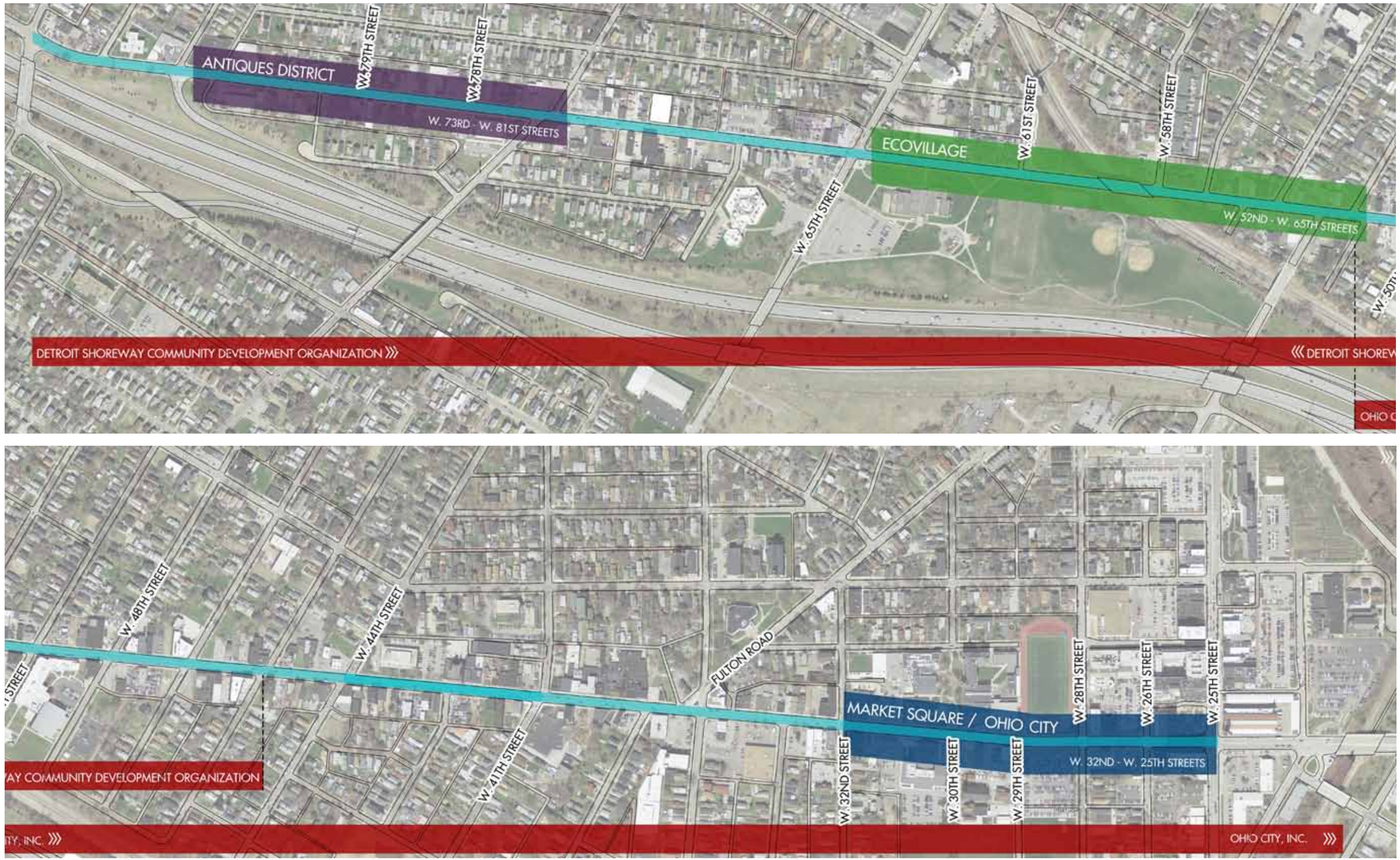
6

BRAND IMPROVEMENT AREAS

This map highlights where brand improvements noted in the chart on the page 30 will occur.



RECOMMENDATIONS SUMMARY

ROADWAY

- Reduce the roadway to 2 driving lanes. Width varies between 13' and 14'.
- Install a 10' cycle track on the north side of Lorain. Include a 2'-wide raised concrete island with brick center to buffer cyclists from vehicular traffic. Pavement should be marked with the universal bike lane symbol.
- Install an 8' wide permeable parking lane throughout the corridor, where feasible. These areas will have 13' driving lanes.
- Install a 6' wide center median and turn lane at intersections with high traffic volume (see plan, pages 24-25, for locations). Where mid-block crossings occur, provide a pedestrian refuge (a 4-6' cut throughthe median angled toward on-coming traffic -- see graphic, page 29). Areas of the corridor with a center median will not include a permeable parking lane, and the raised island cycle track buffer will be replaced with a 1' wide, yellow stripe. Driving lanes will be 14'.
- See "Enhanced Intersections" for information on specialty roadway pavement.

PARKING

- Provide an all-day, dedicated permeable parking lane on the south side of Lorain, where feasible (see "Roadway").
- Utilize existing vacant lots for parking.
- Establish a consistent parking lot edge treatment (such as ornamental fence currently installed at Saint Ignatius High School).

STANDARD INTERSECTIONS

- Replace crosswalks with highly-visible continental or ladder striping.
- Install pedestrian countdown signals.
- Install ADA compliant curb ramps.
- Place a sign in the middle of the street at non-signalized intersections to denote a pedestrian crossing zone (where necessary).
- Install ADA compliant curb ramps.

ENHANCED INTERSECTIONS

- See map, pages 24-25, for locations.
- Create sidewalk bulbouts (see plan enlargements, page 25).
- Install high-texture, stamped, colored concrete outside of crosswalks.
- Install stamped, colored concrete within crosswalks. Select colors and textures that provide high visual contrast.
- Install stamped, colored concrete within crosswalks. Select colors and textures that provide high visual contrast.
- Consider potential gateway treatments for Saint Ignatius High School, and the Antiques and EcoVillage Districts during the design process.
- Install PHB systems at intersections with high traffic volumes, such as Saint Ignatius High School.

SIDEWALKS

- Meet all ADA requirements.
- Install 6'-wide concrete walk.
- Install 4' permeable pavement amenity strip adjacent to walk
- Eliminate sidewalk clutter, including extraneous signage on utility poles, pay phones, and newspaper vending boxes.
- Replace individual parking meters with parking pay stations.
- Consider the burial of utilities in high-volume pedestrian areas, where funds are available.
- Maintain clear lines-of-sight at all sidewalk corners and intersections.
- Examine all utility poles for consolidation.
- Install pedestrian-scale lighting.
- Explore opportunities for significant gathering and meeting places, where space and land use beyond the right of way permits.
- See "Planting" for information on sidewalk tree plantings.

BUS TRANSIT (TWE's)

- Install new bus shelters (same model as shelters on W. 25th street - see photo, page 21).
- Provide trash receptacles, recycling receptacles, and seating at all TWE's.
- Install low-maintenance planting or bioretention at TWE's where space allows (and planting will be properly maintained).
- Install pedestrian-scaled lighting.
- Install specialty pavement.
- Install green roofs on EcoVillage bus shelter roofs.
- Increase space between TWE's.
- Locate TWE's on the far side of intersections.

PLANTING

- Install street trees with appropriate mature sizes and tolerance of urban conditions (e.g. drought, salt, low maintenance) at regular intervals along the permeable pavement amenity strip.
- Install bioretention cells only in areas where they are needed for stormwater control, public awareness or education is desired, and they will be properly maintained.

SUSTAINABILITY

- Use an effective combination of permeable pavement, bioretention, and tree biofiltration to clean, slow, and reduce rainwater runoff.

FURNISHINGS

- Install additional sculptural bike racks that also function as public art.
- Install new benches and trash/recycling receptacles throughout corridor (see page 30 for preferred models).

DISTRICT BRANDING & IDENTITY

- See chart, page 32, for detailed information on district branding/identity improvements.

MAINTENANCE

- Consider life cycle costs in materials selection and construction detailing.
- Design with longevity and maintenance as a top priority.

