3.4 Indicators, Targets and Baselines

The Goals, Objectives, Strategies and Actions represent the full vision of the Circulation Element. To enable Jersey City to monitor the attainment of its progress in implementing its Circulation Element, Indicators and Targets have been established for each Goal. The Indicators measure progress toward the Goals, Objectives and Strategies. The targets are a measurable milestone of achievement. Baselines are provided for comparison in the future, so that the City can measure its progress in implementing the Circulation Element.

3.4.1 Matrix of Indicators

The Matrix of Indicators shows that many of the Indicators measure the attainment of several Goals, Objectives, and Strategies. This demonstrates the linkages between each goal. As indicated in the Matrix below, the progress towards the City's Goals is measured not only by changes in the travel behavior, but also by economic, environmental, and fiscal parameters, as well as accidents. Therefore, the attainment of the City's Goals would have a positive measureable impact on the overall quality of life for Jersey City's stakeholders.

INDICATOR	GOAL 1	GOAL 2	GOAL 3	GOAL 4	GOAL 5	GOAL 6	GOAL 7	GOAL 8	GOAL 9	GOAL 10	GOAL 11	GOAL 12	GOAL 13	GOAL 14
Percentage of workers commuting by public transit	X	X										X		
HBLR ridership	X	X						X				X		
Bus ridership	X	X										X		
PATH ridership	X	X						X				X		
Estimate of vehicle miles travelled in Hudson County	X	X										X		
Percentage of workers commuting by foot	X		X								X			
Annual number of accidents involving pedestrians	X		X	X			X							
Percentage of workers commuting by bicycle	X		X		X						X			
Percentage of workers commuting by public transit (<30 min)	X		X											
Percentage of workers commuting by transit/carpool (>30 min)	X							X						
Linear miles of gaps in Hudson and Hackensack river walks	X		X	X										
Linear miles of striped bike lanes	X		X		X									
Annual number of accidents involving bicyclists	X				X		X							
Budget appropriations/expenditures for infrastructure maintenance/repair	X					X								
Complaints for potholes, average response time to complaint	X					X								
Amount of money paid in insurance claims due to potholes	X					X								
Replacement cycle of all roads in Jersey City	X					X								
Status of roadway projects	X					X								

INDICATOR	GOAL 1	GOAL 2	GOAL 3	GOAL 4	GOAL 5	GOAL 6	GOAL 7	GOAL 8	GOAL 9	GOAL 10	GOAL 11	GOAL 12	GOAL 13	GOAL 14
Annual number of accidents involving 2 or more vehicles	X						X							
Commodity flow data (value and tonnage of freight)	X								X					
Adoption of revised Barricade Manual Ordinance	X									X				
Annual days with good air quality	X										X			
Deaths from chronic lower respiratory disease	X										X			
Deaths from heart disease	X										X			
Deaths from diabetes mellitus	X										X			
Percentage of workers driving to work alone	X											X		
Linear miles of streetscape projects in Jersey City	X												X	
Bi-decennial qualitative analysis/report	X													X

Photo Source: Jersey City Division of City Planning

4. ANALYSIS

Jersey City's Circulation Element is an action-oriented plan which identifies the Actions necessary to facilitate the movement of people and goods through 2050. As stated in the City's vision, "by the year 2050, Jersey City's extensive and sustainable development, redevelopment and neighborhood revitalization activity will have transformed the City into a bustling, "green," world-class center with a range of housing and retail choices, many employment and business opportunities, and excellent recreational, entertainment and cultural amenities." Therefore, the multi-modal system must be prepared to serve this world-class city.

Many of the Actions within this Circulation Element require rights-of-way to be preserved, and modifications to the layout of the existing roadways so all users are accommodated efficiently and safely including motorists, bicyclists, and pedestrians. The Actions support a pedestrian-friendly, traffic-calmed, aesthetically-appealing circulation system that serves pedestrians, bicyclists, vehicles, mass-transit, and freight. The multi-modal system must be seamless, reliable, and efficient, within the City and to and from the region. This Circulation Element provides Jersey City a plan to accommodate growth through 2050, and enables the City to strengthen the link between land use and transportation, while serving the needs of all of its users.

4.1 Projected Growth

Any act of planning for the future requires a sense of what is to come. As such, forecasts of population and future growth are integral to this Circulation Element, since they yield valuable information about the City's future development. The following sections describe the future growth of the City, as forecasted by the North Jersey Transportation Planning Authority (NJTPA) and the City's professional city planning staff.

4.1.1 North Jersey Transportation Planning Authority Projections

In its capacity as the Metropolitan Planning Organization (MPO) for Hudson County and twelve other counties in northern New Jersey, North Jersey Transportation Planning Authority (NJTPA) has prepared municipal-level growth projections for Jersey City and the other subregions.

These projections examine population, household, and employment growth through 2030, and are used as a basis for studies and plans of the NJTPA. The NJTPA's projections for Jersey City and Hudson County are presented in the table below.

	2010	2015	2020	2025	2030	Percent Change
Jersey City						
Population	265,610	281,630	296,340	302,690	308,180	16.0
Households	101,180	109,600	117,360	120,940	124,330	22.9
Employment	130,780	137,640	144,790	148,480	155,570	19.0
Hudson County						
Population	667,000	694,000	720,800	740,600	760,700	14.0
Households	257,100	271,300	285,700	297,100	309,100	20.2
Employment	297,000	311,200	328,300	339,900	361,600	21.8

Source: NJTPA

As shown above, the NJTPA projects a significant level of growth for both Jersey City and Hudson County from 2010 to 2030. With particular regard to Jersey City, the NJTPA projects a 16.0 percent increase in population, 22.9 percent increase in households, and a 19.0 percent increase in employment. These increases exceed those projected for Hudson County in all categories but employment.

The counts of population, households, and jobs will experience significant growth in Jersey City during the NJTPA-projected period and beyond. However, a closer look at the future growth of the City is warranted, since the NJTPA does not project to 2050, which is the horizon year of this Circulation Element and the regionally-focused methodology employed in the NJTPA projections limits the depth of local analysis, which is particularly important in communities with extensive redevelopment activity. As such, the City prepared independent analyses of future residential development and additional non-residential development anticipated through 2050.

4.1.2 Future Residential Development

To estimate Jersey City's future population development potential, an inventory of all residential redevelopment projects that are expected to be completed by 2050 was prepared by Jersey City's professional planning staff. This inventory revealed that as of May 2008, it is anticipated that Jersey City will gain 80,330 residential units through redevelopment activity by the year 2050.

This information can be used to estimate potential population in 2050 by converting the 80,330 anticipated residential units in redevelopment areas to population, and adding it to the City's estimated May 2008 population of 260,712 residents[24]. When the 2000 US Census' estimate of average household size (2.67 members/household) is used as a conversion factor for the 80,330 anticipated residential units, it is then determined that the City has the potential for a population of at least 475,193 residents in 2050[25,26,27]. The following chart illustrates this population growth potential.

Photo Source: Leon Yost

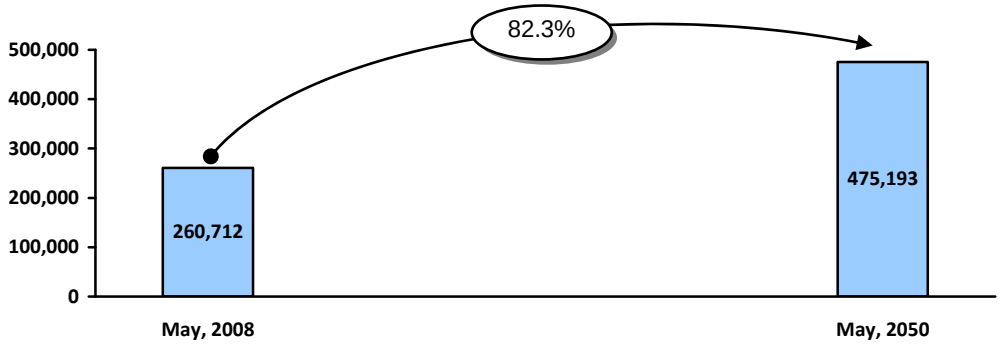
[24] The May 2008 Estimate is equal to the pro-rated difference between the NJTPA's (April 1) 2010 projection of 265,610 residents, and the (April 1) 2000 US Census Bureau's count of 240,055 residents, calculated on a monthly basis.

[25] This figure is derived with the following operations: (80,330 new units anticipated in redevelopment areas from May 2008 through 2050 x 2.67 members per household) + Estimated May 2008 population of 260,712 residents = Potential minimum population of 475,193 residents in May 2050.

[26] This figure is hypothetical. Actual population will be impacted by other factors, such as fertility and mortality.

[27] Assumes all units created through redevelopment activity would be occupied.

Figure 4.1-1 – Growth Projection



When the population growth potential for the period from May 2008 through May 2050 is examined, it is clear that there is significant growth potential in Jersey City's population. In total, it is anticipated that the City's population could grow by about 82.3 percent during this period, based on current development and redevelopment trends. The build-out data can be found in the appendices and is identified in Figure 4.1-2.

4.1.3 Additional Non-Residential Development

The Division of City Planning also carefully examined non-residential development activity and determined that Jersey City can expect approximately 9.8 million square feet of new non-residential development through 2050.

4.2 Circulation

Photo Source: Leon Yost

As indicated in the Action Plan, various roadway and transit improvements are proposed to be studied, designed and eventually implemented over the next 40 years in and around Jersey City. In reviewing the adequacy of the multi-modal circulation system to accommodate the growth of the City, the redevelopment projects were reviewed that are anticipated to be implemented over the next 40 years within Jersey City as outlined in Section 4.1. It is anticipated that by 2050, redevelopment will result in 80,330 units and 9,844,000 square feet of commercial space. The population of Jersey City is anticipated to be 475,193 by the year 2050. The proposed Actions address improvements to the multi-modal transportation system. These Actions address many of the anticipated areas of congestion within Jersey City. However, in the future, individual assessments of the impacts of the proposed roadway and proposed transit improvements, and the proposed redevelopment and development projects on the roadway

Jersey City Circulation Element 2050
Figure 4.1-2: Anticipated Growth Areas 2050
City of Jersey City
Hudson County, New Jersey

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0 500 1,000 2,000 Feet

Prepared by: STK, April 20, 2009
Source: NJDEP - Municipal Boundary, Open Water; NYC Department of City Planning - Borough Boundary, Roads; NJDOT - 2007 Roads; Jersey City Planning Dept.: Parks and Open Space, Major and Downtown Developments
File Path: H:\JCTY\00110\GIS\Projects\jcty110_BuildOutFINAL.mxd

NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

- 2 Family Homes
- AMB Warehouse
- Avalon Cove
- Bates
- Bayfront
- Bayonne Border
- Berry Lane Park
- Burma Road
- Canal Crossing
- Chapel Hill
- Colgate/Exchange Place
- Danforth Avenue
- Grand/Jersey
- Gregory Park
- Harborside
- Hoboken Yards/LCOR/Hudson Crossing
- Hudson Mall
- Jersey Avenue
- Journal Square
- KMart
- LSP Park and Ride
- Liberty Harbor North
- Marion Works
- Meadowlands
- Metro Plaza
- Morris Canal
- New Neighborhood
- Newport NE
- Newport NW
- Port Liberte
- Powerhouse Arts District
- Residence at Liberty
- Route 440 Northeast
- Route 440 Southeast
- The Beacon
- Whitlock Cordage
- Park and Open Space
- Interstate Route
- U.S. Route
- State Route
- Toll Route
- County Route
- Local Roads
- Ramp
- Private Road
- Proposed Road
- Right of Way
- Open Water
- Municipal Boundary
- New York City

network and the transit system, should be made. Many of these assessments will occur in the Planning and Zoning Board review process, when traffic impact studies are conducted on a development-by-development basis. Later in this document, there is a Traffic Calming Plan, which provides a means to manage traffic volume and travel speeds within the various neighborhoods in Jersey City.

4.2.1 Adequacy of the Circulation System through 2050

In order to identify roadway locations where congestion is anticipated through 2050, the anticipated growth identified in Section 4.1 was imported into the North Jersey Transportation Planning Authority's North Jersey Regional Transportation Model-Enhanced (NJRTM-E). The NJRTM-E analyzed the volume of the roadway system versus the capacity of the system. Areas of insufficient capacity were identified and categorized by delay: one (1) hour, two (2) hours, or greater than three (3) hours of congestion. Copies of these maps can be found in the appendices of this report and are entitled Exhibits A, B and C.

Once areas of congestion were identified, the congestion-mitigating effects of the proposed improvements identified in the Action Plan in the vicinity of the congested roadways were examined. In most cases the Actions appear to provide the infrastructure necessary to support approved and anticipated development and redevelopment. This confirms that the Action Plan supports the land use plan and the corresponding development and redevelopment objectives and strategies of the City.

The Actions that were reviewed include extensions to the roadway network and completion of street grids, which helps to provide alternative routes for traffic, pedestrians and the movement of goods and services within Jersey City. Actions related to infrastructure projects were reviewed, as well as new roadways outside of the City that provide relief to congestion on the local roadway system within the City. Other Actions which increase the efficiency of the existing roadway network include interchange improvements, traffic signal coordination/synchronization, timing adjustments and reversible lanes. Transit improvements reviewed included additional stations and extension of the Hudson Bergen Light Rail Transit system, improvements to the PATH system, better connectivity between PATH, HBLR and bus, and additional bus service.

Although the NJRTM-E provided a useful tool to examine the Actions in conjunction with proposed development, the model should not be used out of context. The NJRTM-E is based on the year 2000 traffic and transit data and does not capture the capacity of the local street grid in detail. The year 2000 did not account for the Hudson-Bergen Light Rail Transit system. Therefore, the transit ridership projections of the NJRTM-E for the year 2030 do not show significant ridership for the HBLR. As a result, the modeling identified areas of congestion that would likely have been eliminated if the HBLR were imported into the model. This was taken into account in reviewing the adequacy of the Action Plan. Additionally, the NJRTM-E includes the demographics of the year 2030 and the infrastructure improvements that in the NJTPA Transportation Improvement Projects (TIP) through the year 2012 and the Project Development Work Program (PDWP) through the year 2010, including major projects such as Portway and the rehabilitation of the Route 139 Viaduct. The street grid improvements in this plan are not included in the NJRTM-E. Therefore, the effects of the proposed improvements in the Action Plan were considered when evaluating congested areas identified by the NJRTM-E.

The NJRTM-E identified congested areas in the vicinity of Route 440, in the Downtown Hudson River Waterfront, in the vicinity of Journal Square, and in the vicinity of the NJ Turnpike Extension in the Greenville neighborhood. Proposed Actions in each of these areas were reviewed to examine their impacts on anticipated congestion.

4.2.2 Vicinity of Route 440 (Bergen and Greenville)

Redevelopment of the area to the west of Route 440 will generate traffic and transit needs. The Volume/Capacity ratios of Route 440, Routes 1&9 Truck, and many of the local streets are anticipated to exceed acceptable values by 2050 if not mitigated. Therefore, decreases to volumes, increases to capacity or a combination of both need to be implemented. The Action Plan identifies improvements to the roadway network and improvements to the transit system in the vicinity of the Bayfront I Redevelopment and the Future New Urbanist Street Grid. These improvements include new streets grids, an HBLR extension, and HBLR station, 440/Route 1&9 Truck Multi-Use Urban Boulevard, the recommended use of Intelligent Transportation Systems (ITS), and completion of the Portway projects.

The extension of the HBLR line across Route 440 with a new station for both Bayfront I and the New Urbanist Street Grid would be a positive improvement to provide an alternative to the automobile. The HBLR extension should be grade separated from Route 440 to eliminate the impact of the HBLR on the traffic operations of Route 440. Completion of the Route 440/Route 1&9 Truck Multi-Use Urban Boulevard could provide additional roadway capacity for vehicle trips associated with these two development projects. The Portway projects should also provide some relief to the congestion along Routes 1&9T and Route 440.

The use of Intelligent Transportation Systems (ITS) should provide another means to manage the traffic and transit networks. Media broadcasts to motorists and dynamic message signs could be deployed and incorporated into the mix of improvements. These ITS measures should provide benefits to motorists by managing traffic demand, identifying incidents and developing quick response to clear incidents. ITS for transit could also be deployed. Mass transit systems that are equipped with advanced transit management systems could improve transit efficiencies by providing information to transit riders regarding times of arrival/departure, available seats and alternative routes.

However, it should be noted that the combination of the above mentioned Actions which complete street grids, extend the HBLR, add ITS, and complete the Portway and Route 440/Routes 1&9T Urban Boulevard may not add enough capacity to the roadway and transit system or reduce the demand enough to accommodate the demand of the area at build-out. More detailed traffic and transit studies should be conducted to assess the best ways to manage transit passenger demands on the HBLR and vehicular demand on the roadway network.