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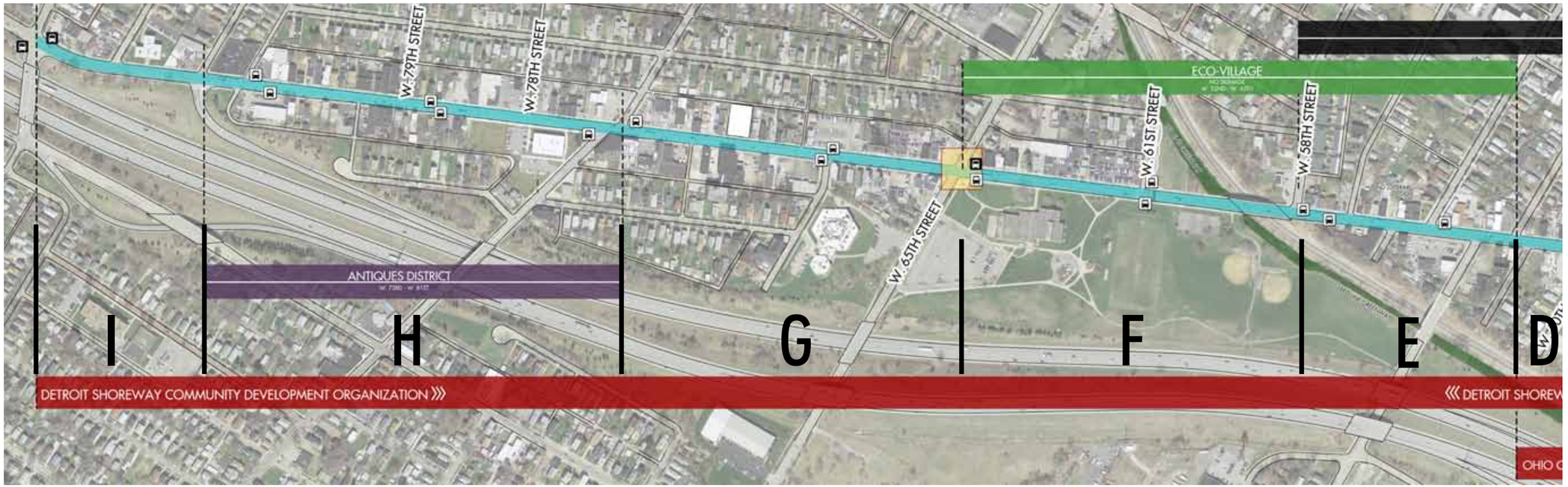
chapter 5: cost estimates

KEY MAP

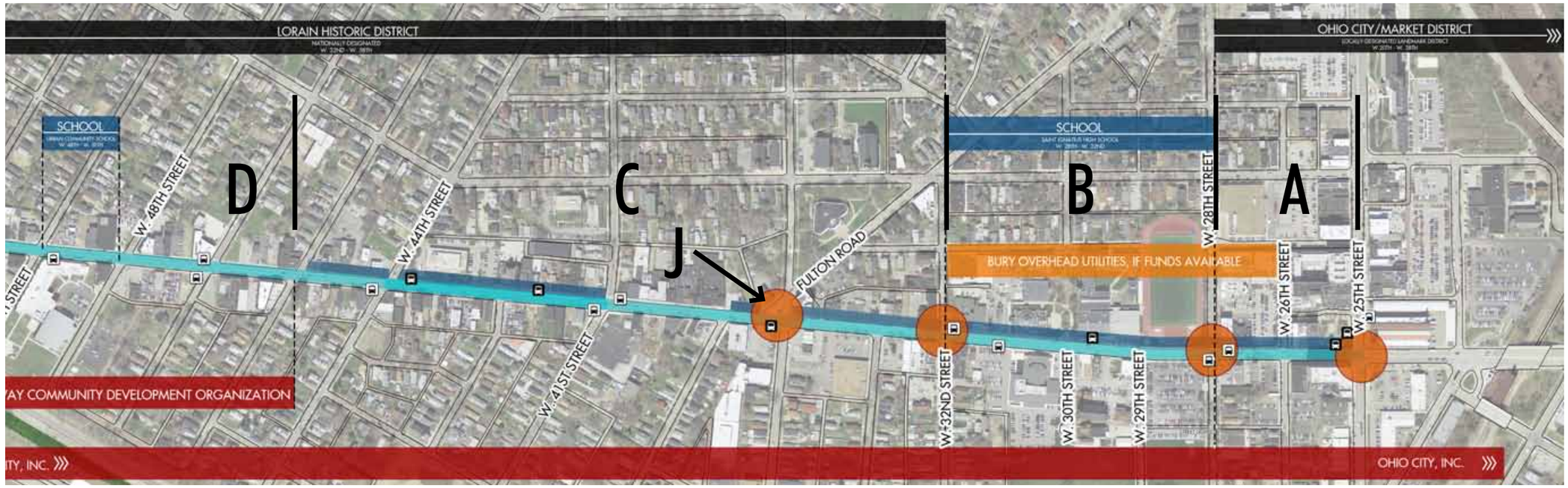


LEGEND:

- Enhanced 2-lane intersection
- Enhanced 2-lane intersection with turn lane or median
- Existing bus stop without shelter
- Existing bus stop with shelter
- 2 travel lanes with turn lane or median

The following sheets present cost estimates for Lorain Avenue. The study area was divided into 9 plan sections, and each section was estimated individually. Cost estimates do not include:

- Utility work
- Utility pole consolidation
- Roadway/pedestrian lighting (assume provided by CPP)
- Storm sewer improvements
- Parking meters/pay stations
- RRFB or HAWKS (design item)
- Enhancements outside of right-of-way
- Overhead utility burial


LORAIN HISTORIC DISTRICT
NATIONALLY DESIGNATED
W. 32ND - W. 28TH
OHIO CITY/MARKET DISTRICT
LOCALLY DESIGNATED LANDMARK DISTRICT
W. 30TH - W. 28TH
SCHOOL
URBAN COMMUNITY SCHOOL
W. 48TH - W. 45TH
SCHOOL
SAINT IGNATIUS HIGH SCHOOL
W. 29TH - W. 32ND
D
C
B
A
J
W. 48TH STREET
W. 44TH STREET
W. 41ST STREET
FULTON ROAD
W. 32ND STREET
W. 30TH STREET
W. 29TH STREET
W. 28TH STREET
W. 26TH STREET
W. 25TH STREET
BURY OVERHEAD UTILITIES, IF FUNDS AVAILABLE
AY COMMUNITY DEVELOPMENT ORGANIZATION
TY, INC.
OHIO CITY, INC.

A

W. 25TH - W. 28TH STREETS

ITEM #	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
ROADWAY					
1	Demolition Roadway	42,000	SF	$1.00	$42,000.00
2	Grading Operations (Assume 1')	1,556	CY	$10.00	$15,555.56
3	Concrete Curbs	1,500	LF	$25.00	$37,500.00
4	Asphalt Roadway	2,500	SY	$35.00	$87,500.00
5	Planted Median Soil (18") and Grass	1,950	SF	$1.55	$3,022.50
6	Pedestrian Pavers at Enhanced Intersection	3,900	SF	$20.00	$78,000.00
7	Stamped Colored Concrete at Enhanced Intersection	10,350	SF	$25.00	$258,750.00
8	Plain Concrete within Enhanced Intersection	850	SY	$75.00	$63,750.00
9	Striping	1	LUMP	$7,000.00	$7,000.00
10	2'-Wide Raised Island with Concrete Paver Inset for Cycle Track	900	LF	$65.00	$58,500.00
11	Traffic Signalization at Currently Signaled Intersections (includes cycle track control)	2	EA	$300,000.00	$600,000.00
ROADWAY SUBTOTAL					**$1,251,578.06**
STREETSCAPE					
1	Demolition Streetscape	17,500	SF	$1.00	$17,500.00
2	Grading Operations - 1'	648	CY	$10.00	$6,481.48
3	Trees to be Removed	18	EA	$100.00	$1,800.00
4	Sidewalk Concrete	1,560	SY	$50.00	$78,000.00
5	Amenity Strip - Permeable Pavers	4,000	SF	$15.00	$60,000.00
6	Curb Ramps	12	EA	$1,000.00	$12,000.00
7	Street Trees	25	EA	$400.00	$10,000.00
8	Paver Grate	25	EA	$1,500.00	$37,500.00
9	Structural Soil within Amenity Strip	370	CY	$70.00	$25,900.00
10	Bike Racks	5	EA	$1,800.00	$9,000.00
11	Benches	4	EA	$2,200.00	$8,800.00
12	Trash Receptacles	4	EA	$1,800.00	$7,200.00
13	Gateway Feature	1	Allow	$50,000.00	$50,000.00
STREETSCAPE SUBTOTAL					**$324,181.48**
COMBINED ROADWAY / STREETSCAPE SUBTOTAL					**$1,575,759.54**
+10% CONTINGENCY					$157,575.95
ROADWAY / STREETSCAPE TOTAL					**$1,733,335.49**