4.2.3 Vicinity of the Hudson River Waterfront (Downtown)

Photo Source: Jersey City Division of City Planning

Anticipated redevelopment activity in Downtown Jersey City will generate additional traffic and transit demand. In the 2050 horizon, the modeling showed that there will be many streets within the Downtown that have V/C ratios that exceed acceptable conditions. In order to address the excessive demand and the lack of capacity within the Downtown, investments in the roadway and transit infrastructure must be made. The Downtown is served well by existing HBLR stations. The extension of Jersey Avenue across the Mill Creek would improve access to and from Downtown Jersey City.

A comprehensive transit study needs to be conducted for the Downtown street grid and the HBLR. The focus of this transit study would be to develop a balance between HBLR service, vehicular capacity and pedestrian access within Downtown. Access must be provided for the movement of goods and services; however, a balance must be struck to provide more efficient movement of goods, services and patrons to the Downtown. When completing the street grids within the Downtown, sensitivity and balance must be given to the HBLR service and the movement of people and goods. The Downtown HBLR Circulator should help to reduce vehicle trips within the Downtown area. The HBLR Wye Bypass on the Hoboken border should improve travel times for HBLR vehicles in and out of Jersey City. Improved connections between HBLR and PATH should remove some vehicles from the road network, thus mitigating traffic. Grade separation of 14th Street and the 11th Street viaduct should separate Holland Tunnel-bound traffic from Downtown-bound traffic and improve circulation in the vicinity of the entrance and exit of the Holland Tunnel.

Improvements that facilitate the movement of pedestrians, vehicles, goods and services within the Downtown are necessary to provide access between places of employment and other commercial destinations and the transportation system. Restrictions on parking should be considered, as well as maximum parking ratios in the Downtown.

4.2.4 Vicinity of Journal Square (Journal Square and Marion)

Photo Source: Jersey City Division of City Planning

Journal Square is well served with PATH and bus service. There are also parking facilities that serve passenger cars entering Journal Square. In order to support redevelopment of Jersey City's Central Business District, improvements to pedestrian access, reduction of vehicular trips, improved bicycle access, and improvements to transit are necessary. This policy of reducing the number of cars would help to reduce congestion within Journal Square. Adequate transit systems should be provided to shuttle passengers into and out of Journal Square in a timely manner and to potentially connect Journal Square with parking facilities outside of Journal Square.

4.2.5 Vicinity of NJ Turnpike Newark Bay Extension (Greenville)

The implementation of the Canal Crossing redevelopment plan and construction of the street grids of the Claremont Industrial and Danforth Transit Village redevelopment plans would facilitate the completion of a roadway grid network, but redevelopment would also generate demand for passengers on the HBLR and traffic on the road network. The Action Plan includes projects like the Turnpike Interchange 14A Reconfiguration to improve access between these areas and the Turnpike.

The HBLR provides service and stations along this corridor; however, the future demand and the capacity of this leg of the HBLR and the confluence of the Westside line into the Downtown should be assessed. Garfield Avenue improvements, and the NJ Turnpike Interchange 14A Reconfiguration should also facilitate better movement in this area. Connections to the HBLR and street grids should facilitate better access to the HBLR. The Danforth Interlocking should allow HBLR trains to be turned around at this location to provide additional service during peak demand. The Morris Canal Greenway and preservation of the Lehigh Valley Railroad right-of-way should also provide improved pedestrian and bicycle circulation in this area.

4.2.6 Additional Recommendations

In most cases, the proposed Actions in the Circulation Plan Element appear to provide the infrastructure necessary to support approved and anticipated development and redevelopment. In addition to the Actions, future development and redevelopment will be reviewed on a case-by-case basis. Future traffic studies should analyze the modal splits of vehicular, pedestrian and transit for each redevelopment and development project based on the proximity to existing and proposed transit systems and roadway networks.

Off-site improvements should be assessed for development and redevelopment projects to mitigate congestion. An assessment of the capacity of the HBLR system to accommodate the additional ridership of these developments should also be conducted. The transit system must be developed, expanded and improved to maximize efficiency and provide as much coverage to Jersey City without

compromising the system. A capital investment prioritization study should be undertaken to develop an implementation schedule for transit improvements and use of capital resources. The goals of the capital investment prioritization study should include improved efficiency, reduced delays, and improved reliability. Buses, Light Rail, and PATH should all be assessed together. Issues such as seamless service and coordination of connections and capacity should be considered in the study.

4.3 Mobility Study Findings

As part of the research performed to produce the Circulation Plan Element, the City conducted a mobility survey entitled "Jersey City 2050 Mobility Survey", which collected data on the origins and destinations of commuters to and from Jersey City, as well as data on intermediate trips on the way to or from work. A copy of this report is located in the Appendices of this Plan. The survey was conducted by Eastland Systems Group, with insight from Resource Systems Group and T&M Associates. The mobility survey solicited responses to survey questions pertaining to travel to, from and within Jersey City. The survey began in April 2008 and ended in May 2008. The purpose of the survey was to obtain current, neighborhood-specific data that could be used to determine the shortcomings of the multi-modal transportation system to, from, and within Jersey City, and to determine the mobility patterns of the City's residents and workers. Therefore, data was obtained from seven neighborhoods as defined by New Jersey Transit, which are depicted on Figure 4.3-1.

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0 500 1,000 2,000 Feet

Prepared by: STK, April 20, 2009
Source: NJDEP - Municipal Boundary, Open Water, Census Tracts; NYC Department of City Planning - Borough Boundary, Roads; NJDOT - 2007 Roads; Jersey City Planning Dept.: Parks and Open Space
File Path: H:\JCTY\00110\GIS\Projects\jcty110_NeighborhoodsFINAL.mxd

Neighborhoods
- Bergen
- Downtown
- Greenville
- Jersey City Heights
- Journal Square
- Lafayette
- Marion

- Interstate Route
- U.S. Route
- State Route
- Toll Route
- County Route
- Local Roads
- Ramp
- Private Road
- Proposed Road
- Right of Way
- Ferry Routes
- Federal Park
- Open Water
- Municipal Boundary
- New York City

Jersey City Circulation Element 2050
Figure 4.3-1: Transit Neighborhoods
City of Jersey City
Hudson County, New Jersey

N

NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

4.3.1 Overview

The 2050 Mobility Survey focused on three (3) market segments. The market segments and sample sizes are as follows:

- Market Segment 1: People who work in Jersey City and live elsewhere.
  Sample size: 1,437
- Market Segment 2: People who work elsewhere or do not work and live in Jersey City.
  Sample size: 668
- Market Segment 3: People who work and live in Jersey City
  Sample size: 694

The Jersey City Mobility Survey was conducted primarily online through the project website. Responses were supplemented with paper surveys conducted in the field at multiple locations, including the public libraries in each neighborhood, local community organizations, and City Hall.

4.3.2 Key Findings

Most stakeholders agreed that mass transit had several shortfalls, and that improvements are needed to provide better neighborhood connectivity within Jersey City, and enhanced service to the region. Many reported that mass transit needed extended hours, and more frequent service. Roadway maintenance was a concern, and many congested areas were cited. Some stakeholders voiced a need for biking incentives at work, bike facilities on streets, and bike accommodations on mass transit carriers and at mass transit stations. Mobility concerns for the disabled were raised, which included ADA compliant mass transit facilities and walkways, and adequate capacity. There were concerns raised relative to the safety of the circulation system, for vehicles, bicycles, and pedestrians.

The survey found that the overall transit share by market segment was much higher than the 2000 Journey-to-Work Census, which may be due to the opening of the Hudson-Bergen Light Rail in 2000 and the significant increase in office and residential development, especially in Downtown Jersey City, after 2001. Specifically, the following is a breakdown of how survey respondents commute to work by market segment:

- Market Segment 1: People who work in Jersey City and live elsewhere.
  62% Transit; 38% Non-Transit
- Market Segment 2: People who work elsewhere or do not work and live in Jersey City.
  76% Transit; 24% Non-Transit
- Market Segment 3: People who work and live in Jersey City
  35% Transit; 65% Non-Transit
- Combination of Market Segments 1, 2, &3
  58% Transit; 42% Non-Transit

The survey found that the overall busiest time for morning travel within Jersey City among all markets is between 6:00 AM and 10:00 AM. The busiest time in the evening was between 4:00 PM and 7:45 PM. Overall, a large number of commuters are traveling to and from New York counties that are east-of-the-Hudson River, and also to and from Monmouth, Middlesex, Union or Ocean counties. Additionally the lowest transit share is experienced by people going to work in Lafayette (14%) Greenville (28%) and Jersey City Heights (28%) which indicates the need for more neighborhood connectivity for mass transit.

Lastly, the survey identified that the most important aspects of mass transit for Jersey City stakeholders are that it stops close to home, that the service is frequent, safe, and reliable, and cheaper than driving.

4.3.3 Incorporation with Circulation Element

The respondents' concerns were used to form the fourteen (14) Goals, as well as the Objectives, Strategies, and Actions of the Circulation Plan Element. The first priority for all market segments corresponds to Goal 2: "Increase, improve, and enhance public transit service to, from, and within all areas of Jersey City". The second priority for market segments 1 and 3 corresponds to Goal 8: "Improve access between Jersey City and the greater region". The second priority for market segments 1 and 3 corresponds to Goal 3: "Integrate and connect neighborhoods, and improve public access to waterfront areas".

The report that summarizes the findings of the mobility survey recommends multiple Actions that were incorporated in the Circulation Plan Element. Notably, the mobility report recommends that Jersey City work closely with New Jersey Transit to support and collaborate on the design of future study that examines the anticipated expansion of the Hudson-Bergen Light Rail in Jersey City. This Plan recommends that the City work with NJ TRANSIT and other mass transit carriers for the expansion of services, including the Hudson Bergen Light Rail, and recommends that mass transit carriers analyze the efficiencies of the system and prepare for growth. Additionally, the plan recommends implementing the recommendations of the NJ TRANSIT/NJTPA/Jersey City local bus study and identifies rights-of-way for the extension of the HBLR as well as for other circulation needs.

The Plan facilitates improvements to the multi-modal system. The survey revealed that people who worked and lived in Jersey were the most likely to drive. Therefore, there are multiple Goals, Objectives, Strategies, and Actions that address improved neighborhood connectivity. In regards to safety and maintenance, the Plan includes a Traffic Calming Plan and a Sidewalk Maintenance Plan, to achieve a safer streets and sidewalks that are well maintained. The Plan provides a means to monitor the City's achievement of their Goals which ultimately will improve the multi-modal system and meet the identified needs of all of its stakeholders.

4.4. Right-of-Way Needs

Right-of-way is a parcel of land with a specific owner where the public at large or a specific private party has a legal right to traverse the land in some specified manner. In essence, right-of-way makes up and connects the circulation system. Right-of-way may contain public or private roads, sidewalks, trails, walkways, and private rail lines. Jersey City will require additional right-of-way through 2050 in order to connect the various aspects of its circulation system. As indicated on the Right of Way Needs mapping, Figure 4.4-1, fifty-seven (57) locations of new potential right-of-way were identified within Jersey City. The mapping

indicates proposed projects and potential projects. The proposed projects are projects that are past the feasibility stage, and potential projects are still in the concept phase.

4.4.1 Rail

There are various locations where right-of-way is needed for rail projects. These projects have been identified in the Action plan, and will allow for extensions of mass transit services, will facilitate better efficiency of service, and provide for new stations, platforms, and walkways. These projects include:

- Downtown HBLR Circulator (#11 on Figure 4.4-1) and HBLR Extension to Senator Frank R. Lautenberg Station (#17 on Figure 4.4-1) – The HBLR Downtown Circulator would originate from the Harsimus Cove station, use the Sixth Street Embankment, connect to the Riverline ROW, and connect to the existing HBLR tracks south of the HBLR Second Street Station (in Hoboken) in the vicinity of Hoboken Avenue. Eventually, another phase would extend the light rail system to Senator Frank R. Lautenberg Station via the Bergen Arches as recommended in the 2003 Bergen Arches Best Uses Study, which found that this would divert over 4,000 auto trips per day to transit trips by 2025. Abutting the light rail, a linear bike-pedestrian multi-use path should be created on the Sixth Street Embankment and through the Bergen Arches. This project will improve access to the regional employment center in Downtown Jersey City.

- HBLR Extension (#16 on Figure 4.4-1 and in Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map – Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map prevails) – In the first phase, the HBLR Extension is envisioned to extend from the Westside Avenue station to the Bayfront I redevelopment area, and would include a new HBLR station west of Route 440. The recommendations for a boulevard and complete street along the Route 440/Routes 1&9T corridor between the Bayonne border and Route 7 in the final report for the Route 440/Routes 1&9T Multi-Use Urban Boulevard and Through Truck Diversion Concept Development Study dated May 2011 prepared by Jacobs Engineering include a boulevard and complete street that accommodates an elevated crossing of the Hudson-Bergen Light Rail Westside Avenue branch from its current terminus at Westside Avenue Station to a new station just north of the Bayfront I Redevelopment Plan area in the vicinity of Culver Avenue, which was identified as the Locally Preferred Alternative by NJ Transit's Hudson-Bergen Light Rail Route 440 Extension Alternatives Analysis. In a later phase, it is envisioned that the HBLR would extend across the Hackensack River possibly in the location of the existing piers, through Kearny, and over the Passaic River into Newark. This project would provide greater regional connectivity to and from Jersey City.

- HBLR Wye Bypass (#18 on Figure 4.4-1) – The HBLR bypass of the wye-intersection at 18th Street will increase HBLR system capacity and flexibility.

- Jersey Avenue HBLR Realignment (#21 on Figure 4.4-1) – The realignment of the HBLR will eliminate the existing awkward geometry of the tracks and share right-of-way with the Jersey Avenue Extension (#20 on Figure 4.4-1) south to the intersection of Zapp Drive and Phillip Drive. NJ TRANSIT may provide an additional station along this new realigned segment.

- New Connection Between Pavonia-Newport HBLR and PATH Newport Station (#37 on Figure 4.4-1) – A new entrance to the existing PATH underground mezzanine above the track platforms in Washington Boulevard in order to grade separate the Washington Boulevard pedestrian crossing and shorten the walking distance between the PATH and HBLR. The new entrance should be located along the Westside of Washington Boulevard at the east end of Newport Office Center (NOC III) passageway from HBLR Station.

- HBLR Danforth Interlocking (#38 on Figure 4.4-1) – The new Danforth Interlocking would be used to run both AM and PM peak service between Danforth and Pavonia-Newport Stations using the pocket track to turn. It would provide additional service and additional capacity for Jersey City local riders. This is critical given that Jersey City local riders may eventually experience crowding from new riders from the Bayonne extension to 8th Street, future extension to Rt. 440 on the Westside Avenue line, and continued development between Essex Street and Liberty State Park. Light Rail vehicles from Bayonne and Westside are projected to be operating at or near capacity prior to reaching “inner” portions of Jersey City, and therefore the New Danforth interlocking could ameliorate a degradation of service.

- New Southbound Side Platform at Pavonia/Newport HBLR Station (#42 on Figure 4.4-1) – A new platform would be constructed on the southbound track. It would improve pedestrian flows on and off the trains at one of the busiest stations on the system. It would reduce the numbers of people that cross in front of the stopped southbound trains and would cut down on station dwell time. This improvement could be patterned after the design of the platforms for northbound HBLR trains at the Exchange Place station.

- Rail Road Right-of-Way North of Journal Square(#51 on Figure 4.4-1) – This unused right-of-way could be used to improve connectivity for the rail system.

In addition to the above rail right-of-way locations, right-of-way would also be required for the following proposed HBLR stations that are identified in Figure 4.4-1:

- Jersey Avenue Station
- Baldwin Avenue Station
- Tonnele Avenue Station
- 18th Street Station
- Mill Creek Station
- Station between Pacific Avenue and Halladay Street
- Caven Point Avenue Station
- Bayfront Station (west of Westside Avenue Station and Route 440)
- A station in Kearny and in Newark at the line extending west from Bayfront Station

Appendix *Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map* supercedes Projects # 4, 12, 16, 24, 44, 46, 52 & 57 as depicted on this map.

Amended June 14, 2011 to note that Appendix *Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map* supercedes Projects # 4, 12, 16, 24, 44, 46, 52 & 57 as depicted on this map.

Amended December 1, 2009 to change status of the Canal Crossing street grid from "Conceptual" to "Proposed."