B

W. 28TH - W. 32ND STREETS

ITEM #	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
ROADWAY					
1	Demolition Roadway	52,000	SF	$1.00	$52,000.00
2	Grading Operations (Assume 1')	1,926	CY	$10.00	$19,259.26
3	Concrete Curbs	2,410	LF	$25.00	$60,250.00
4	Asphalt Roadway	4,150	SY	$35.00	$145,250.00
5	Planted Median Soil (18") and Grass	7,500	SF	$1.55	$11,625.00
6	Pedestrian Pavers at Enhanced Intersection	1,000	SF	$15.00	$15,000.00
7	Stamped Colored Concrete at Enhanced Intersection	2,400	SF	$25.00	$60,000.00
8	Plain Concrete within Enhanced Intersection	350	SY	$75.00	$26,250.00
9	Striping	1	LUMP	$7,000.00	$7,000.00
10	2'-Wide Raised Island with Paver Inset for Cycle Track	1,975	LF	$65.00	$128,375.00
11	Traffic Signalization at Currently Signaled Intersections (includes cycle track control)	3	EA	$300,000.00	900000
ROADWAY SUBTOTAL					**$1,425,009.26**
STREETSCAPE					
1	Demolition Streetscape	26,000	SF	$1.00	$26,000.00
2	Grading Operations - 1'	963	CY	$10.00	$9,629.63
3	Trees to be Removed	26	EA	$100.00	$2,600.00
4	Sidewalk Concrete	1,980	SY	$50.00	$99,000.00
5	Amenity Strip - Permeable Pavers	7,700	SF	$15.00	$115,500.00
6	Curb Ramps	13	EA	$1,000.00	$13,000.00
7	Street Trees	47	EA	$400.00	$18,800.00
8	Paver Grate	47	EA	$1,500.00	$70,500.00
9	Structural Soil within Amenity Strip	713	CY	$70.00	$49,907.41
10	Bike Racks	10	EA	$1,800.00	$18,000.00
11	Benches	8	EA	$2,200.00	$17,600.00
12	Trash Receptacles	8	EA	$1,800.00	$14,400.00
13	Gateway Feature	1	Allow	$50,000.00	$50,000.00
STREETSCAPE SUBTOTAL					**$504,937.04**
COMBINED ROADWAY / STREETSCAPE SUBTOTAL					**$1,929,946.30**
+10% CONTINGENCY					$192,994.63
ROADWAY / STREETSCAPE TOTAL					**$2,122,940.93**

C

W. 32 - W.45TH STREETS

ITEM #	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
ROADWAY					
1	Demolition Roadway	140,200	SF	$1.00	$140,200.00
2	Grading Operations (Assume 1')	5,193	CY	$10.00	$51,925.93
3	Concrete Curbs	6,300	LF	$25.00	$157,500.00
4	Asphalt Roadway	12,500	SY	$35.00	$437,500.00
5	Planted Median Soil (18") and Grass	7,400	SF	$1.55	$11,470.00
6	Permeable Parking Lane	8,000	SF	$20.00	$160,000.00
7	Pedestrian Pavers at Enhanced Intersection	1,000	SF	$20.00	$20,000.00
8	Stamped Colored Concrete at Enhanced Intersection	2,500	SF	$25.00	$62,500.00
9	Plain Concrete within Enhanced Intersection	350	SY	$75.00	$26,250.00
10	Striping	1	LUMP	$7,000.00	$7,000.00
11	2'-Wide Raised Island with Paver Inset for Cycle Track	4,700	LF	$65.00	$305,500.00
12	Traffic Signalization at Currently Signaled Intersections (includes cycle track control)	3	EA	$300,000.00	900000
ROADWAY SUBTOTAL					**$2,279,845.93**
STREETSCAPE					
1	Demolition Streetscape	54,600	SF	$1.00	$54,600.00
2	Grading Operations - 1'	2,022	CY	$10.00	$20,222.22
3	Trees to be Removed	29	EA	$100.00	$2,900.00
4	Sidewalk Concrete	4,205	SY	$50.00	$210,250.00
5	Amenity Strip - Permeable Pavers	18,075	SF	$15.00	$271,125.00
6	Curb Ramps	24	EA	$1,000.00	$24,000.00
7	Street Trees	100	EA	$400.00	$40,000.00
8	Paver Grate	100	EA	$1,500.00	$150,000.00
9	Structural Soil within Amenity Strip	187	CY	$70.00	$13,107.00
10	Planting within Bulbout	1,100	SF	$6.00	$6,600.00
11	Planting Medium (18") within Bulbout	61	CY	$35.00	$2,135.00
12	Bike Racks	25	EA	$1,800.00	$45,000.00
13	Benches	20	EA	$2,200.00	$44,000.00
14	Trash Receptacles	20	EA	$1,800.00	$36,000.00
STREETSCAPE SUBTOTAL					**$919,939.22**
COMBINED ROADWAY / STREETSCAPE SUBTOTAL					**$3,199,785.14**
+10% CONTINGENCY					$319,978.51
ROADWAY / STREETSCAPE TOTAL					**$3,519,763.66**

D

W. 45TH - W. 52ND STREETS

ITEM #	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
ROADWAY					
1	Demolition Roadway	54,300	SF	$1.00	$54,300.00
2	Grading Operations (Assume 1')	2,011	CY	$10.00	$20,111.11
3	Concrete Curbs	2,310	LF	$25.00	$57,750.00
4	Asphalt Roadway	4,850	SY	$35.00	$169,750.00
5	Permeable Parking Lane	6,050	SF	$20.00	$121,000.00
6	Striping	1	LUMP	$7,000.00	$7,000.00
7	2'-Wide Raised Island with Paver Inset for Cycle Track	1,910	LF	$65.00	$124,150.00
8	Traffic Signalization at Currently Signaled Intersections (includes cycle track control)	1	EA	$300,000.00	$300,000.00
ROADWAY SUBTOTAL					**$854,061.11**
STREETSCAPE					
1	Demolition Streetscape	25,200	SF	$1.00	$25,200.00
2	Grading Operations - 1'	933	CY	$10.00	$9,333.33
3	Trees to be Removed	0	EA	$100.00	$0.00
4	Sidewalk Concrete	2,120	SY	$50.00	$106,000.00
5	Amenity Strip - Permeable Pavers	6,860	SF	$15.00	$102,900.00
6	Curb Ramps	12	EA	$1,000.00	$12,000.00
7	Street Trees	45	EA	$400.00	$18,000.00
8	Paver Grate	45	EA	$1,500.00	$67,500.00
9	Structural Soil within Amenity Strip	635	CY	$70.00	$44,462.96
10	Planting within Bulbout	900	SF	$6.00	$5,400.00
11	Planting Medium (18") within Bulbout	50	CY	$35.00	$1,750.00
12	Bike Racks	20	EA	$1,800.00	$36,000.00
13	Benches	10	EA	$2,200.00	$22,000.00
14	Trash Receptacles	10	EA	$1,800.00	$18,000.00
STREETSCAPE SUBTOTAL					**$468,546.30**
COMBINED ROADWAY / STREETSCAPE SUBTOTAL					**$1,322,607.41**
+10% CONTINGENCY					$132,260.74
ROADWAY / STREETSCAPE TOTAL					**$1,454,868.15**

E

W. 52ND - W. 58TH STREETS

ITEM #	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
ROADWAY					
1	Demolition Roadway	62,600	SF	$1.00	$62,600.00
2	Grading Operations (Assume 1')	2,319	CY	$10.00	$23,185.19
3	Concrete Curbs	2,360	LF	$25.00	$59,000.00
4	Asphalt Roadway	5,690	SY	$35.00	$199,150.00
5	Permeable Parking Lane	5,750	SF	$20.00	$115,000.00
6	Striping	1	LUMP	$7,000.00	$7,000.00
7	2'-Wide Raised Island with Paver Inset for Cycle Track	2,270	LF	$65.00	$147,550.00
8	Traffic Signalization at Currently Signaled Intersections (includes cycle track control)	2	EA	$300,000.00	$600,000.00
ROADWAY SUBTOTAL					**$1,213,485.19**
STREETSCAPE					
1	Demolition Streetscape	28,800	SF	$1.00	$28,800.00
2	Grading Operations - 1'	1,067	CY	$10.00	$10,666.67
3	Trees to be Removed	1	EA	$100.00	$100.00
4	Sidewalk Concrete	2,305	SY	$50.00	$115,250.00
5	Amenity Strip - Permeable Pavers	8,100	SF	$15.00	$121,500.00
6	Curb Ramps	15	EA	$1,000.00	$15,000.00
7	Street Trees	50	EA	$400.00	$20,000.00
8	Paver Grate	50	EA	$1,500.00	$75,000.00
9	Structural Soil within Amenity Strip	750	CY	$70.00	$52,500.00
10	Planting within Bulbout	1,200	SF	$6.00	$7,200.00
11	Planting Medium (18") within Bulbout	67	CY	$35.00	$2,345.00
12	Bike Racks	5	EA	$1,800.00	$9,000.00
13	Benches	10	EA	$2,200.00	$22,000.00
14	Trash Receptacles	10	EA	$1,800.00	$18,000.00
STREETSCAPE SUBTOTAL					**$497,361.67**
COMBINED ROADWAY / STREETSCAPE SUBTOTAL					**$1,710,846.85**
+10% CONTINGENCY					$171,084.69
ROADWAY / STREETSCAPE TOTAL					**$1,881,931.54**