PROPOSED PROJECTS

ID	NAME	ID	NAME
1	11th Street Viaduct Extension and Grade Separation of 14th Street	32	Marin Boulevard Extension
2	Academy Street Bus, Bike and Pedestrian Extension	33	Metro Plaza Future Grid
3	Bay Street Extension	34	Morgan Street Extension
4	Bayfront I	35	Morris Canal Greenway**
5	Bus Layover Facility	36	Morris Street ROW Pedestrian Extension
6	Canal Crossing	37	New Connection Between Pavonia-Newport HBLR and PATH Newport Station
7	Claremont RDP Future Street Grid	38	New Danforth Interlocking
8	Corbin Avenue Extension	39	New Jersey Turnpike Exit 14A Reconfiguration
9	Danforth Transit Village RDP Street Grid	40	New Street
10	Dey Street Extension	41	New Grid to Support Potential Development on Burma Road
11	Downtown HBLR Circulator	42	New Southbound Side Platform at Pavonia- Newport Station
12	Future New Urbanist Street Grid	43	New Street to connect Woodward and Van Horne Streets
13	Garabrant Street Extension	44	New Urbanist Street Grid
14	Garfield Avenue Widening	45	Newport NE Quadrant
15	Grand/Jersey Redevelopment Plan	46	NJCU West Campus
16	HBLR Extension	47	Old Colony Shopping Center Future Grid
17	HBLR Extension to Secaucus Junction (Lautenberg Station)	48	Pedestrian Connector to HBLR
18	HBLR Wye Bypass	49	Pedestrian Passage along HBLR
19	Hoboken Terminal	50	Portway
20	Jersey Avenue Extension (south)	50A	Portway: New 1-9T Extension
21	Jersey Avenue HBLR Realignment	50B	Portway: Route 1-9T/St. Paul's Avenue Viaduct
22	Jersey Avenue Park Redevelopment Plan	50C	Portway: Wittpenn Bridge
23	Proposed Journal Square Redevelopment Plan*	50D	Portway: New Road under St. Pauls Avenue Viaduct
24	Kellogg Street Extension	51	Railroad ROW North of Journal Square
25	Lafayette Gardens Hope VI	52	Route 440/Route 1-9T Multiuse Urban Boulevard
26	Lafayette Walkway	53	Sip Avenue Connector
27	Lehigh Valley RR ROW Preservation	54	Sixth Street Embankment/East-West Connections
28	Liberty Harbor North	55	State Street Extension
29	Linden Avenue Realignment	56	Warren Street Extension
30	Maple Street - Bishop Street Connector	57	Water Street Redevelopment
31	Maple Street Extension		

* pending adoption by the City Council

** where feasible

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0 400 800 1,600 Feet

Prepared by: STK, April 20, 2009

Source: NJDEP - Municipal Boundary, Open Water; NYC Department of City Planning - New York City; NJDOT - 2008Roads; Jersey City Planning Department - Walkways, Greenways, Proposed Projects; PS&S - Hudson River Walkway; RBA - East Coast Greenway

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Proposed Projects

ConceptStatus

- Proposed Project
- Conceptual Project

Hudson–Bergen Light Rail

- Existing Lines
- Proposed Lines
- Existing LRT Station
- Proposed LRT Station

PATH

- PATH Lines
- Existing PATH Stop
- Proposed PATH Stop
- Rail Lines
- Spurs and Sidings
- Ferry Routes
- Pedestrian Bridge

- Interstate Route
- U.S. Route
- State Route
- Toll Route
- County Route
- Local Roads
- Ramp
- Private Road
- Proposed Road
- Right of Way
- Park and Open Space
- Open Water
- Municipal Boundary
- State of New York

NOTE: Please contact the Jersey City Division of Planning for specific information on mapped areas.

Jersey City Circulation Element 2050
Figure 4.4-1: Right of Way Needs
City of Jersey City
Hudson County, New Jersey

NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

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4.4.2 Bus

The majority of recommended bus improvements are within existing rights-of-way and are therefore not indicated on the right-of-way mapping. However, one improvement, a bus layover facility (#5 on Figure 4.4-1) could potentially require right-of-way, or would be built on land purchased by NJ TRANSIT. Regardless, there is a need for a bus layover facility that is accessible to Downtown Jersey City, since buses are no longer permitted to idle in Exchange Place Plaza for home land security reasons. Exchange Place is closed to vehicular traffic except for emergency vehicles. The potential bus layover facility would serve buses for temporary storage for the mid-day between the AM and PM peak hours. This would make it easier to serve the afternoon peak period. The proposed location would require coordination with several agencies including NJ TRANSIT and the NJ Turnpike since the location for this facility may be underneath the NJ Turnpike Extension structures.

4.4.3 Road

The plan identifies multiple street grids to serve potential development and redevelopment, and proposes multiple roadway extensions to serve developments for bikes, vehicles, and pedestrians. The plan also identifies rights-of-way that are potential or proposed for state highways and county roads. These projects are to alleviate congestion and to better serve the region and enhance the movement of goods and services. As stated in section 4.2, many of these roadway extensions, grids, and projects are necessary to alleviate the congestion that is projected through 2050 and provide the infrastructure necessary to support approved and anticipated development and redevelopment. These street grids, roadway extensions and projects requiring right-of-way include:

<u>Street Grids in Adopted Redevelopment Plans</u>

- Bayfront I (#4 on Figure 4.4-1 and in Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map – Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map prevails) - The City and Honeywell have entered into an agreement to redevelop the site together. Site cleanup is well underway, and utility relocation is anticipated in near future. The future street grid will accommodate buses, include pedestrian walkways, and provide access to a new HBLR station. The final report for the Route 440/Routes 1&9T Multi-Use Urban Boulevard and Through Truck Diversion Concept Development Study dated May 2011 prepared by Jacobs Engineering refined the Bayfront I street grid.

- Canal Crossing (#6 on Figure 4.4-1) - This is a large, mixed-use redevelopment area that may include up to 5,000 residences and 600,000 square feet commercial space. A new street grid is proposed for this area, along with an additional HBLR station at Pacific Avenue. The new light rail station and the existing station at Garfield Avenue may be adequate to handle the anticipated increase to transit ridership. The feasibility of the proposed Pacific Avenue station along the Westside HBLR line is to be determined.

- Claremont Redevelopment Plan Area Future Street Grid (#7 on Figure 4.4-1), Danforth Transit Village Redevelopment Plan Area Street Grid (#9 on Figure 4.4-1) - These are future street grids to accommodate redevelopment.

- Grand Jersey Redevelopment (#15 on Figure 4.4-1) - The Grand Jersey Redevelopment plan proposes a new grid system west of Liberty Harbor North. The proposed roadway network includes the extension of Jersey Avenue south over Mill Creek to the intersection of Zapp Drive and Phillip Drive. A proposed realignment of the HBLR line is also envisioned, which will eliminate a sharp curve in the light rail tracks. A new HBLR station may be situated south of Mill Creek. The proposed realignment of the HBLR will share right-of-way with the Jersey Avenue extension.

- Jersey Avenue Park Redevelopment Plan (#22 on Figure 4.4-1) - This area could accommodate new residential development.

- Liberty Harbor North (#28 on Figure 4.4-1) - This area is partially developed and there is a proposed grid. This is an adopted redevelopment plan.

- NJCU West Campus (#46 on Figure 4.4-1 and in Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map – Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map prevails) - This new street network will serve the campus and follow the NJCU West Campus Redevelopment Plan.

- Water Street Redevelopment (#57 on Figure 4.4-1 and in Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map – Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map prevails) - This area will be developed to provide a grid system east of Route 440 and north of the proposed Westside HBLR extension. This redevelopment plan has been adopted. The final report for the Route 440/Routes 1&9T Multi-Use Urban Boulevard and Through Truck Diversion Concept Development Study dated May 2011 prepared by Jacobs Engineering refined the Water Street street grid.

<u>Future Street Grids or Future Modifications to Street Grids</u>

- Proposed Journal Square Redevelopment Plan (#23 on Figure 4.4-1) – Modifications to the right-of-way may include changes to the directionality of streets, increases in sidewalk widths, construction of bike lanes, and accommodation of a narrow-gauge trolley system.

- Metro Plaza Future Grid (#33 on Figure 4.4-1) - This area is envisioned for residential towers. This grid will support the development and accommodate the HBLR.

- New roads to support Potential Development on Burma Road (#41 on Figure 4.4-1) - These new roads would create a street grid to support potential residential development.

- Newport Northeast Quadrant (#45 on Figure 4.4-1) - This grid will continue the Newport grid to support residential/commercial development.

- Old Colony Shopping Center Future Grid (#47 on Figure 4.4-1) – Currently, there is not an adopted redevelopment plan for this area. Future redevelopment should include a new street grid.

- Hoboken Terminal (#19 on Figure 4.4-1) – Hoboken Terminal and Yard Redevelopment Plan will include high intensity mixed-use development in the Hoboken Terminal area.

The final report for the Route 440/Routes 1&9T Multi-Use Urban Boulevard and Through Truck Diversion Concept Development Study dated May 2011 prepared by Jacobs Engineering recommended the creation of a boulevard and complete street on the Route 440 and Routes 1&9T corridor, as well as a network of new local streets adjacent to the corridor. See Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map in Appendix for details. The following rights-of-way are needed to implement the vision for the Western Waterfront:

- Future New Urbanist Street Grid (#12 on Figure 4.4-1 and in Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map – Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map prevails) - This area will accommodate a future street grid along the Hackensack River Waterfront north of Bayfront I. The Bayside Development Study examined the development potential in the west side of Jersey City and included improvements to the street grid. This new urbanist street grid will extend the grid from Bayfront I and change the character of the area from industrial/commercial to a residential neighborhood. Additionally, the final report for the Route 440/Routes 1&9T Multi-Use Urban Boulevard and Through Truck Diversion Concept Development Study dated May 2011 prepared by Jacobs Engineering further refined the new street grid for this area.

- New Urbanist Street Grid (#44 on Figure 4.4-1 and in Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map – Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map prevails) - Future redevelopment of this area should include the creation of a new urbanist street grid. Currently, this area is not in an adopted redevelopment plan. The final report for the Route 440/Routes 1&9T Multi-Use Urban Boulevard and Through Truck Diversion Concept Development Study dated May 2011 prepared by Jacobs Engineering identified a new street grid for this area, which includes the extension of Kellogg Street (#24 on Figure 4.4-1).

- Route 440/Route 1 & 9T Multi-use Urban Boulevard (#52 on Figure 4.4-1 and in Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map – Appendix Route 440 and Routes 1&9T Boulevard and Complete Street Plan and Right-of-Way Needs Map prevails) – This project will have an urban, context-sensitive design to make this corridor into a bicycle-friendly and pedestrian-friendly Main Street that supports future redevelopment in the area. The City received a federal earmark to design the boulevard. The final report for the Route 440/Routes 1&9T Multi-Use Urban Boulevard and Through Truck Diversion Concept Development Study dated May 2011 prepared by Jacobs Engineering delineates the right-of-way for the boulevard and complete street between the Bayonne border and Route 7.

Local Street Extensions

- Academy Street Bus, Bike, and Pedestrian Extension (#2 on Figure 4.4-1) continues from Baldwin Avenue to Columbus Drive - The continuation of Academy Street could use existing right-of-way behind the Block Drug building, the NJ Turnpike Extension, and PATH tracks, and could potentially be used for bus, pedestrians, and bicyclists. This project would require a bridge over the railroad tracks. This project should be coordinated with the Sip Avenue Connector (#53 on Figure 4.4-1).

- Bay Street Extension (#3 on Figure 4.4-1), Kellogg Street Extension (#24 on Figure 4.4-1), Morgan Street Extension (#34 on Figure 4.4-1), and New Street to Connect Woodward Street and Van Horne Street (#43 on Figure 4.4-1) - These are all roadway extensions to enhance the existing street grids.

- Corbin Avenue Extension (#8 on Figure 4.4-1) Dey Street Extension (#10 on Figure 4.4-1) – These are future street grids and extensions to support the Canco Loft Redevelopment.

- Garabrant Street Extension (#13 on Figure 4.4-1) - The Garabrant Street extension continues the street grid through the park and ride lot at the Liberty State Park HBLR station, which will support its redevelopment.

- Jersey Avenue Extension (South) (#20 on Figure 4.4-1) - This southerly extension of Jersey Avenue will connect to the intersection of Audrey Zapp Drive and Phillip Drive and improve circulation The design can accommodate limited vehicular traffic and provide right-of-way for the realignment of the HBLR. It will also be bicycle and pedestrian friendly.

- Linden Avenue Realignment (#29 on Figure 4.4-1) - This removes a jog in Linden Avenue where it connects to Caven Point Road.

- Maple Street Bishop Street Connector (#30 on Figure 4.4-1) - Whitlock Cordage is a residential development that is in the vicinity of this potential street grid extension. This extension will provide connectivity to Grand Street and the Lafayette neighborhood to provide alternate neighborhood access. This is in the Morris Canal Redevelopment Plan.

- Maple Street Extension (#31 on Figure 4.4-1) - Maple Street will be extended from Monitor Street to provide easier access to the HBLR. This is a proposed street which was vacated that would be re-established. This right-of-way will accommodate pedestrian and bicycle travel.

- Marin Boulevard Extension (#32 on Figure 4.4-1) - This extension will provide access to Liberty Harbor North Redevelopment Plan Area.

- New Street (#40 on Figure 4.4-1) - This area would be private right-of-way which would extend from Pavonia Avenue to support residential development.

- Sip Avenue Connector (#53 on Figure 4.4-1) - This roadway connection would provide better East-West connectivity in the City by enabling vehicles, pedestrians, and bicyclists to travel from Columbus Drive to Sip Avenue.

- State Street Extension (#55 on Figure 4.4-1) - This roadway extension is in support of Whitlock Cordage.

- Warren Street Extension (#56 on Figure 4.4-1) - This extension is between 2nd Street and Thomas Gangemi Drive which is in the Metro Plaza Area, and should accommodate a future HBLR crossing. The Metro Plaza Area future grid should include the Warren Street Extension.

Roadway Projects

- 11th Street Viaduct and Grade separation of 14th Street (#1 on Figure 4.4-1) - This project will relieve congestion on local Jersey City Streets and could have possible phasing. The 11th Street viaduct and ramp improvement will provide separate facilities for Holland Tunnel-bound traffic and Jersey City-bound traffic. The 14th Street Viaduct and new ramp will improve traffic flow for outbound traffic from the Holland Tunnel and Washington Boulevard and provide smoother access to Jersey City.

- Garfield Avenue Widening between Bayview Avenue and Grand Street (#14 on Figure 4.4-1) will support an additional travel lane on Garfield Avenue.

- New Jersey Turnpike Interchange 14A Reconfiguration (#39 on Figure 4.4-1) - This project will involve right-of-way however it is still in the planning stage. The project should ease congestion and provide for safer and smoother commercial traffic access to freight terminals.

- Portway (#50 on Figure 4.4-1) - This is a multi-jurisdictional, regional series of projects by NJDOT meant to facilitate truck movements within the port area. The projects include:

    - New 1& 9 Truck Extension (#50A on Figure 4.4-1) between St. Paul's Avenue and Secaucus Road. Currently, this project is in the preliminary design phase.

    - St. Paul's Avenue Viaduct/ Route 1&9T (#50B on Figure 4.4-1 - The Route 1 & 9 Viaduct over St. Paul's Avenue has been awarded for construction. It includes replacing the Routes 1&9 Viaduct over St. Paul's Avenue with a new structure on a new alignment north of the present structure. It will build new approach roads to safely connect to Route 1&9T, Route 7, Pulaski Skyway, Route 139, Route 1&9 north of Tonnele Circle and local streets in Jersey City. This provides a more continuous flow of traffic from Routes 1&9 southbound to the Pulaski Skyway. The Charlotte Circle has been eliminated and a reconfiguration of Tonnele Circle will be included in this project.

    - Wittpenn Bridge replacement (#50C on Figure 4.4-1) - Wittpenn Bridge will remain a vertical span but be raised to reduce the number of bridge openings. The bridge will be rebuilt north of the existing bridge. It will accommodate sidewalks and be bicycle compatible for the East Coast Greenway Route. The project includes the realignment of Fish House Road on the west side of the Hackensack River. The project will be completed in phases, and the last phase is anticipated to be completed in Fall 2015.

    - New Road Under St. Paul's Avenue Viaduct (#50D on Figure 4.4-1) - There will be a new road constructed under the St. Paul's Avenue Viaduct to connect to the new 1&9T (#50A).

- Layfayette Gardens Hope VI (#25 on Figure 4.4-1) – This is a future street grid to accommodate redevelopment.

4.4.4 Bike and Pedestrian

Many of the bike and pedestrian accommodations recommended in this plan utilize the existing rights-of-way, however there are several locations where right-of-way needs to be obtained or preserved for trails, walkways and pedestrian accommodations. These locations include:

- Lafayette Walkway (#26 on Figure 4.4-1) - The Lafayette Walkway is a proposed project included in the Morris Canal Redevelopment Plan.
- Lehigh Valley Railroad Right-of-Way Preservation (#27 on Figure 4.4-1) - This area is intended to be used as a greenway or park.
- Maple Street Extension (#31 on Figure 4.4-1) - Maple Street will facilitate pedestrian and bicycle access to the HBLR station at Liberty State Park.
- Morris Canal Greenway (#35 on Figure 4.4-1) - This is a greenway that is envisioned, where feasible, along the former Morris Canal.
- Morris Street Right-of-Way Pedestrian Extension (#36 on Figure 4.4-1) - This right-of-way extension will provide pedestrian access to the waterfront and Hudson River Waterfront Walkway.
- Pedestrian Connector to HBLR (#48 on Figure 4.4-1) - This right-of-way supports the creation of intercept parking at an unused rest stop on the NJ Turnpike Extension between Mile Posts 63 and 64. There should be pedestrian connectivity between intercept parking facility and the Richard Street HBLR station.
- Pedestrian Passage along HBLR (#49 on Figure 4.4-1) – There is a pedestrian path on the southern side of the HBLR tracks, and there is potential to provide pedestrian access along the northern side of the tracks, which would improve access to the HBLR station at Marin Boulevard.
- Sixth Street Embankment/ East-West Connections (#54 on Figure 4.4-1) - The Sixth Street Embankment should be reused as a linear multi-use path/park for bikes and pedestrians. The Sixth Street Embankment should also include space for a future extension of the HBLR.