F

W. 58TH - W.65TH STREETS

ITEM #	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
ROADWAY					
1	Demolition Roadway	65,500	SF	$1.00	$65,500.00
2	Grading Operations (Assume 1')	2,426	CY	$10.00	$24,259.26
3	Concrete Curbs	2,705	LF	$25.00	$67,625.00
4	Asphalt Roadway	5,700	SY	$35.00	$199,500.00
5	Permeable Parking Lane	8,900	SF	$20.00	$178,000.00
6	Pedestrian Pavers at Enhanced Intersection	2,100	SF	$15.00	$31,500.00
7	Stamped Colored Concrete at Enhanced Intersection	3,000	SF	$25.00	$75,000.00
8	Plain Concrete within Enhanced Intersection	350	SY	$75.00	$26,250.00
9	Striping	1	LUMP	$7,000.00	$7,000.00
10	2'-Wide Raised Island with Paver Inset for Cycle Track	2,695	LF	$65.00	$175,175.00
11	Traffic Signalization at Currently Signaled Intersections (includes cycle track control)	1	EA	$300,000.00	$300,000.00
ROADWAY SUBTOTAL					**$1,149,809.26**
STREETSCAPE					
1	Demolition Streetscape	31,160	SF	$1.00	$31,160.00
2	Grading Operations - 1'	1,154	CY	$10.00	$11,540.74
3	Trees to be Removed	0	EA	$100.00	$0.00
4	Sidewalk Concrete	2,705	SY	$50.00	$135,250.00
5	Amenity Strip - Permeable Pavers	10,550	SF	$15.00	$158,250.00
6	Curb Ramps	5	EA	$1,000.00	$5,000.00
7	Street Trees	57	EA	$400.00	$22,800.00
8	Paver Grate	57	EA	$1,500.00	$85,500.00
9	Structural Soil within Amenity Strip	977	CY	$70.00	$68,379.63
10	Planting withing Bulbout	300	SF	$6.00	$1,800.00
11	Planting Medium (18") within Bulbout	17	CY	$35.00	$595.00
12	Bike Racks	5	EA	$1,800.00	$9,000.00
13	Benches	6	EA	$2,200.00	$13,200.00
14	Trash Receptacles	6	EA	$1,800.00	$10,800.00
STREETSCAPE SUBTOTAL					**$553,275.37**
COMBINED ROADWAY / STREETSCAPE SUBTOTAL					**$1,703,084.63**
+10% CONTINGENCY					$170,308.46
ROADWAY / STREETSCAPE TOTAL					**$1,873,393.09**

G

W. 65TH - W. 73RD STREETS

ITEM #	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
ROADWAY					
1	Demolition Roadway	60,944	SF	$1.00	$60,944.00
2	Grading Operations (Assume 1')	2,257	CY	$10.00	$22,571.85
3	Concrete Curbs	3,265	LF	$25.00	$81,625.00
4	Asphalt Roadway	5,200	SY	$35.00	$182,000.00
5	Permeable Parking Lane	8,500	SF	$20.00	$170,000.00
6	Striping	1	LUMP	$7,000.00	$7,000.00
7	2'-Wide Raised Island with Paver Inset for Cycle Track	2,660	LF	$65.00	$172,900.00
8	Traffic Signalization at Currently Signaled Intersections (includes cycle track control)	1	EA	$300,000.00	$300,000.00
ROADWAY SUBTOTAL					**$997,040.85**
STREETSCAPE					
1	Demolition Streetscape	32,100	SF	$1.00	$32,100.00
2	Grading Operations - 1'	1,189	CY	$10.00	$11,888.89
3	Trees to be Removed	3	EA	$100.00	$300.00
4	Sidewalk Concrete	2,565	SY	$50.00	$128,250.00
5	Amenity Strip - Permeable Pavers	9,930	SF	$15.00	$148,950.00
6	Curb Ramps	9	EA	$1,000.00	$9,000.00
7	Street Trees	68	EA	$400.00	$27,200.00
8	Paver Grate	68	EA	$1,500.00	$102,000.00
9	Structural Soil within Amenity Strip	919	CY	$70.00	$64,361.11
10	Planting within Bulbout	900	SF	$6.00	$5,400.00
11	Planting Medium (18") within Bulbout	50	CY	$35.00	$1,750.00
12	Bike Racks	15	EA	$1,800.00	$27,000.00
13	Benches	10	EA	$2,200.00	$22,000.00
14	Trash Receptacles	10	EA	$1,800.00	$18,000.00
STREETSCAPE SUBTOTAL					**$598,200.00**
COMBINED ROADWAY / STREETSCAPE SUBTOTAL					**$1,595,240.85**
+10% CONTINGENCY					$159,524.09
ROADWAY / STREETSCAPE TOTAL					**$1,754,764.94**

H

W. 73RD - W. 81ST STREETS

ITEM #	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
ROADWAY					
1	Demolition Roadway	81,270	SF	$1.00	$81,270.00
2	Grading Operations (Assume 1')	3,010	CY	$10.00	$30,100.00
3	Concrete Curbs	4,610	LF	$25.00	$115,250.00
4	Asphalt Roadway	7,275	SY	$35.00	$254,625.00
5	Permeable Parking Lane	10,900	SF	$20.00	$218,000.00
6	Striping	1	LUMP	$7,000.00	$7,000.00
7	2'-Wide Raised Island with Paver Inset for Cycle Track	2,040	LF	$65.00	$132,600.00
8	Traffic Signalization at Currently Signaled Intersections (includes cycle track control)	1	EA	$300,000.00	$300,000.00
ROADWAY SUBTOTAL					**$1,138,845.00**
STREETSCAPE					
1	Demolition Streetscape	39,000	SF	$1.00	$39,000.00
2	Grading Operations - 1'	1,444	CY	$10.00	$14,444.44
3	Trees to be Removed	13	EA	$100.00	$1,300.00
4	Sidewalk Concrete	3,110	SY	$50.00	$155,500.00
5	Amenity Strip - Permeable Pavers	11,970	SF	$15.00	$179,550.00
6	Curb Ramps	13	EA	$1,000.00	$13,000.00
7	Street Trees	72	EA	$400.00	$28,800.00
8	Paver Grate	72	EA	$1,500.00	$108,000.00
9	Structural Soil within Amenity Strip	1108	CY	$70.00	$77,583.33
10	Planting within Bulbout	600	SF	$6.00	$3,600.00
11	Planting Medium (18") within Bulbout	34	CY	$35.00	$1,190.00
12	Bike Racks	15	EA	$1,800.00	$27,000.00
13	Benches	12	EA	$2,200.00	$26,400.00
14	Trash Receptacles	12	EA	$1,800.00	$21,600.00
STREETSCAPE SUBTOTAL					**$696,967.78**
COMBINED ROADWAY / STREETSCAPE SUBTOTAL					**$1,835,812.78**
+10% CONTINGENCY					$183,581.28
ROADWAY / STREETSCAPE TOTAL					**$2,019,394.06**