4.5 Functional Classification System

Functional classification is the process by which roads are grouped according to the service they are intended to provide, and how these roads fit into the circulation network so that travel can be efficient and serve all of its users. Smaller, less traveled roadways provide motorists with a high degree of access. Larger roadways provide motorists with a high degree of mobility.

The Federal Highway Administration has a Federal functional classification system. Additionally, other agencies have either a classification system with standards, or roadway standards, which include the NJDOT State Highway Access Management Code that applies to State highways, the NJDCA Residential Site Improvement Standards, and Hudson County.

Jersey City's Land Development Ordinance also has standards that apply to roads and streets.

The Circulation Plan Element has established a roadway classification system for the purpose of establishing Typical Roadway Sections that are applicable to the intensity of the street. Jersey City's roadway classification system is not intended to replace the Federal designations. The Jersey City designations are separate from the Federal designations and serve a specific purpose for the plan, which is to establish the street design. The Jersey City designations were established with guidance from NJDCA Residential Site Improvement Standards, and the service they were intended to provide.

4.5.1 Federal Designations

The Federal Highway Administration's (FHWA) functional classification system is developed in cooperation with county and Metropolitan Planning Organization officials. The Federal system is updated every ten years after the US Census is released. With input from Hudson County and NJDOT, the Federal Highway Administration (FHWA) develops a classification of roads and highways using Federal guidelines. The system is divided into urban and rural categories. All Jersey City streets fall in the urban category. The Federal designations are as follows:

Urban Interstate: Limited access highway, serving high-volume traffic that connects major generators. An example of an urban interstate in Jersey City is I-78 which leads to the Holland Tunnel.

Urban Freeway/Expressway: Expressway and limited access, serving high-volume traffic that connect major generators. US Route 1 Secondary is considered an example of this roadway type.

Urban Principal arterial highway: Major streets or highways, many of multilane or freeway design, serving high-volume traffic corridor movements that connect major generators of travel. Some examples in Jersey City are: NJ Route 440, US Routes 1&9 T, NJ Route 7, and NJ Route 139.

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Prepared by: STK, April 20, 2009
Source: NJDEP - Municipal Boundary, Open Water; NYC Department of City Planning - Borough Boundary, Roads; NJDOT - 2007 Roads; Jersey City Planning Department - Zoning, One Way Streets, Future Street Grids
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Federal Highway Administration Designation
- Urban Interstate
- Urban Freeway/Expressway
- Urban Principal Arterial

Jersey City Functional Class Designation
- Major Collector
- Minor Collector
- Minor Collector*
- Local Residential Street
- Local Park Road
- Undetermined

- Interstate Route
- U.S. Route
- State Route
- Toll Route
- County Route
- Ramp
- Private Road
- Proposed Road
- One Way Street
- Minor Collector
- Future Residential Street Grid
- Park and Open Space
- Open Water
- Municipal Boundary
- New York City

* Requires special design attention to accomodate buses.

CITY OF JERSEY CITY CORPORATE SEAL

Jersey City Circulation Element 2050
Figure 4.5-1: Roadway Functional Class
City of Jersey City
Hudson County, New Jersey

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NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

Urban Minor arterial highway: Major streets or highways, many of multilane or freeway design, serving high-volume traffic corridor movements that connect major generators of travel. In urban areas, the minor arterial roads distribute trips to small geographic areas but typically do not penetrate into neighborhoods. Examples of roads in Jersey City that are classified as urban minor arterials are: Danforth Ave (CR-602), Patterson Plan Road (CR-681), and Secaucus Road (CR-678).

Urban collector: Roads that primarily serve intra-county trips characterized by moderate volume and speed, and that provide for land access, traffic circulation, and access to arterial routes. In urban areas, these streets provide direct access to neighborhoods and arterials. Examples in Jersey City include: Pacific Ave. (CR-621), Pavonia Ave, and Old Bergen Road (CR-601).

A full listing of FHWA Functional Classifications for the City roadways is found in the Appendices.

4.5.2 Jersey City Functional Classification System

Jersey City's Functional Classification system was established with guidance from NJDCA Residential Site Improvement Standards. Jersey City's Functional Classification System was based on how streets fit into Jersey City's roadway network and the service they were intended to provide. As previously stated, Jersey City's roadway classification system is not intended to replace the Federal designations. The Jersey City designations will be used in conjunction with the proposed typical sections that are found in Section 4.6. The Jersey City Functional Classification System designations are as follows:

Major collector: These streets include major City streets whose primary function is to collect and distribute traffic between minor collector streets, local streets, and the arterial system. These roads are characterized by moderate volume, and provide for land access, traffic circulation, and access to arterial routes. These streets may also serve industrial and warehouse areas. Examples of major collectors are Christopher Columbus Drive, Grand Street (from Communipaw Avenue to Washington Street), Jersey Avenue (from Newark Avenue to 18th Street), and Grove Street.

Minor Collector: Streets that serve multiple land uses, and whose primary function is to provide land access and inter-neighborhood traffic movement. These streets typically feed into a higher level street and serve as small local neighborhood commercial and residential areas. Examples of minor collectors in Jersey City include Newark Avenue, Summit Avenue, Tonnele Avenue, and Thomas Gangemi Drive.

Local Residential Street: Streets that primarily serve residential areas with full access for all users. These streets carry low traffic volumes. These streets provide ample access, and can exist in any land use setting and involve travel to and from a collector facility. Examples of local residential streets include: Vroom Street, Water Street, Clarke Avenue, and Cubberly Place.

Local Park Street: Streets that serve parks that focus on full access for all users. These streets carry low traffic volumes. Examples of local park streets include: Freedom Way, Morris Pesin Drive, and Lincoln Park Road

A full listing of Jersey City Functional Classifications is found in the Appendices.

4.6 Typical Sections

The Typical Sections provide design guidelines for new and existing streets in Jersey City. In most cases it is not possible to widen existing local streets due to the locations of existing structures. Therefore, this Plan establishes Typical Roadway Sections that utilize the existing right-of-way in a manner that accommodates all of its users. These Typical Sections should also be applied to all new roads, where applicable. These Typical Sections, where feasible, accommodate vehicles, bikes, pedestrians, street trees, bike racks and street amenities.

Typical Sections were established for Major Collectors, Minor Collectors, and Local Residential Streets as identified in Jersey City's Functional Classification system. Jersey City does not control the Local Park Streets. Therefore, Typical Roadway Sections were not established for this classification. However, Local Park Streets should be designed to accommodate all users and include amenities for bikes and pedestrians.

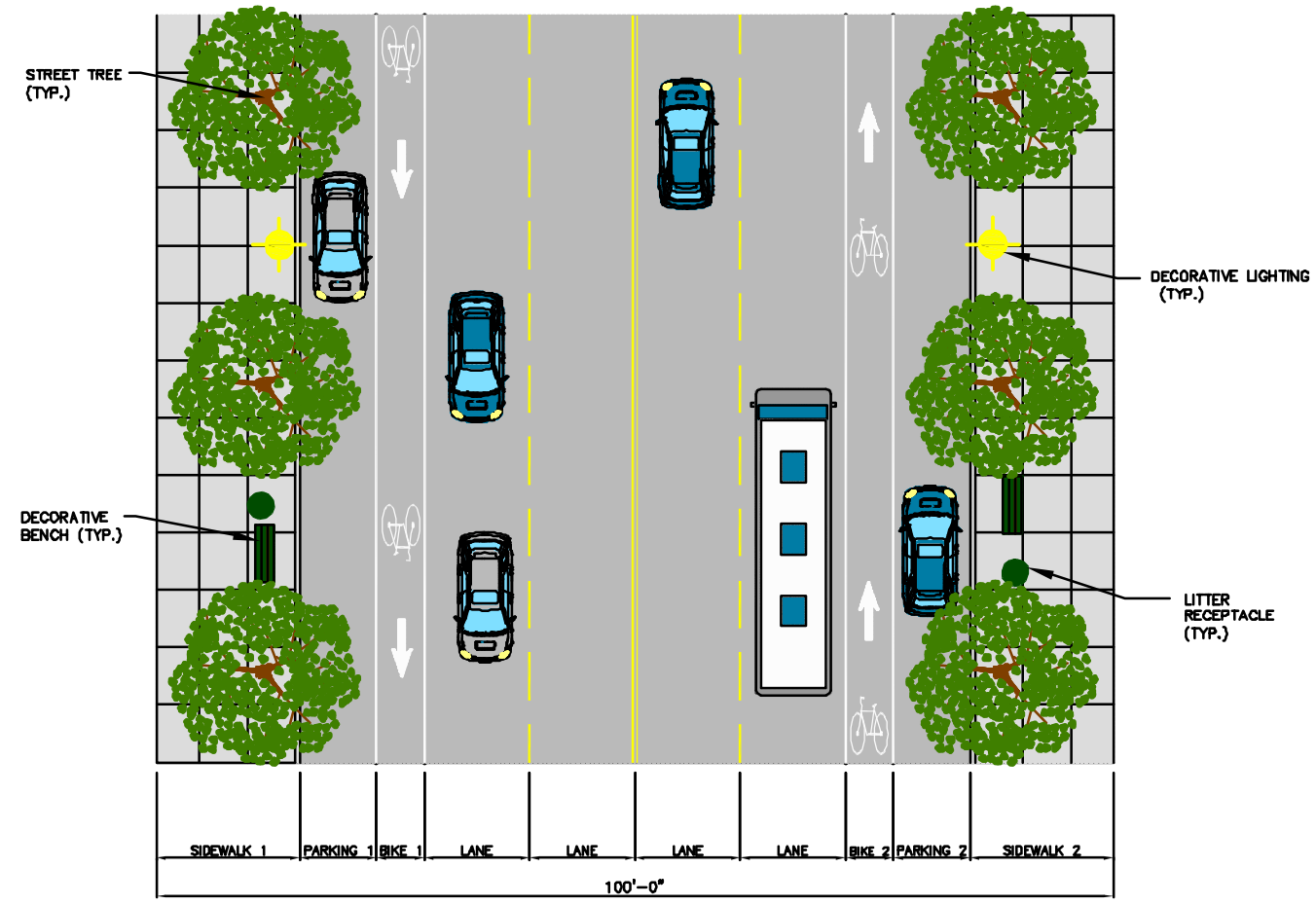
Jersey City has multiple right-of-way widths, therefore, five (5) predominant right-of-way widths were chosen for Typical Sections: 100 foot, 80 foot, 66 foot, 60 foot, and 50 foot rights-of-way. A Typical Section was developed for each classification (Major Collector, Minor Collector, and Local Residential Street) for each of the five right-of-way widths, where applicable. Typical Sections are established for the following roadway types, where applicable:

- Two-way Street; two-sided parking
- Two-way Street; two-sided alternate side parking and cycle track
- Two-way Street; one-sided parking
- Two-way Street; no parking
- Boulevard or Center Turn Lane
- One-way Street; two-sided parking
- One-way Street; one-sided parking

The Typical Sections show locations of sidewalk amenities. In addition, examples of traffic calming layouts can be found in the Traffic Calming section of the Plan. The following table shows a listing of Figure numbers for typical roadway sections of various right-of-ways which follow.

Figure #	Right-of-Way	Roadway Layout
Figure 4.6-1	100 Foot Right-of-Way	Two-Way Street; Two-Sided Parking
Figure 4.6-2	100 Foot Right-of-Way	Two-Way Street; Two-Sided Alternate Side Parking and Cycle Track
Figure 4.6-3	100 Foot Right-of-Way	Two-Way Street; One-Sided Parking
Figure 4.6-4	100 Foot Right-of-Way	Boulevard or Center Turn Lane
Figure 4.6-5	80 Foot Right-of-Way	Two-Way Street; Two-Sided Parking (Major and Minor)
Figure 4.5-5a	80 Foot Right-of-Way	Two-Way street; Two-Sided Parking (Local)
Figure 4.6-6	80 Foot Right-of-Way	Two-Way Street; Two-Sided Alternate Side Parking and Cycle Track
Figure 4.6-7	80 Foot Right-of-Way	Two-Way Street; One-Sided Parking
Figure 4.6-8	80 Foot Right-of-Way	Two-Way Street; No Parking
Figure 4.6-9	80 Foot Right-of-Way	Boulevard or Center Turn Lane
Figure 4.6-10	80 Foot Right-of-Way	One-Way Street; Two-Sided Parking
Figure 4.6-10a	80 Foot Right-of-Way	One Way Street; Two Sided Parking (Local)
Figure 4.6-11	80 Foot Right-of-Way	One-Way Street; One-Sided Parking

Figure #	Right-of-Way	Roadway Layout
Figure4.6-11a	80 Foot Right-of-Way	One Way Street; One Sided Parking (Local)
Figure 4.6-12	66 Foot Right-of-Way	Two-Way Street; Two-Sided Parking
Figure 4.6-12a	66 Foot Right-of-Way	Two-Way Street; Two-Sided Park (Minor and Local)
Figure 4.6-13	66 Foot Right-of-Way	Two-Way Street; One-Sided Parking
Figure 4.6-13a	66 Foot Right-of-Way	Two-Way Street; One-Sided Parking (Minor and Local)
Figure 4.6-14	66 Foot Right-of-Way	Two-Way Street; No Parking
Figure 4.6-14a	66 Foot Right-of-Way	Two-Way Street; No Parking (Minor Collector)
Figure 4.6-15	66 Foot Right-of-Way	Boulevard or Center Turn Lane
Figure 4.6-15a	66 Foot Right-of-Way	Boulevard or Center Turn Lane (Minor and Local)
Figure 4.6-16	66 Foot Right-of-Way	One-Way Street; Two-Sided Parking
Figure 4.6-16a	66 Foot Right-of-Way	One-Way Street; Two-Sided Parking (Minor and Local)
Figure 4.6-17	66 Foot Right-of-Way	One-Way Street; One-Sided Parking
Figure 4.6-18	60 Foot Right-of-Way	Two-Way Street; Two-Sided Parking
Figure 4.6-19	60 Foot Right-of-Way	Two-Way Street; One-Sided Parking
Figure 4.6-20	60 Foot Right-of-Way	Two-Way Street; No Parking
Figure 4.6-21	60 Foot Right-of-Way	Boulevard or Center Turn Lane
Figure 4.6-22	60 Foot Right-of-Way	One-Way Street; Two-Sided Parking
Figure 4.6-22a	60 Foot Right-of-Way	One-Way Street; Two-Sided Parking (Local)
Figure 4.6-23	60 Foot Right-of-Way	One-Way Street; One-Sided Parking
Figure 4.6-24	50 Foot Right-of-Way	Two-Way Street; Two-Sided Parking
Figure 4.6-25	50 Foot Right-of-Way	Two-Way Street; One-Sided Parking
Figure 4.6-26	50 Foot Right-of-Way	Two-Way Street; No Parking
Figure 4.6-27	50 Foot Right-of-Way	One-Way Street; Two-Sided Parking
Figure 4.6-28	50 Foot Right-of-Way	One-Way Street; One-Sided Parking
Figure 4.6-28a	50 Foot Right-of-Way	One-Way Street; One-Sided Parking (Minor and Local)



	SIDEWALK 1	PARKING 1	BIKE 1	LANE	LANE	LANE	LANE	BIKE 2	PARKING 2	SIDEWALK 2
MAJOR COLLECTOR	15'-0"	8'-0"	5'-0"	11'-0"	11'-0"	11'-0"	11'-0"	5'-0"	8'-0"	15'-0"
MINOR COLLECTOR	14'-0"	8'-0"	8'-0"	10'-0"	10'-0"	10'-0"	10'-0"	8'-0"	8'-0"	14'-0"