1

W. 81ST - W. 85TH STREETS

ITEM #	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
ROADWAY					
1	Demolition Roadway	33,900	SF	$1.00	$33,900.00
2	Grading Operations (Assume 1')	1,256	CY	$10.00	$12,555.56
3	Concrete Curbs	1,415	LF	$25.00	$35,375.00
4	Asphalt Roadway	2,985	SY	$35.00	$104,475.00
5	Permeable Parking Lane	4,335	SF	$20.00	$86,700.00
6	Striping	1	LUMP	$7,000.00	$7,000.00
7	2'-Wide Raised Island with Paver Inset for Cycle Track	1,235	LF	$65.00	$80,275.00
8	Traffic Signalization at Currently Signaled Intersections (includes cycle track control)	1	EA	$300,000.00	$300,000.00
ROADWAY SUBTOTAL					**$660,280.56**
STREETSCAPE					
1	Demolition Streetscape	12,750	SF	$1.00	$12,750.00
2	Grading Operations - 1'	472	CY	$10.00	$4,722.22
3	Trees to be Removed	1	EA	$100.00	$100.00
4	Sidewalk Concrete	1,015	SY	$50.00	$50,750.00
5	Amenity Strip - Permeable Pavers	3,950	SF	$15.00	$59,250.00
6	Planting within Bulbout	300	SF	$6.00	$1,800.00
7	Planting Medium (18") within Bulbout	17	CY	$35.00	$595.00
8	Curb Ramps	6	EA	$1,000.00	$6,000.00
9	Street Trees	24	EA	$400.00	$9,600.00
10	Paver Grate	24	EA	$1,500.00	$36,000.00
11	Structural Soil within Amenity Strip	366	CY	$70.00	$25,601.85
12	Bike Racks	5	EA	$1,800.00	$9,000.00
13	Benches	2	EA	$2,200.00	$4,400.00
14	Trash Receptacles	2	EA	$1,800.00	$3,600.00
STREETSCAPE SUBTOTAL					**$224,169.07**
COMBINED ROADWAY / STREETSCAPE SUBTOTAL					**$884,449.63**
+10% CONTINGENCY					$88,444.96
ROADWAY / STREETSCAPE TOTAL					**$972,894.59**
ROADWAY / STREETSCAPE GRAND TOTAL					**$17,333,286.44**

J

Fulton Road Plaza (see page 38 for Fulton Road Intersection Costs)

ITEM #	ITEM	QUANTITY	UNIT	UNIT COST	TOTAL COST
STREETSCAPE					
1	Incidentals, Bonds, Mobilization	1	LS	$5,000.00	$5,000.00
2	Demolition Streetscape	25,000	SF	$1.00	$25,000.00
3	Drainage - Raingardens	1	LS	$7,500.00	$7,500.00
4	Seat Walls	150	LF	$200.00	$30,000.00
5	Concrete Curbs	220	LF	$30.00	$6,600.00
6	Concrete Walkway	5,450	SF	$6.00	$32,700.00
7	Pervious Paving	2,200	SF	$15.00	$33,000.00
8	Concrete Curbs at Tree Planting	1,800	SF	$6.50	$11,700.00
9	Curb Ramps	3	EA	$2,000.00	$6,000.00
10	16' Ornamental Lighting	3	EA	$5,000.00	$15,000.00
11	Structural Soil (30") below Pervious Pavers	204	CY	$70.00	$14,259.26
12	Planting within Planters	1	LS	$15,000.00	$15,000.00
13	Topsoil (6") within Lawn areas.	160	CY	$25.00	$4,000.00
14	Fine Grade, Seed and Mulch	1,070	SY	$1.10	$1,177.00
15	Irrigation	1	LS	$9,000.00	$9,000.00
16	Electrical Service	1	LS	$10,000.00	$10,000.00
STREETSCAPE SUBTOTAL					**$225,936.26**
Design Fee (10%)					$22,593.63
+ 10% CONTINGENCY					$22,593.63
TOTAL					**$271,123.51**

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appendix

OHIO CITY GEOLOGIC SURVEY

Ohio City geologic survey, conducted February, 2013.

BIKE CLEVELAND POSITION STATEMENT

RE: Bike Cleveland Position Statement- Lorain Avenue Streetscape Plan

Bike Cleveland's board of directors reviewed the Living Lorain Streetscape plans presented at the May 28th public meeting and approved the following position statement regarding the project on June 4th at our monthly meeting of the board of directors:

The goals of Living Lorain, the streetscape planning process for Lorain Avenue between W. 20th and W. 85th, are to balance the safety of all users and to create a space that is memorable and "great." To accomplish these goals Bike Cleveland is supportive of a plan for Lorain Avenue that accommodates cyclists within the right-of-way of the existing roadway, with a strong preference for protected bikeways. Bike Cleveland supports a plan that balances the needs of all users in order to accommodate both parking for area businesses and dedicated bicycle facilities for cyclists. All cyclists begin and end their trips as pedestrians and as such Bike Cleveland supports a plan that provides excellent amenities for pedestrians such as signalized crossings, raised crosswalks, mid-block crossings, pedestrian refuge islands, and bump outs.

Bike Cleveland would like to work with the consultant and the local Community Development Corporations to further explore and advocate for the the idea of creating a two-way protected bike lane on the north-side of Lorain Ave. We believe this lane configuration should be included in the potential options and presented to the community at an additional public meeting.

As the city of Cleveland continues to become a friendly place for cyclists of all ages and abilities, it is important to balance the needs of all users during planning processes. By creating a dedicated facility on Lorain Avenue for bicycles the project will make riding a bicycle on Lorain more attractive to a wider range of bicyclists and improve comfort and safety of all road users (a New York study found that protected bike lanes made a street 40% safer for all road users, not just people on bicycles).

All follow-up regarding a response to this position statement should be directed to Bike Cleveland executive director Jacob VanSickle at 216-245-3101 or Jacob@bikecleveland.org

PO Box 609718 | Cleveland, OH 44109 | 216.245.3101 | BikeCleveland.org

PROJECT STEERING COMMITTEE

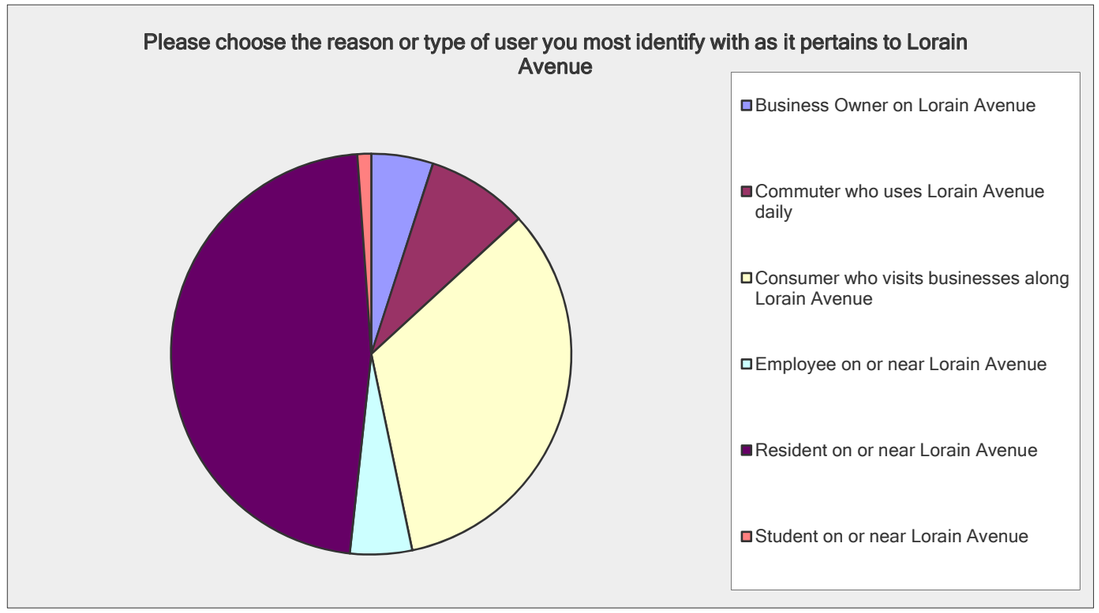
Name	Association
Father William Murphy	Saint Ignatius High School
Gerald Skoch	Saint Ignatius High School
Joel Ratner	Neighborhood Progress
Mark McDermott	Enterprise Community
Maribeth Feke	Regional Transit Authority
Bob Brown	City of Cleveland
Trevor Hunt	City of Cleveland
Robert Mavec	City of Cleveland
Andrew Cross	City of Cleveland
Jomarie Wasik	City of Cleveland
Victoria McCauley	NEORSD
Kevin Dreyfuss-Wells	NEORSD
Jacob VanSickle	Bike Cleveland
Sr. Maureen Doyle	Urban Community School
Eric Wobser	Ohio City Incorporated
Jeff Ramsey	DSCDO
Ed Small	Smart Hotels Group
Erika McLaughlin	Resident
Linda Dietrich	Resident
Julia Sieck	Resident
Marvin Hayes	Neighborhood Progress
Lynn Phares	Resident
Debbie Webb	Resident
Robert Colson	Resident
Lynn Colson	Resident
Kathleen Knittel	Ohio City Incorporated
Helen Smith	Ohio City Incorporated
Robert Ivanov	Touch Ohio City
Julia Briggs	Blue Star Design
John Briggs	Blue Star Design
Joe Lanzilotta	Buck Buck
Joan Chase	Resident
Pete Gallo	Vista Color Imaging
Bill Beachy	GoMedia USA
Anita Cook	West Side Catholic Center
Frank Lewis	Ohio City Writers
Angela Guinther	Cleveland Public Library
Nelson Beckford	Cleveland Foundation
Mahmoud Al-lozi	NOACA
Ryan Noles	NOACA
Melinda Bartizal	ODOT
John Motl	ODOT
Dave Murray	Business Owner
Tracie Hatchett	5th/3rd Bank
Eugene Pallas	Lorain Furniture
Dan McCormack	Champion Fire
Ken Shaw	Business Owner
Christopher Olah	Century Antiques Clevelan
David Zake	Business Owner
Barbara Strauss	Resident
Delores Watson	Resident
BJ Johnson	Resident
Brain Kazy	Resident
Sam Delgado	Resident
Christopher Tadych	Resident