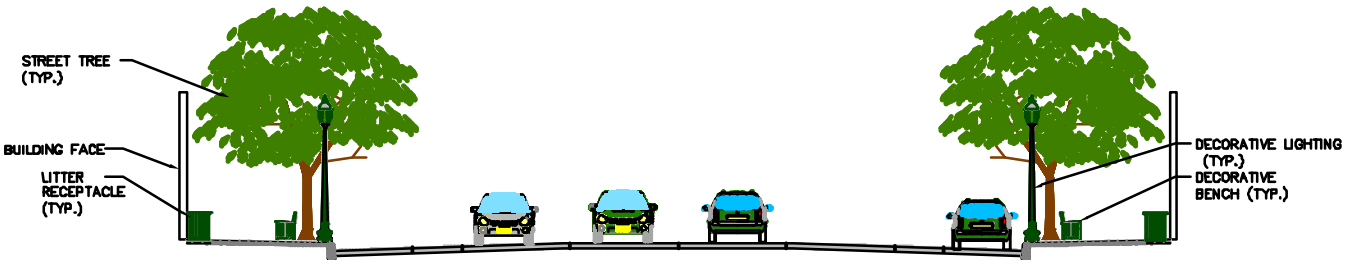
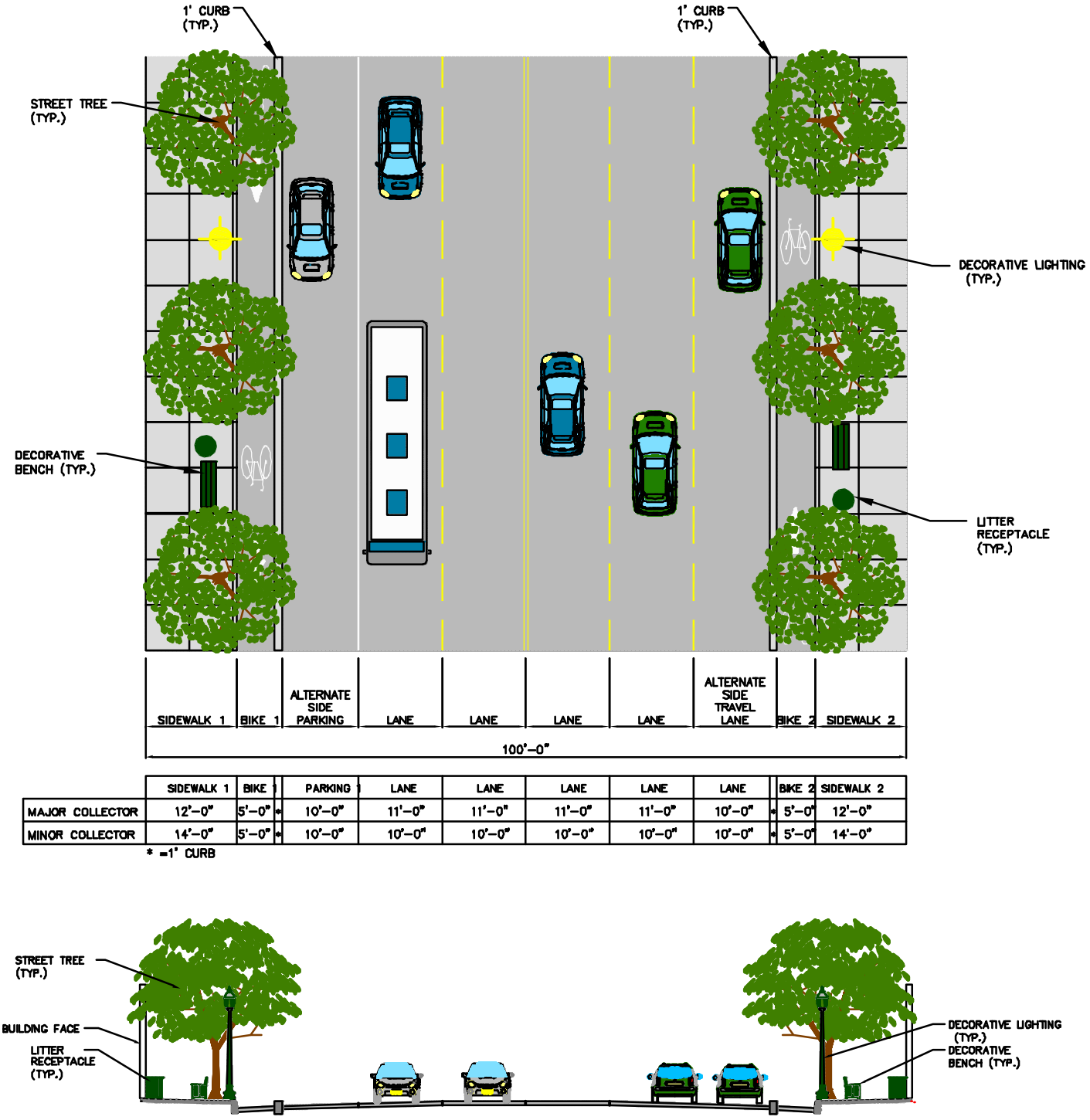


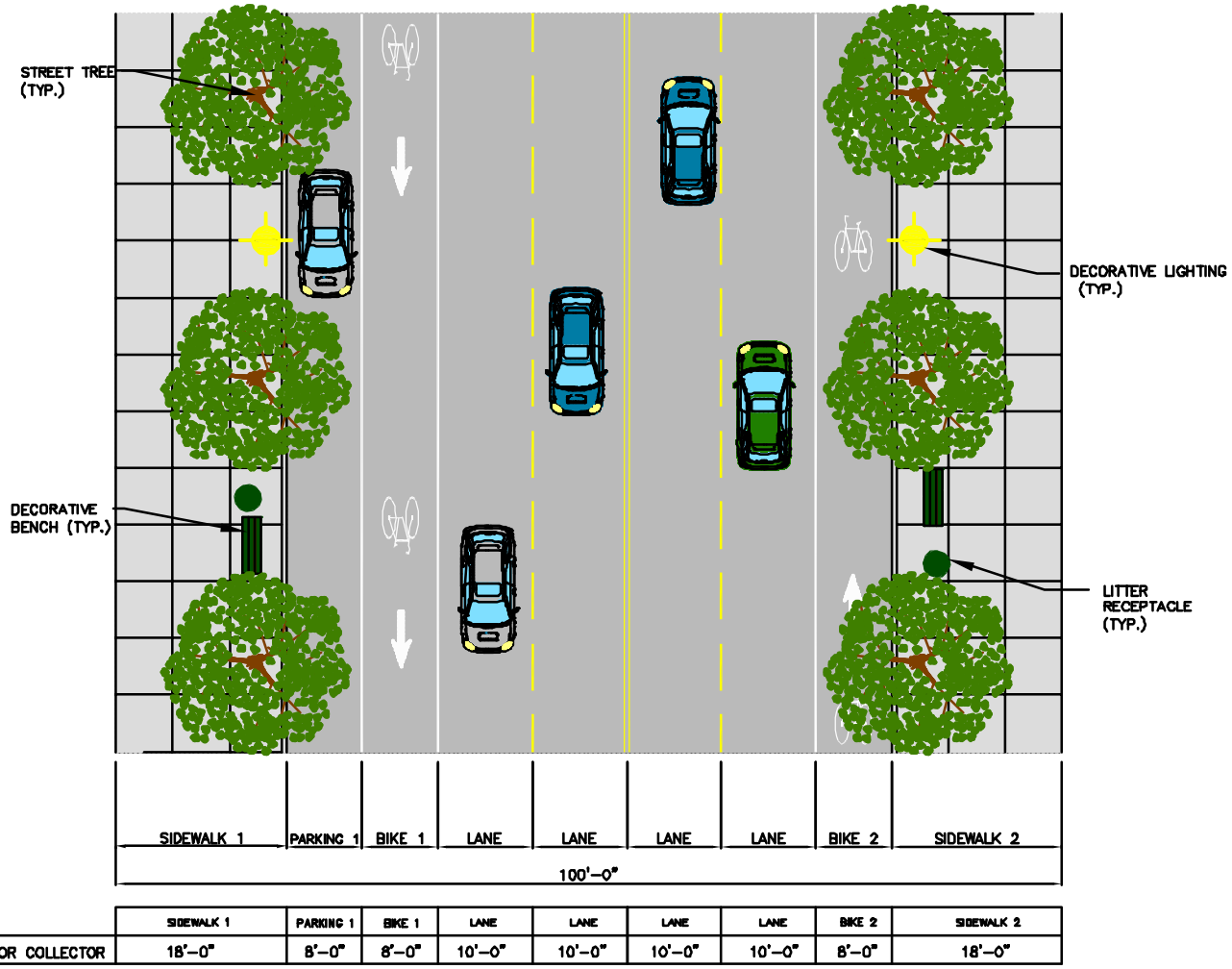
FIGURE 4.6-1
100' R.O.W.
TWO-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	BIKE 1	PARKING	LANE	LANE	LANE	LANE	LANE	BIKE 2	SIDEWALK 2
MAJOR COLLECTOR	12'-0"	5'-0" *	10'-0"	11'-0"	11'-0"	11'-0"	11'-0"	10'-0"	* 5'-0"	12'-0"
MINOR COLLECTOR	14'-0"	5'-0" *	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	* 5'-0"	14'-0"

* =1' CURB

FIGURE 4.6-2
100' R.O.W.
TWO-WAY STREET;
TWO-SIDED ALTERNATE SIDE PARKING
& CYCLE TRACK



	SIDEWALK 1	PARKING 1	BIKE 1	LANE	LANE	LANE	LANE	BIKE 2	SIDEWALK 2
MINOR COLLECTOR	18'-0"	8'-0"	8'-0"	10'-0"	10'-0"	10'-0"	10'-0"	8'-0"	18'-0"

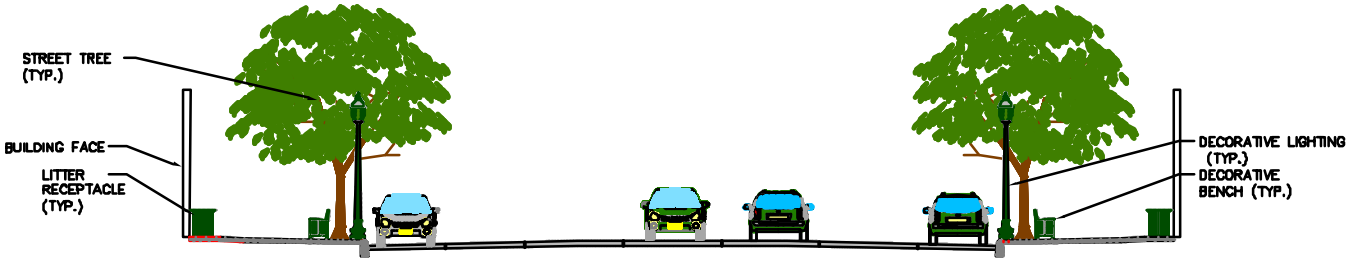
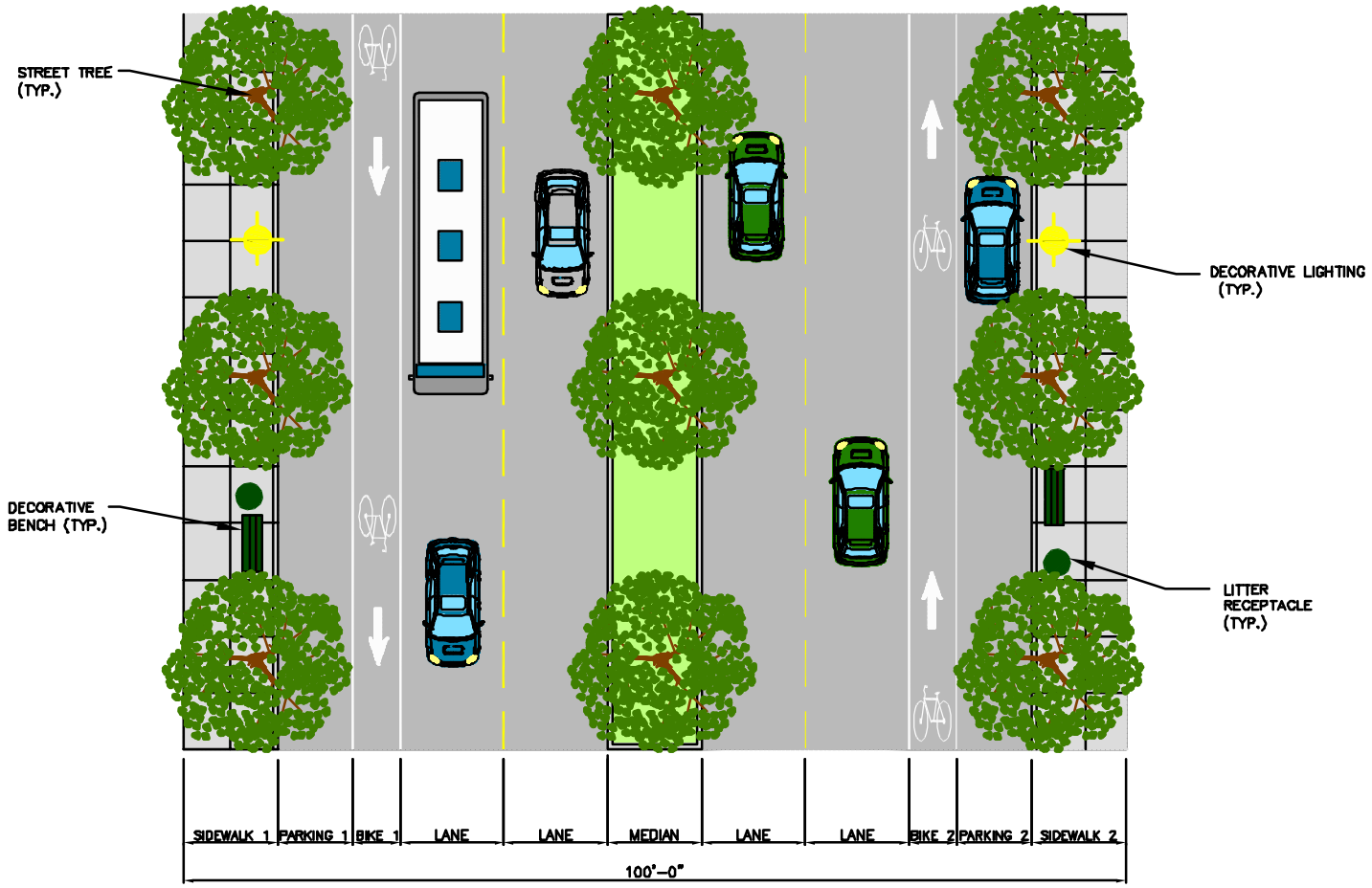


FIGURE 4.6-3
100' R.O.W.
TWO-WAY STREET
ONE SIDED PARKING



	SIDEWALK 1	PARKING 1	BIKE 1	LANE	LANE	MEDIAN	LANE	LANE	BIKE 2	PARKING 2	SIDEWALK 2
MAJOR COLLECTOR	10'-0"	8'-0"	5'-0"	11'-0"	11'-0"	10'-0"	11'-0"	11'-0"	5'-0"	8'-0"	10'-0"
MINOR COLLECTOR	10'-0"	8'-0"	5'-0"	10'-0"	10'-0"	14'-0"	10'-0"	10'-0"	5'-0"	8'-0"	10'-0"