MAY 2013 SURVEY RESULTS

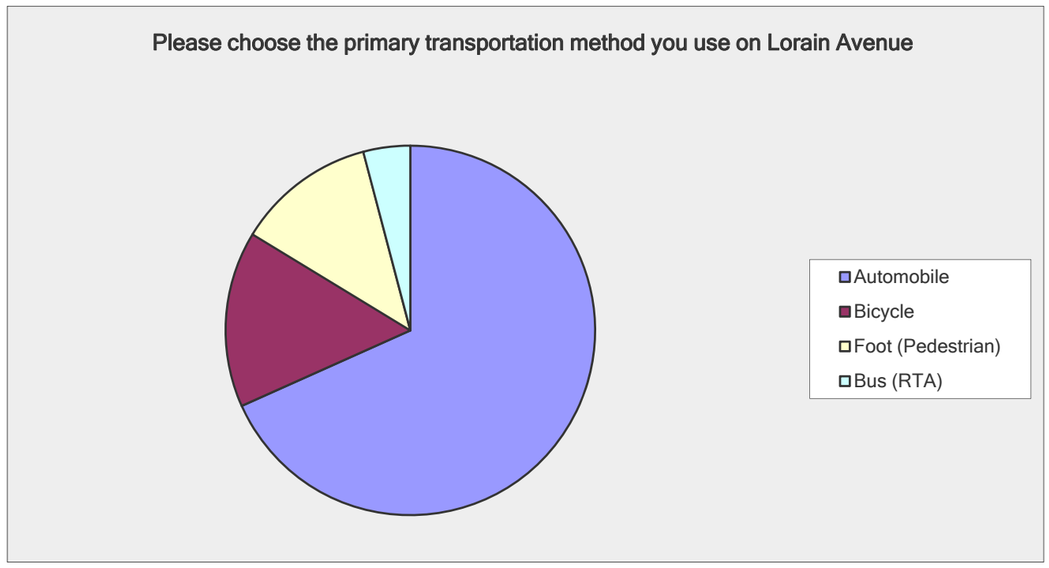
The planning team developed the word clouds below based on particpants' responses to open-eneded survey questions at the May 2013 public meeting.

MAY 2013 SURVEY RESULTS

Please choose the reason or type of user you most identify with as it pertains to Lorain Avenue		
Answer Options	**Response Percent**	**Response Count**
Business Owner on Lorain Avenue	5.0%	28
Commuter who uses Lorain Avenue daily	8.2%	46
Consumer who visits businesses along Lorain Avenue	33.5%	188
Employee on or near Lorain Avenue	5.0%	28
Resident on or near Lorain Avenue	47.2%	265
Student on or near Lorain Avenue	1.1%	6
answered question		561
skipped question		10

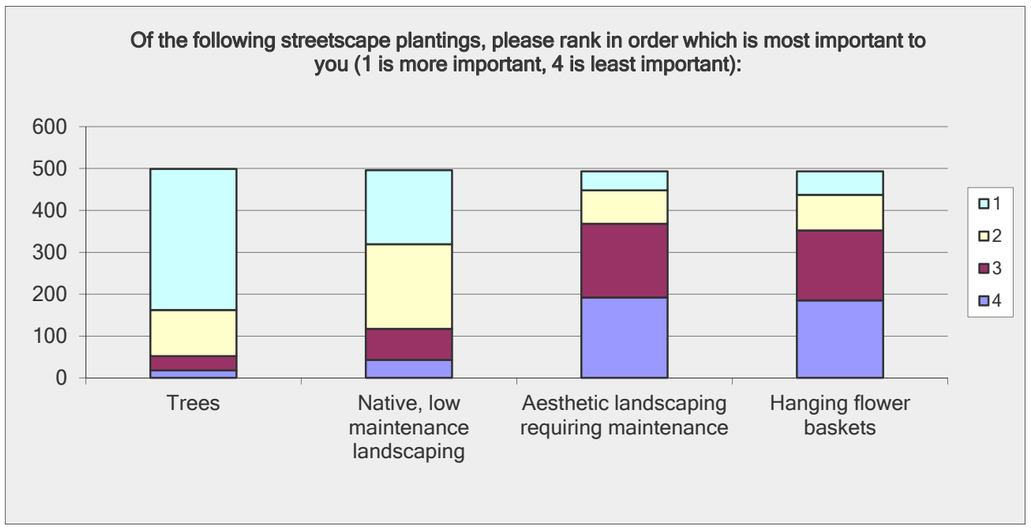


Please choose the primary transportation method you use on Lorain Avenue		
Answer Options	**Response Percent**	**Response Count**
Automobile	68.3%	385
Bicycle	15.4%	87
Foot (Pedestrian)	12.2%	69
Bus (RTA)	4.1%	23
answered question		564
skipped question		7

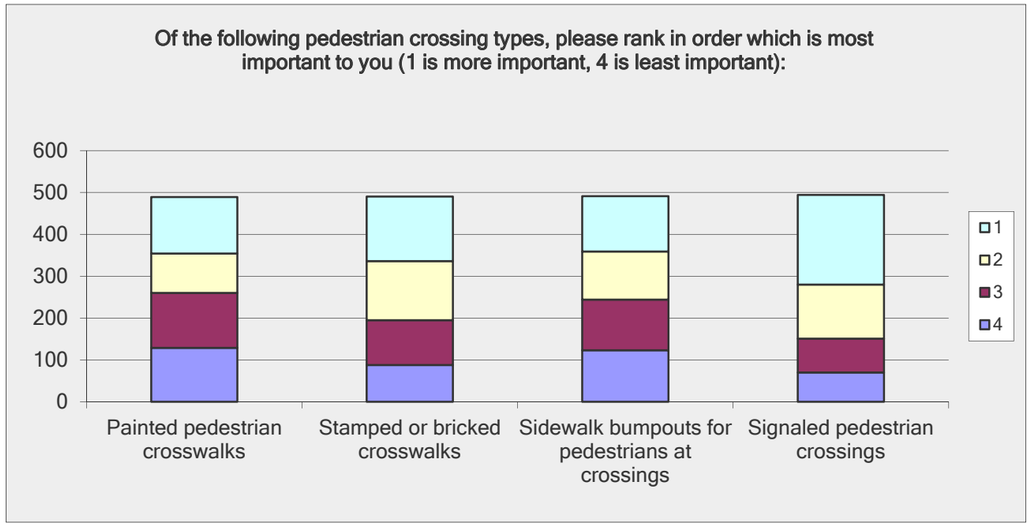


Of the following streetscape furnishings, please rank in order which is most important to you (1 is more important, 2 is less important):			
Answer Options	**1**	**2**	**Response Count**
Permanent street furniture	342	135	477
Temporary and moveable street furniture	107	356	463
		answered question	**486**
		skipped question	**85**

Of the following streetscape plantings, please rank in order which is most important to you (1 is more important, 4 is least important):					
Answer Options	**1**	**2**	**3**	**4**	**Response Count**
Trees	337	110	34	18	499
Native, low maintenance landscaping	177	202	74	43	496
Aesthetic landscaping requiring maintenance	45	80	176	192	493
Hanging flower baskets	56	85	167	185	493
				answered question	**501**
				skipped question	**70**