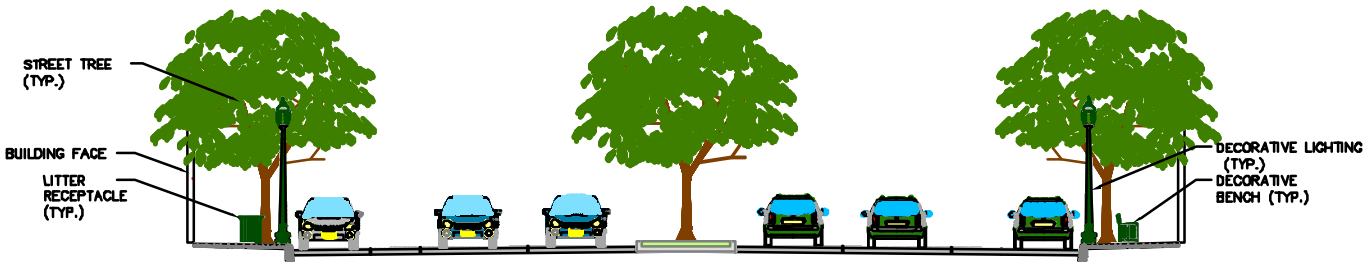
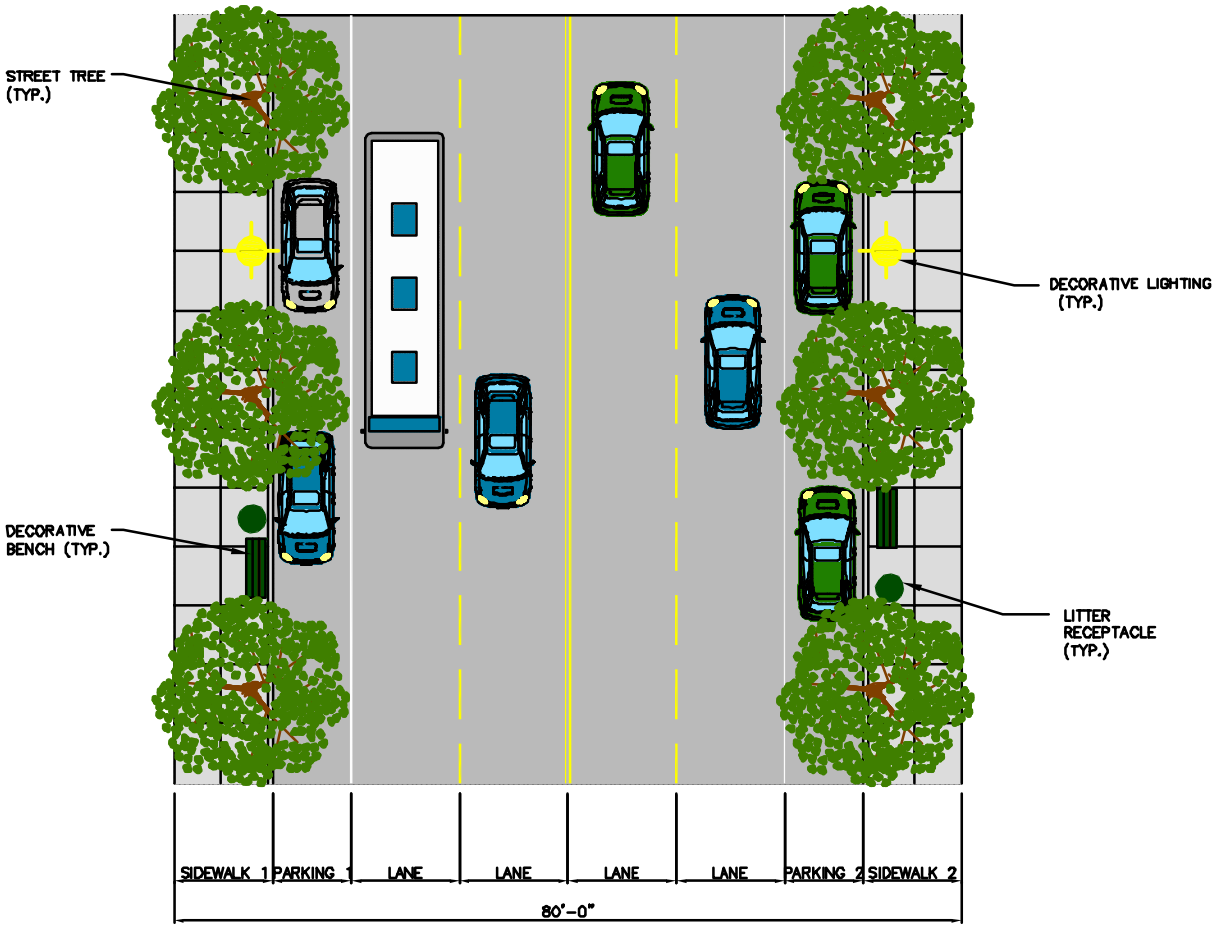


FIGURE 4.6-4
100' R.O.W.
BOULEVARD OR CENTER TURN LANE



	SIDEWALK 1	PARKING 1	LANE	LANE	LANE	LANE	PARKING 2	SIDEWALK 2
MAJOR COLLECTOR	10'-0"	8'-0"	11'-0"	11'-0"	11'-0"	11'-0"	8'-0"	10'-0"
MINOR COLLECTOR	12'-0"	8'-0"	10'-0"	10'-0"	10'-0"	10'-0"	8'-0"	12'-0"
LOCAL RESIDENTIAL	SEE NEXT SHEET FOR TYPICAL TWO-WAY STREET, TWO SIDED PARKING PLAN & SECTION.							

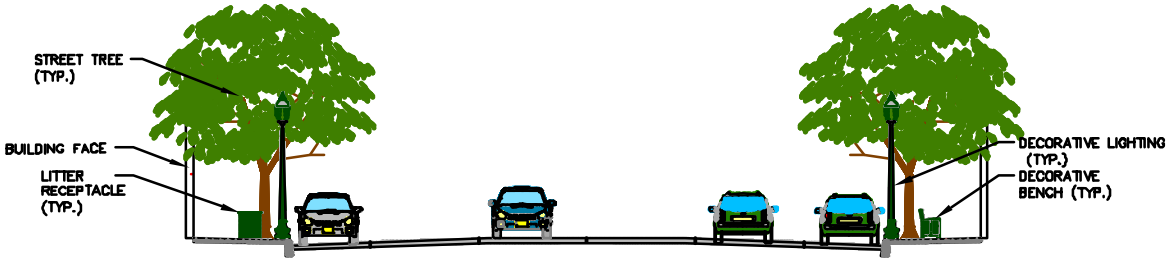
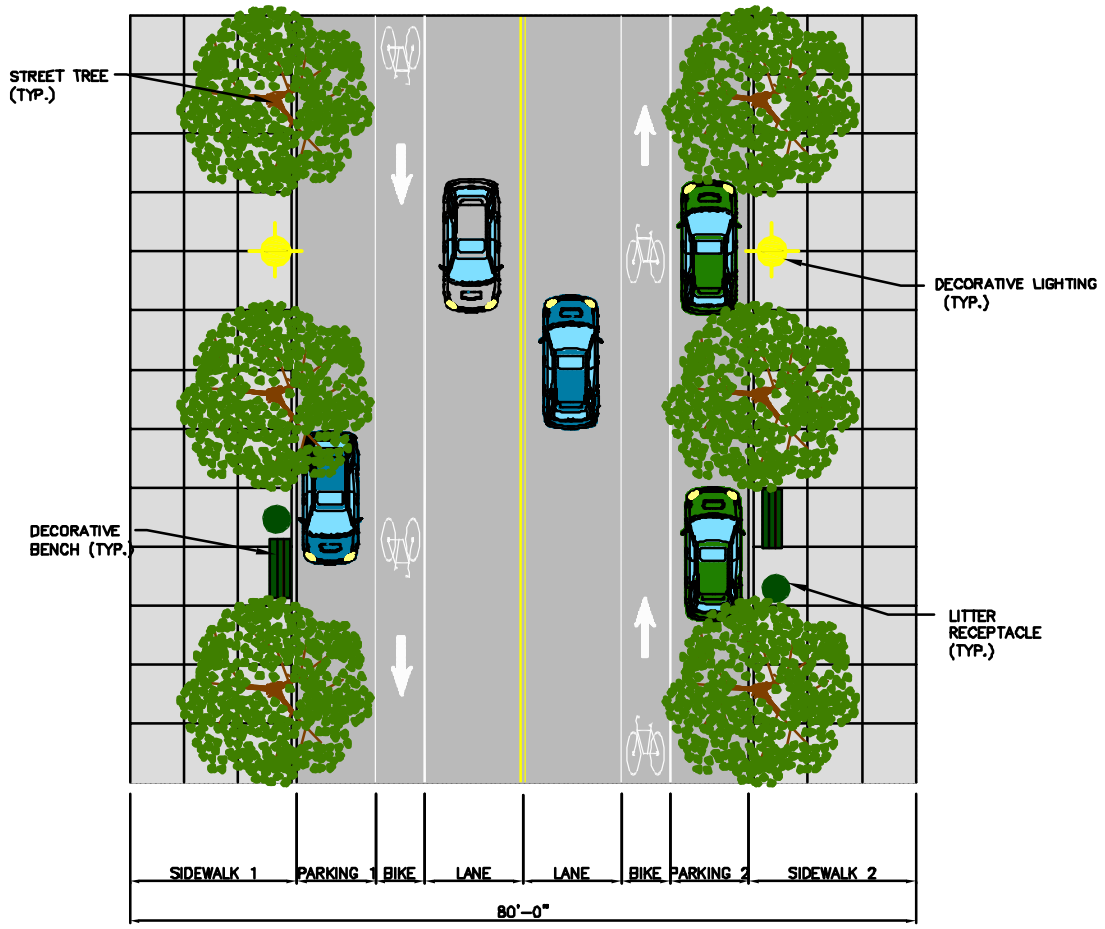


FIGURE 4.6-5
80' R.O.W
TWO-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	PARKING 1	BIKE 1	LANE	LANE	BIKE 2	PARKING 2	SIDEWALK 2
LOCAL RESIDENTIAL	17'-0"	8'-0"	5'-0"	10'-0"	10'-0"	5'-0"	8'-0"	17'-0"

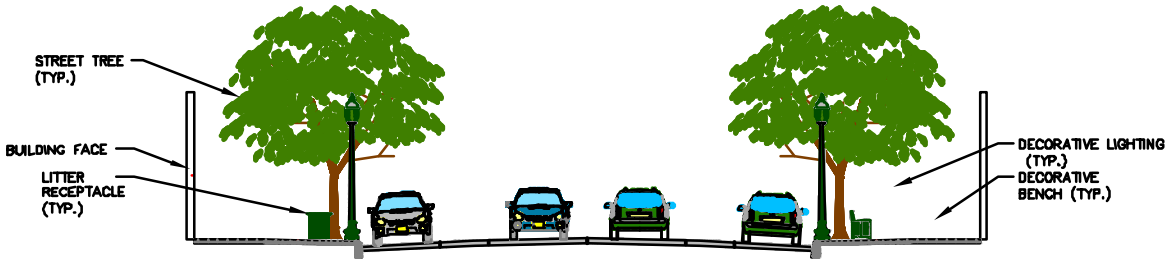
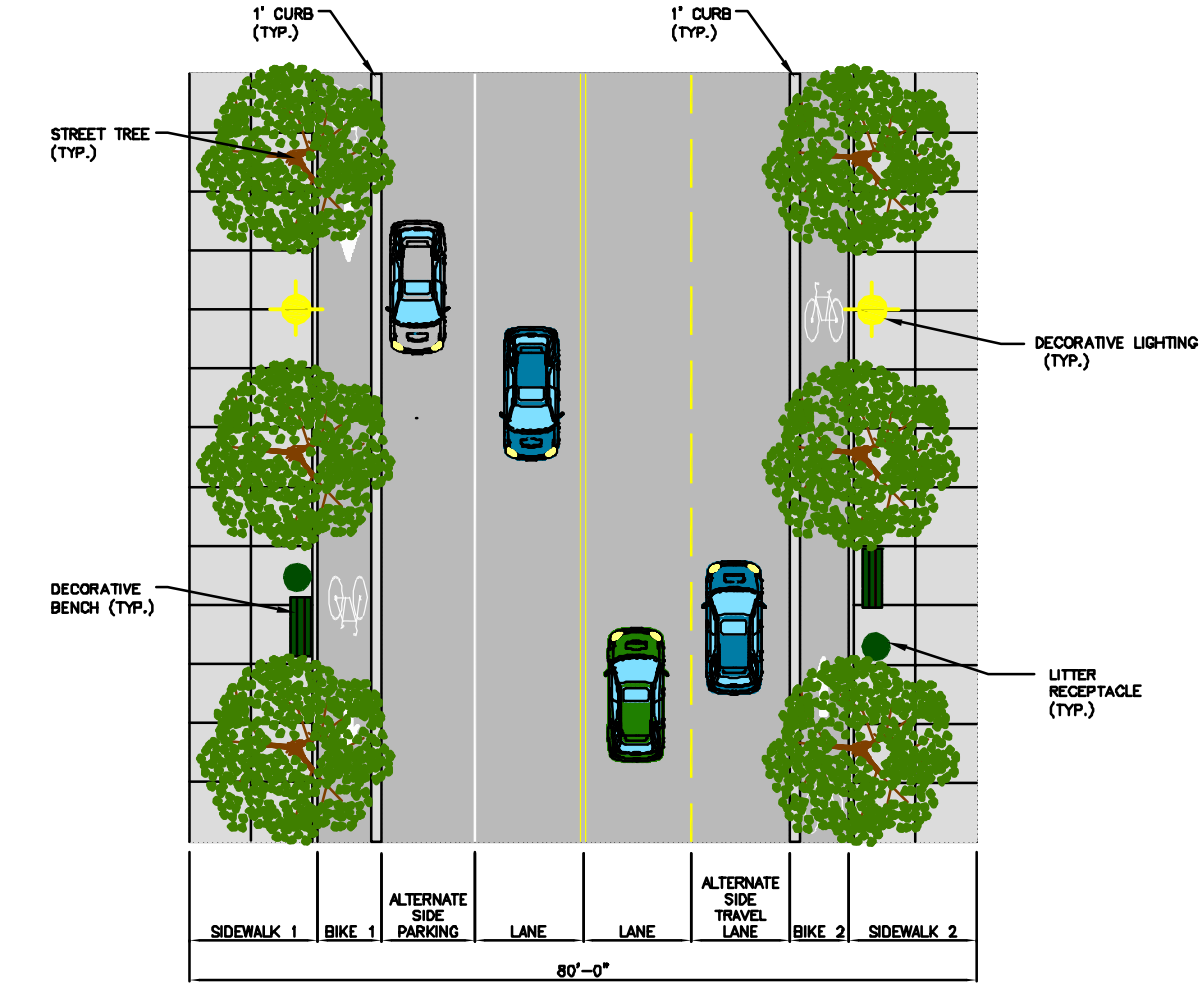


FIGURE 4.6-5a
80' R.O.W
TWO-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	BIKE 1	ALTERNATE SIDE PARKING	LANE	LANE	ALTERNATE SIDE TRAVEL LANE	BIKE 2	SIDEWALK 2
MAJOR COLLECTOR	13'-0"	5'-0"*	10'-0"	11'-0"	11'-0"	10'-0"	5'-0"*	13'-0"
MINOR COLLECTOR	14'-0"	5'-0"*	10'-0"	10'-0"	10'-0"	10'-0"	5'-0"*	14'-0"

* = 1' CURB

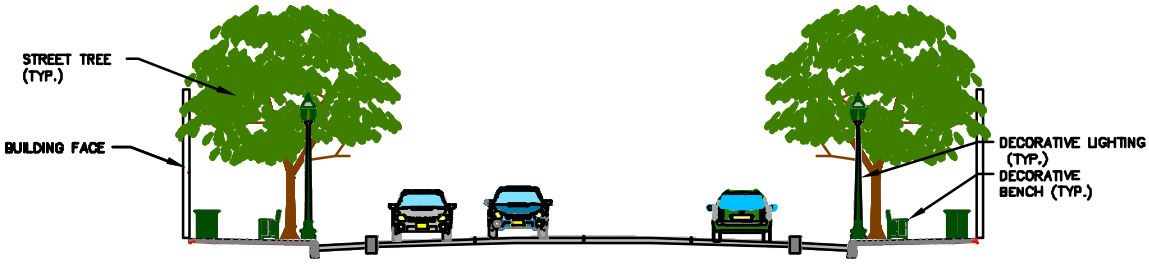
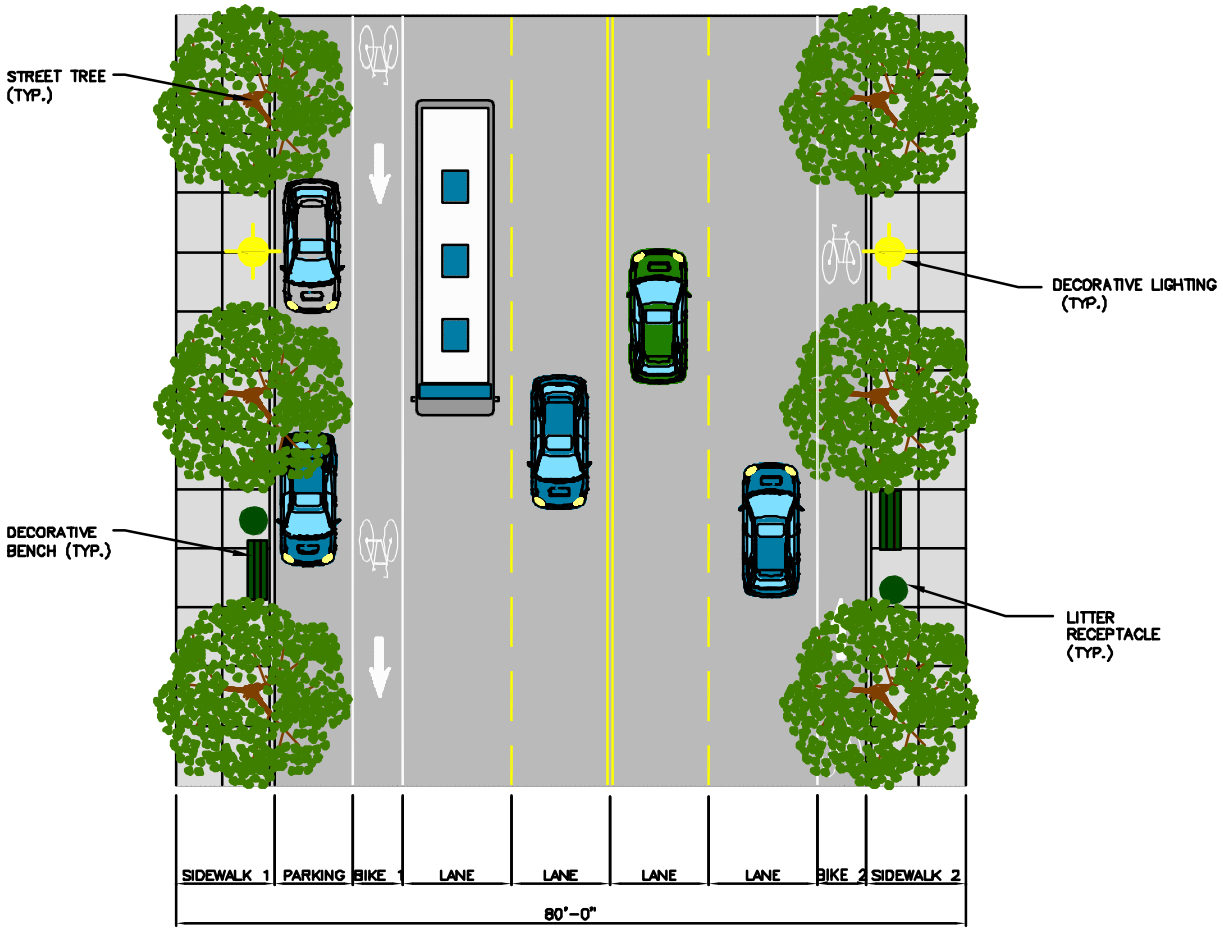