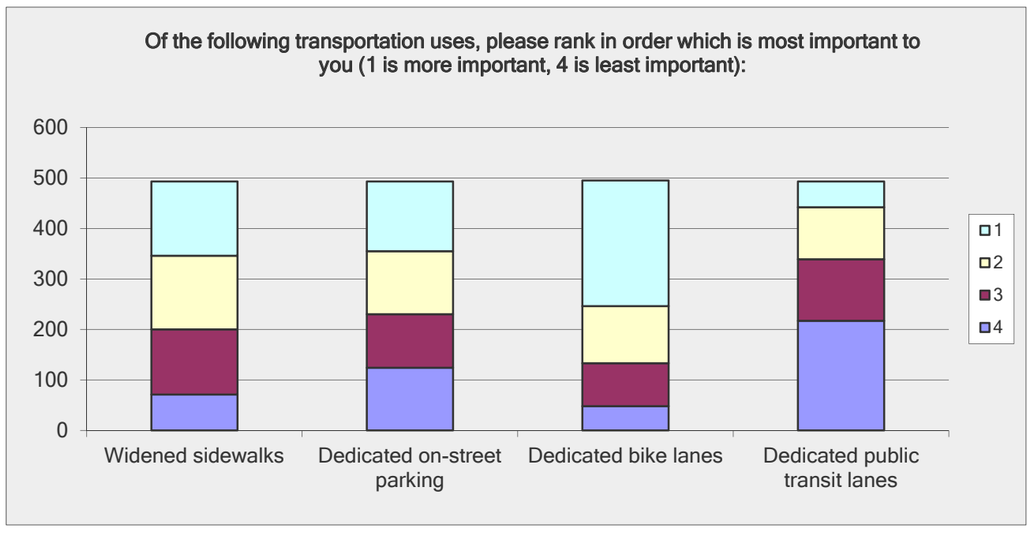


Of the following pedestrian crossing types, please rank in order which is most important to you (1 is more important, 4 is least important):					
Answer Options	**1**	**2**	**3**	**4**	**Response Count**
Painted pedestrian crosswalks	135	94	131	129	489
Stamped or bricked crosswalks	154	141	107	88	490
Sidewalk bumpouts for pedestrians at crossings	132	115	121	123	491
Signaled pedestrian crossings	214	129	81	70	494
				answered question	**498**
				skipped question	**73**



Lorain Avenue Streetscape

Of the following transportation uses, please rank in order which is most important to you (1 is more important, 4 is least important):					
Answer Options	**1**	**2**	**3**	**4**	**Response Count**
Widened sidewalks	147	146	129	71	493
Dedicated on-street parking	138	125	106	124	493
Dedicated bike lanes	249	113	85	48	495
Dedicated public transit lanes	51	103	122	217	493
				answered question	499
				skipped question	72



MAY PUBLIC MEETING POSTERS - PARTICIPANT COMMENTS & FEEDBACK

LANE CONFIGURATIONS

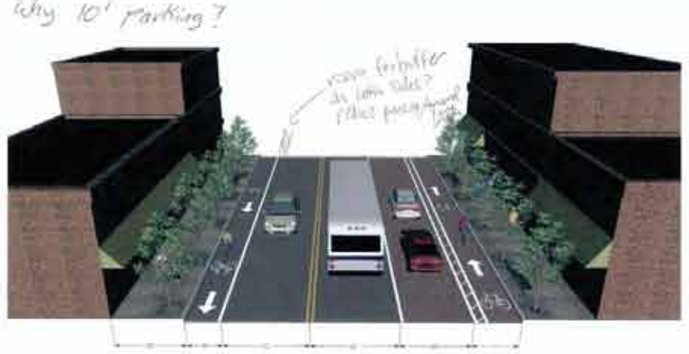
What about 11' lanes ??
Protected Bike Lane option or Cycletracks?

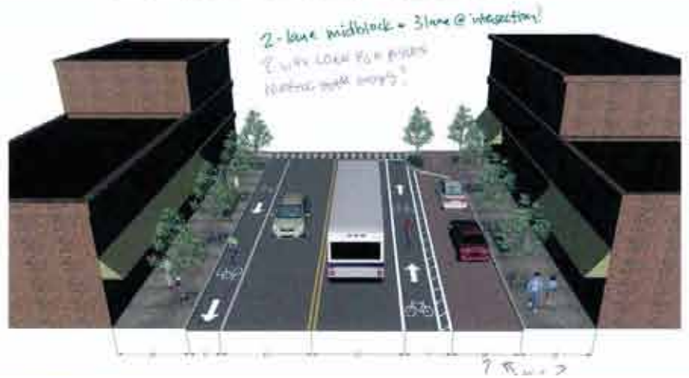
Place a dot in the numbered rectangle next to your preferred lane configuration.

● first choice ○ second choice

2-LANE OPTIONS

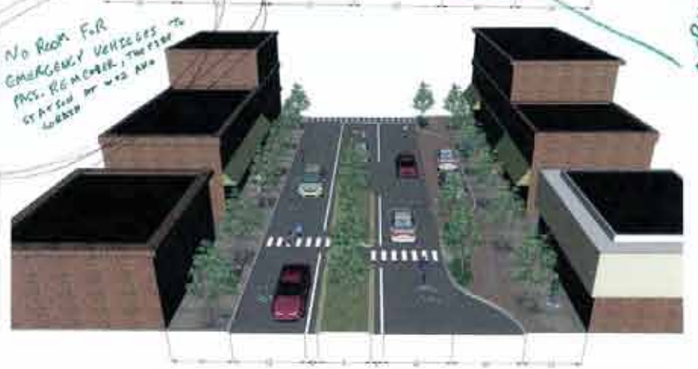
Why 10' Parking?





3-LANE OPTIONS

Parking?



SHARING

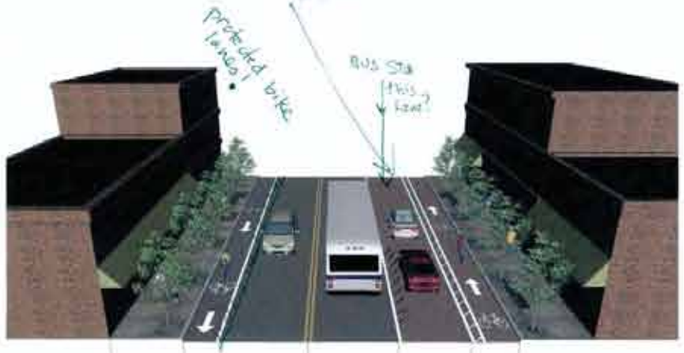
LANE CONFIGURATIONS

Place a dot in the numbered rectangle next to your preferred lane configuration.

first choice second choice

PARKING??

2-LANE OPTIONS



3-LANE OPTIONS

OPTION #6: Buffered bike lanes on *
N and S sides of Lorain.

What is being done to ensure accessability of businesses, sidewalks, crosswalk? Ramps are a must for folks with mobility issues (vision, wheelchairs, canes, walkers)

I prefer the option that includes protected bike lanes.

LANE CONFIGURATIONS

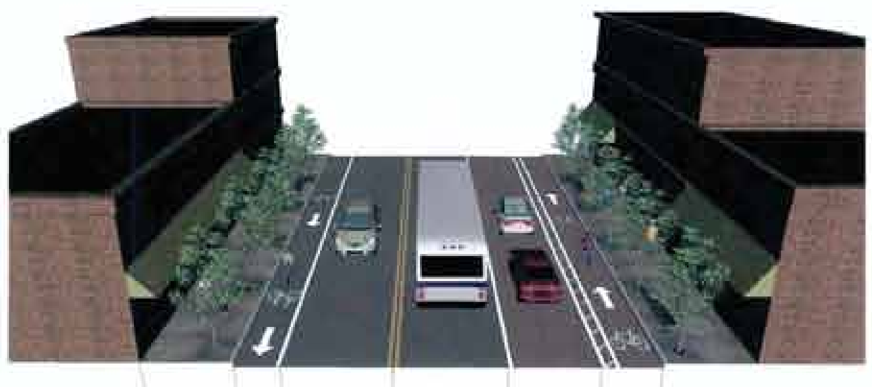
Place a dot in the numbered rectangle next to your preferred lane configuration.

first choice   second choice

pavement options need to consider accessibility. Market Park pavement is terrible for someone in a wheelchair. the surface changes too much and is very bumpie.