FIGURE 4.6-6
80' R.O.W
TWO-WAY STREET
TWO SIDED ALTERNATE SIDE PARKING
& CYCLE TRACK



	SIDEWALK 1	PARKING 1	BIKE 1	LANE	LANE	LANE	LANE	BIKE 2	SIDEWALK 2
MAJOR COLLECTOR	10'-0"	8'-0"	5'-0"	11'-0"	10'-0"	10'-0"	11'-0"	5'-0"	10'-0"
MINOR COLLECTOR	10'-6"	8'-0"	5'-0"	10'-0"	10'-0"	10'-0"	10'-0"	6'-0"	10'-6"
LOCAL RESIDENTIAL	11'-0"	8'-0"	5'-0"	10'-0"	10'-0"	10'-0"	10'-0"	5'-0"	11'-0"

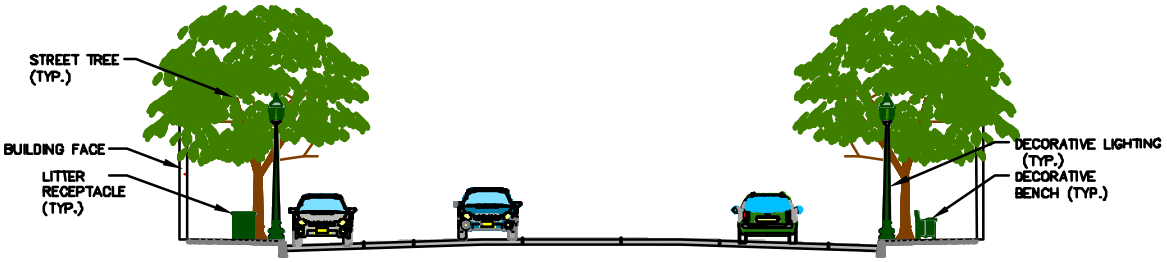
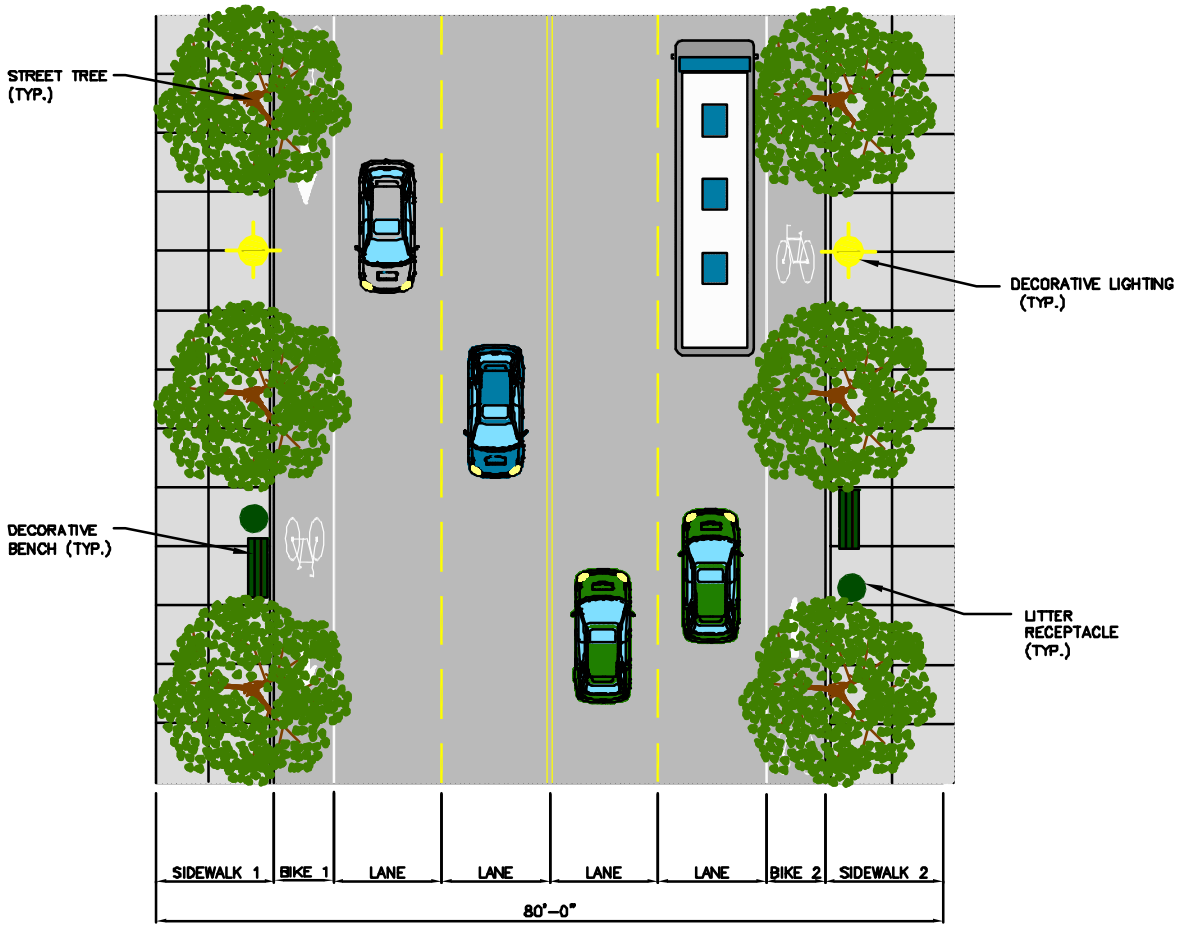


FIGURE 4.6-7
80' R.O.W
TWO-WAY STREET
ONE SIDED PARKING



	SIDEWALK 1	BIKE 1	LANE	LANE	LANE	LANE	BIKE 2	SIDEWALK 2
MAJOR COLLECTOR	12'-0"	6'-0"	11'-0"	11'-0"	11'-0"	11'-0"	6'-0"	12'-0"
MINOR COLLECTOR	14'-0"	6'-0"	10'-0"	10'-0"	10'-0"	10'-0"	6'-0"	14'-0"

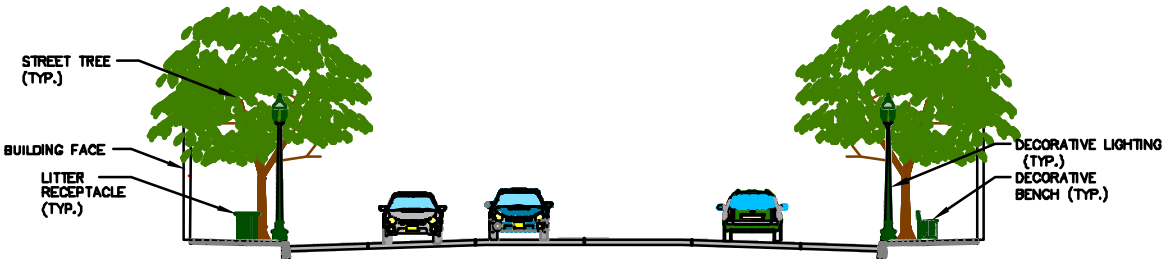
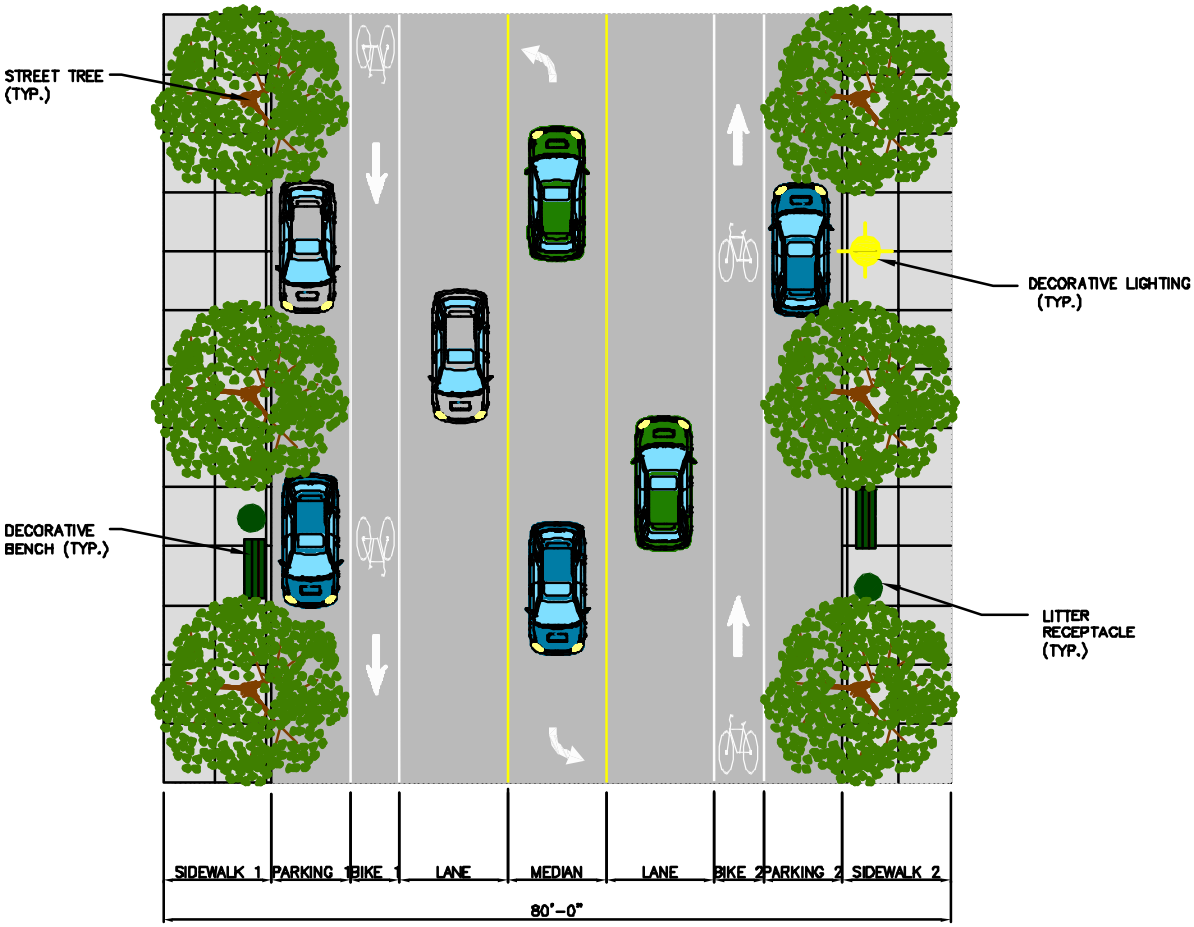


FIGURE 4.6-8
80' R.O.W
TWO-WAY STREET
NO PARKING



	SIDEWALK 1	PARKING 1	BIKE 1	LANE	LANE	LANE	BIKE 2	PARKING 2	SIDEWALK 2
MAJOR COLLECTOR	11'-0"	8'-0"	5'-0"	11'-0"	10'-0"	11'-0"	5'-0"	8'-0"	11'-0"
MINOR COLLECTOR	12'-0"	8'-0"	14'-0"*		12'-0"	14'-0"*		8'-0"	12'-0"
LOCAL RESIDENTIAL	12'-0"	8'-0"	5'-0"	10'-0"	10'-0"	10'-0"	5'-0"	8'-0"	12'-0"

* SHARED THROUGH/BIKE LANE

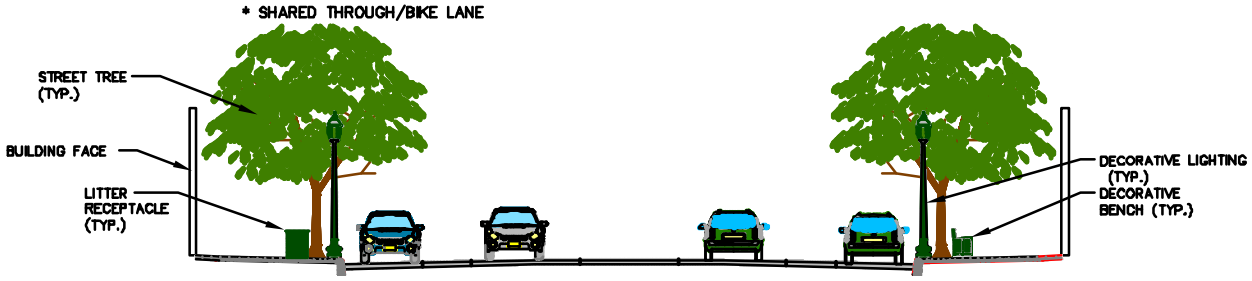
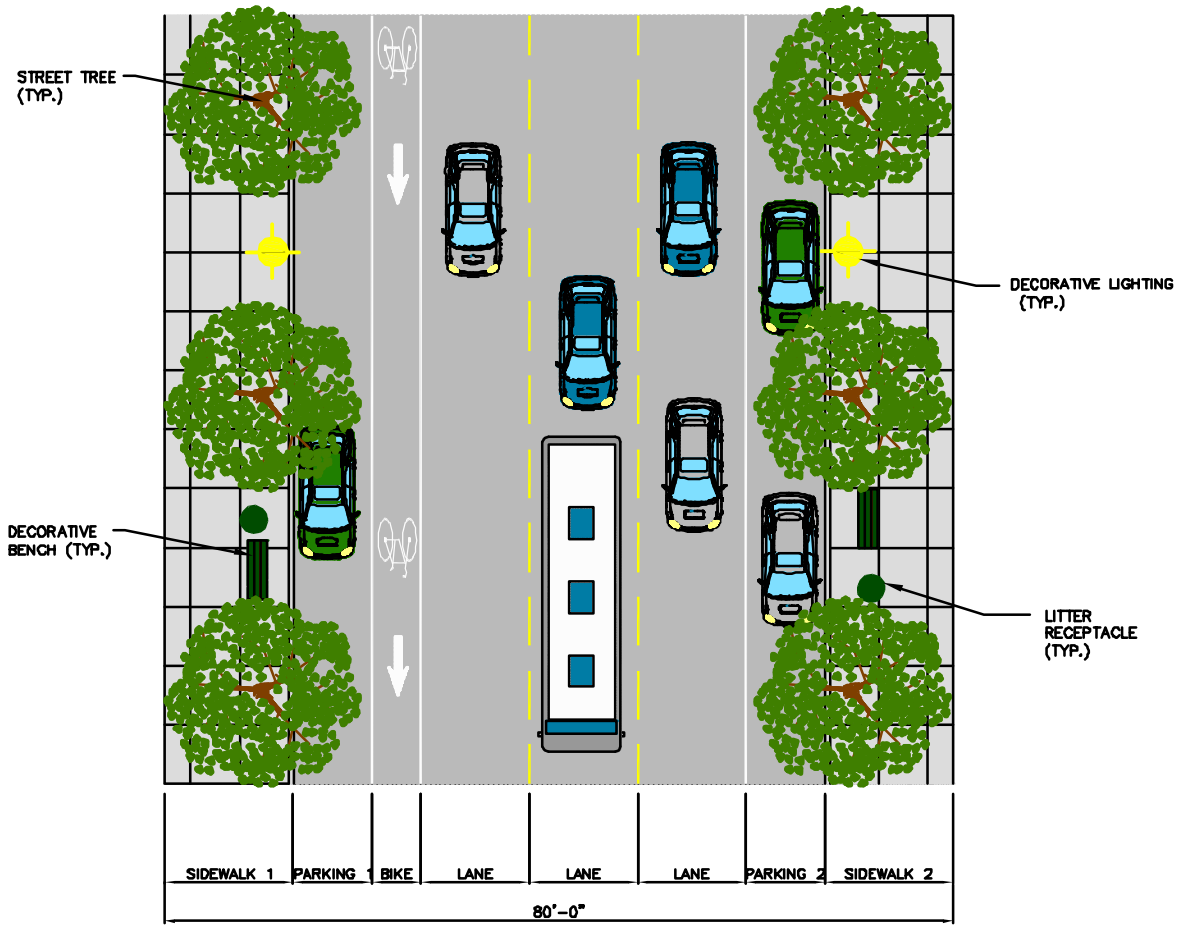


FIGURE 4.6-9
80' R.O.W
BOULEVARD OR CENTER TURN LANE



	SIDEWALK 1	PARKING 1	BIKE	LANE	LANE	LANE	PARKING 2	SIDEWALK 2
MAJOR COLLECTOR	13'-0"	8'-0"	5'-0"	11'-0"	11'-0"	11'-0"	8'-0"	13'-0"
MINOR COLLECTOR	13'-0"	8'-0"	8'-0"	10'-0"	10'-0"	10'-0"	8'-0"	13'-0"
LOCAL RESIDENTIAL	SEE NEXT SHEET FOR TYPICAL ONE-WAY STREET, ONE SIDE PARKING PLAN & SECTION.							