2-LANE OPTIONS

1



2

3-LANE OPTIONS

3

4

5

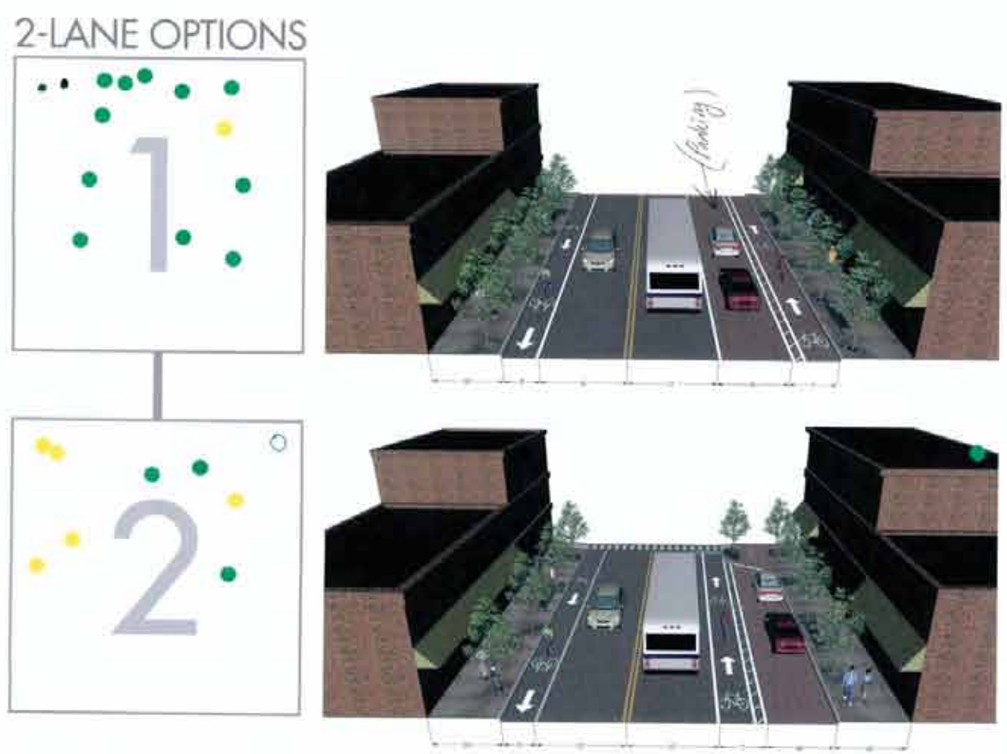
– Would like
the parking
was
"bus
mid

LANE CONFIGURATIONS

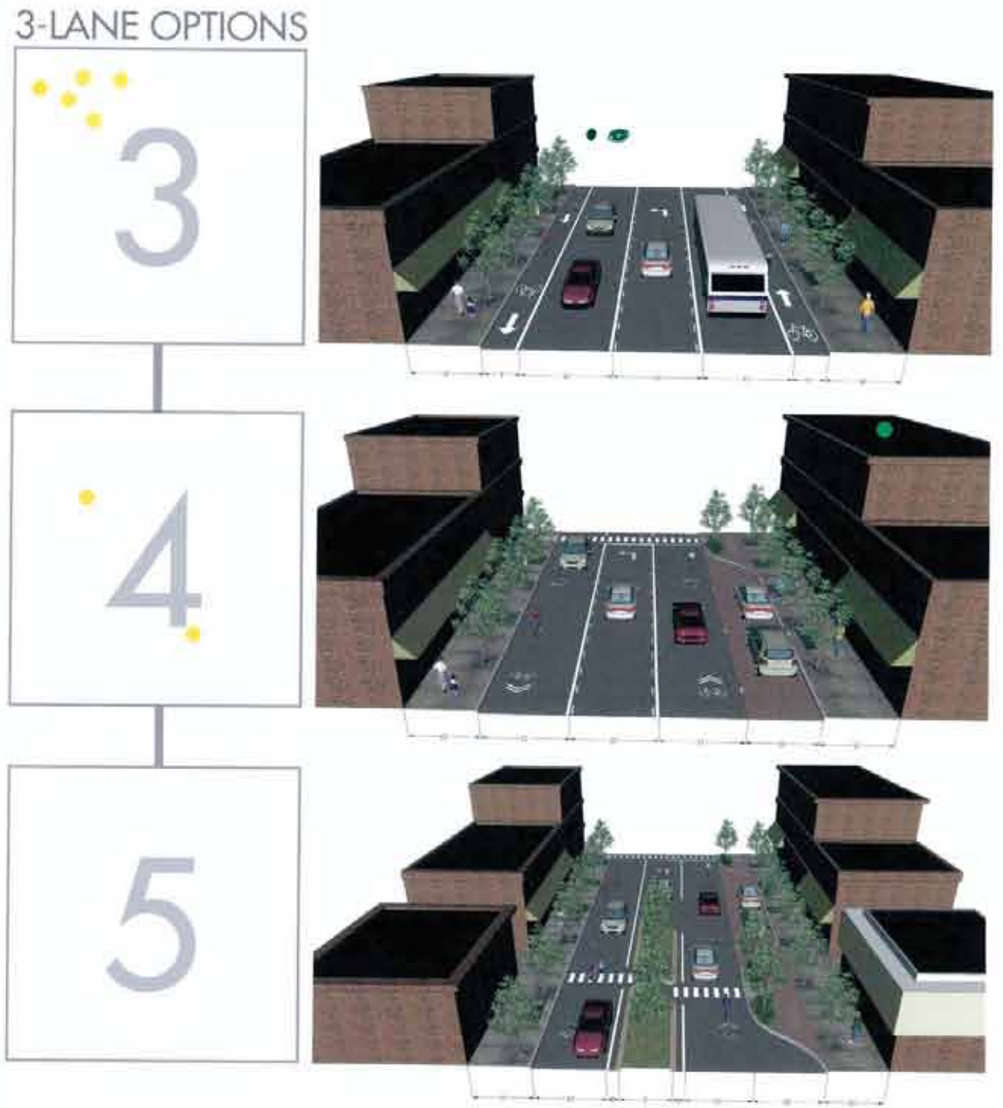
Place a dot in the numbered rectangle next to your preferred lane configuration.

first choice second choice

2-LANE OPTIONS



3-LANE OPTIONS

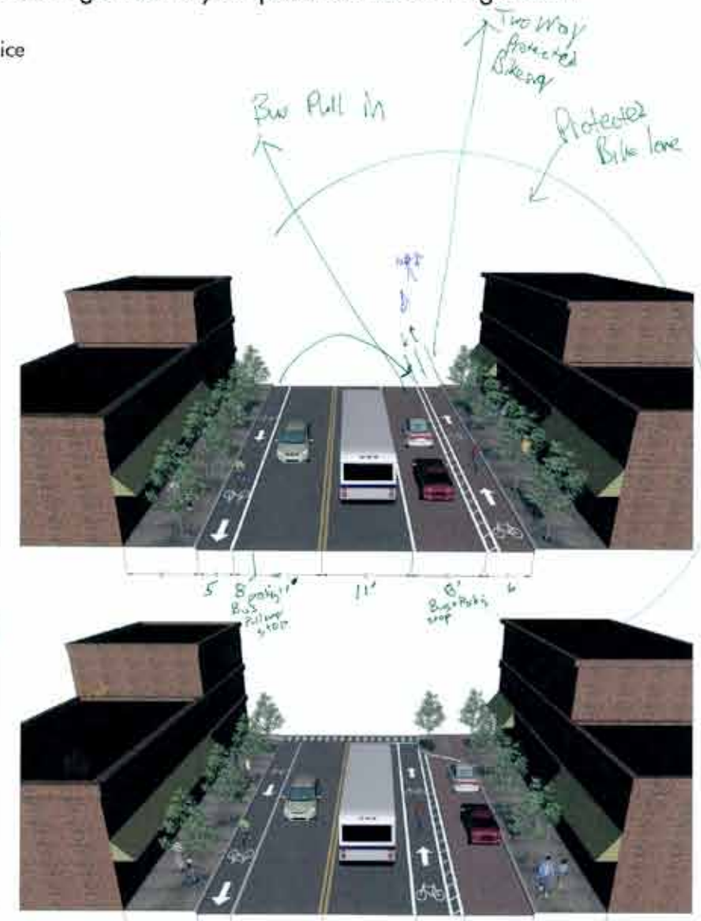


LANE CONFIGURATIONS

Place a dot in the numbered rectangle next to your preferred lane configuration.

● first choice ● second choice

2-LANE OPTIONS



3-LANE OPTIONS