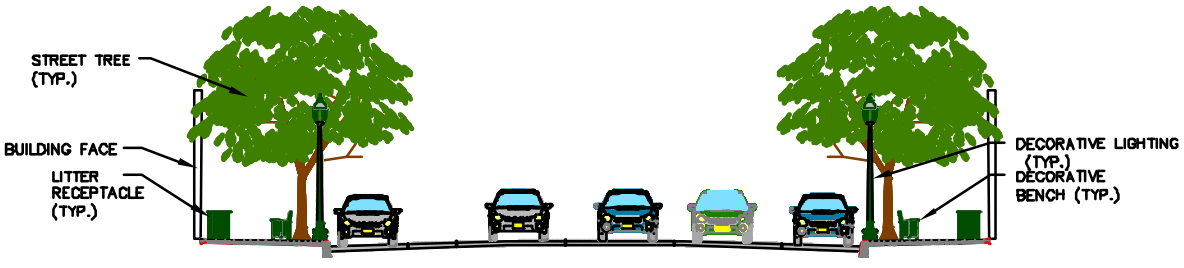
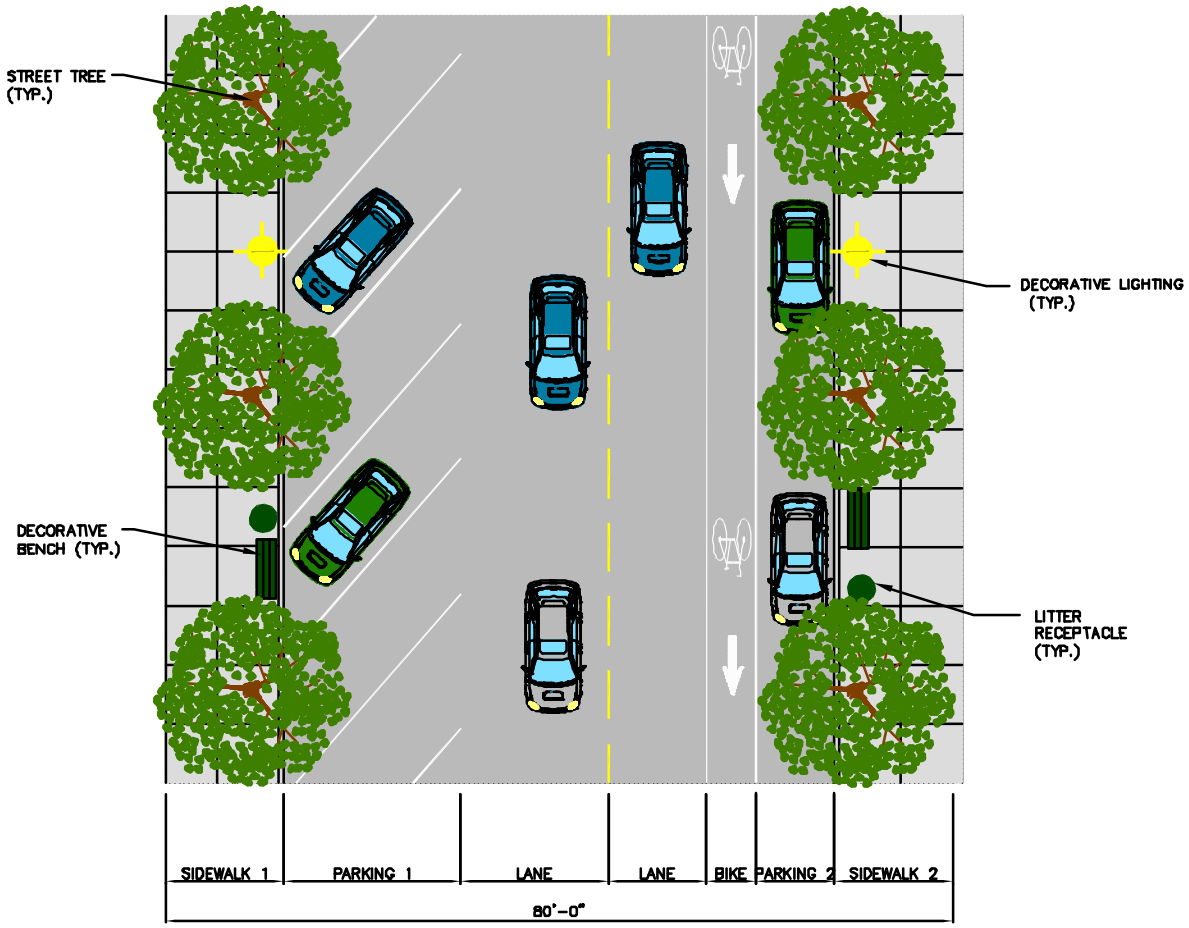


FIGURE 4.6-10
80' R.O.W
ONE-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	PARKING 1	LANE	LANE	BIKE	PARKING 2	SIDEWALK 2
LOCAL RESIDENTIAL	12'-0"	18'-0"	15'-0"	10'-0"	5'-0"	8'-0"	12'-0"

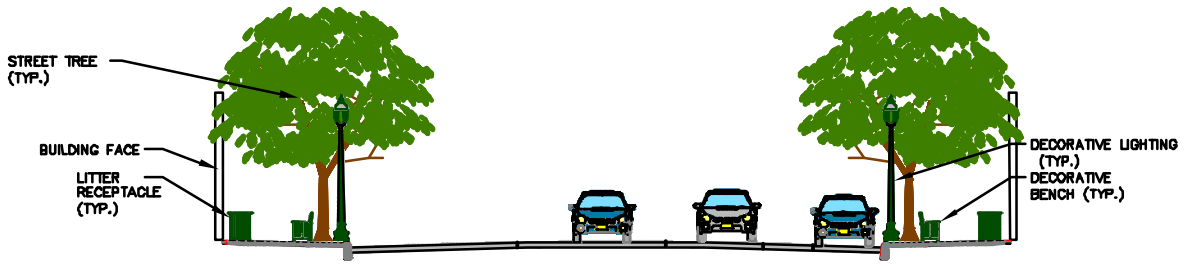
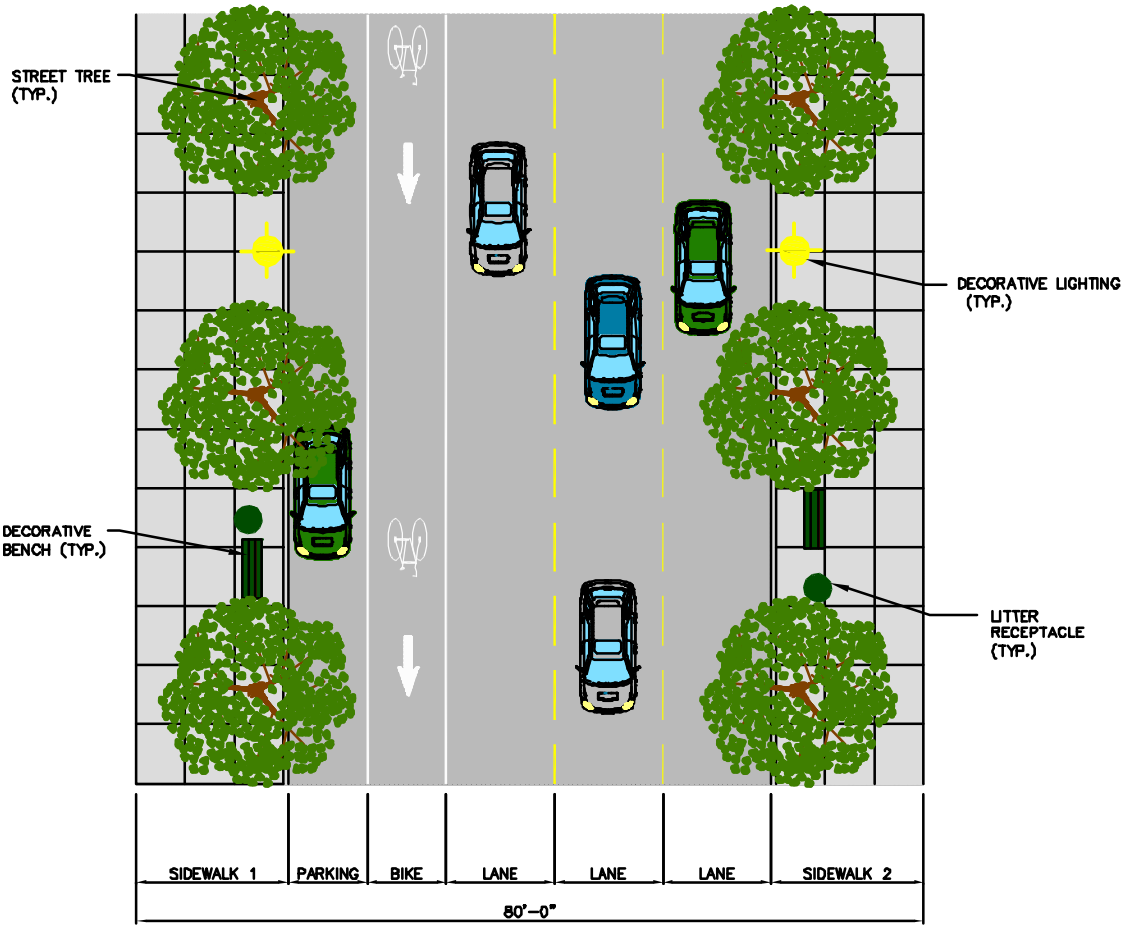


FIGURE 4.6-10a
80' R.O.W
ONE-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	PARKING	BIKE	LANE	LANE	LANE	SIDEWALK 2
MAJOR COLLECTOR	15'-6"	8'-0"	8'-0"	11'-0"	11'-0"	11'-0"	15'-6"
MINOR COLLECTOR	17'-0"	8'-0"	8'-0"	10'-0"	10'-0"	10'-0"	17'-0"
LOCAL RESIDENTIAL	SEE NEXT SHEET FOR TYPICAL ONE-WAY STREET, ONE SIDE PARKING PLAN & SECTION.						

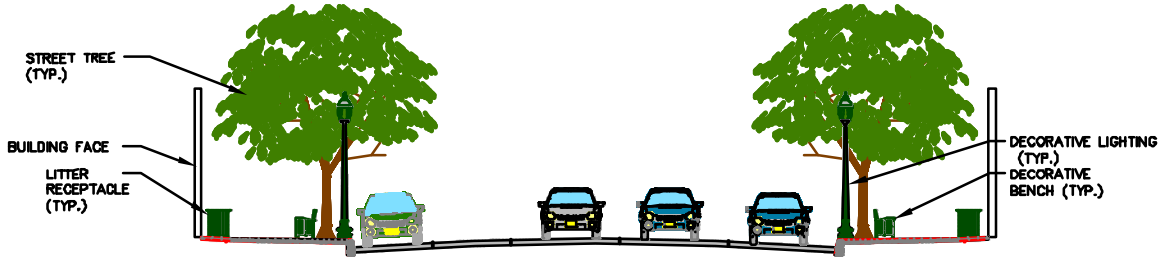
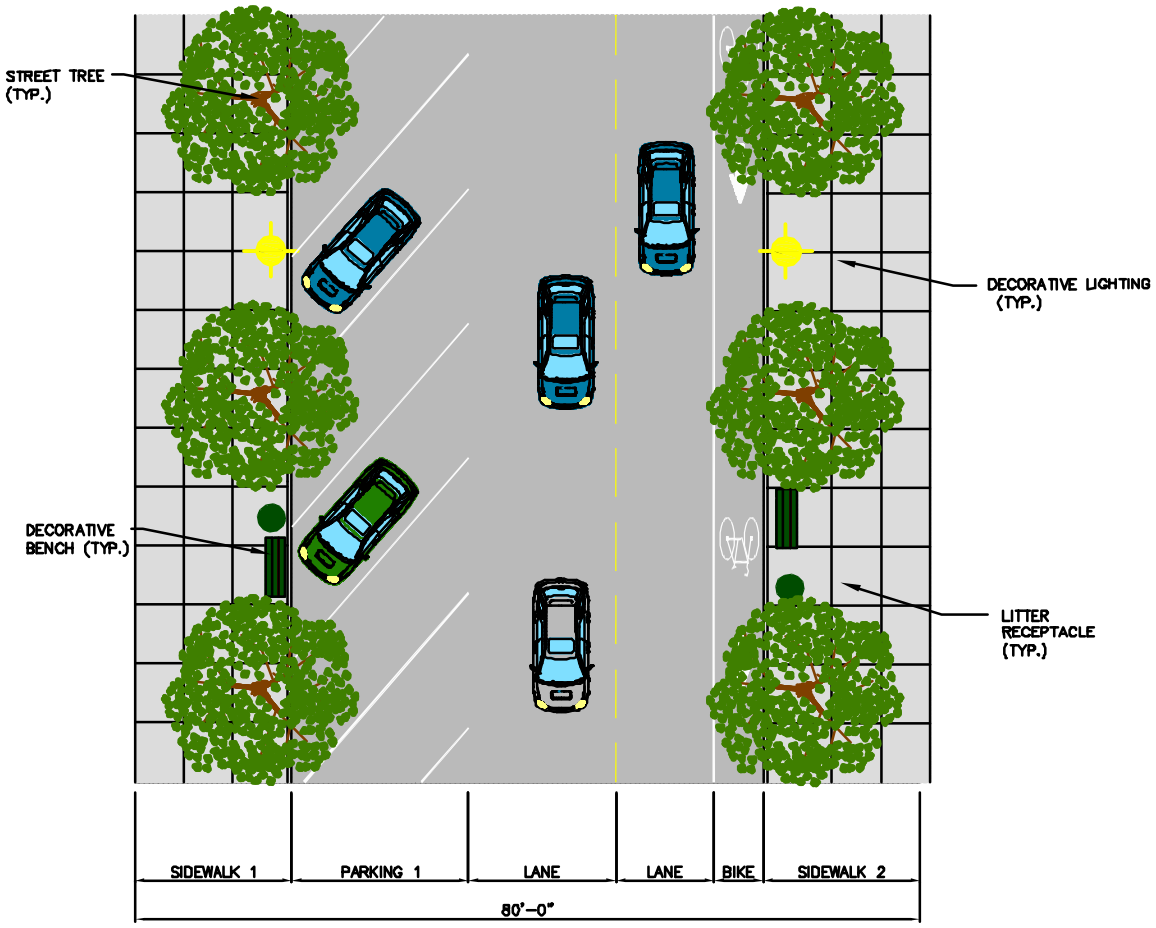


FIGURE 4.6-11
80' R.O.W
ONE-WAY STREET
ONE SIDED PARKING



	SIDEWALK 1	PARKING 1	LANE	LANE	BIKE	SIDEWALK 2
LOCAL RESIDENTIAL	16'-0"	18'-0"	15'-0"	10'-0"	5'-0"	16'-0"

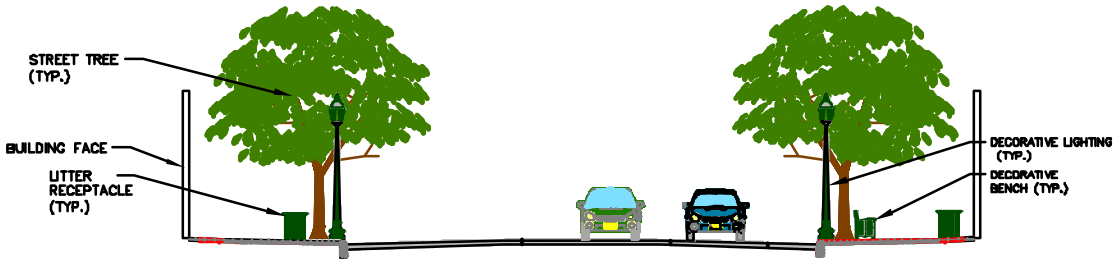
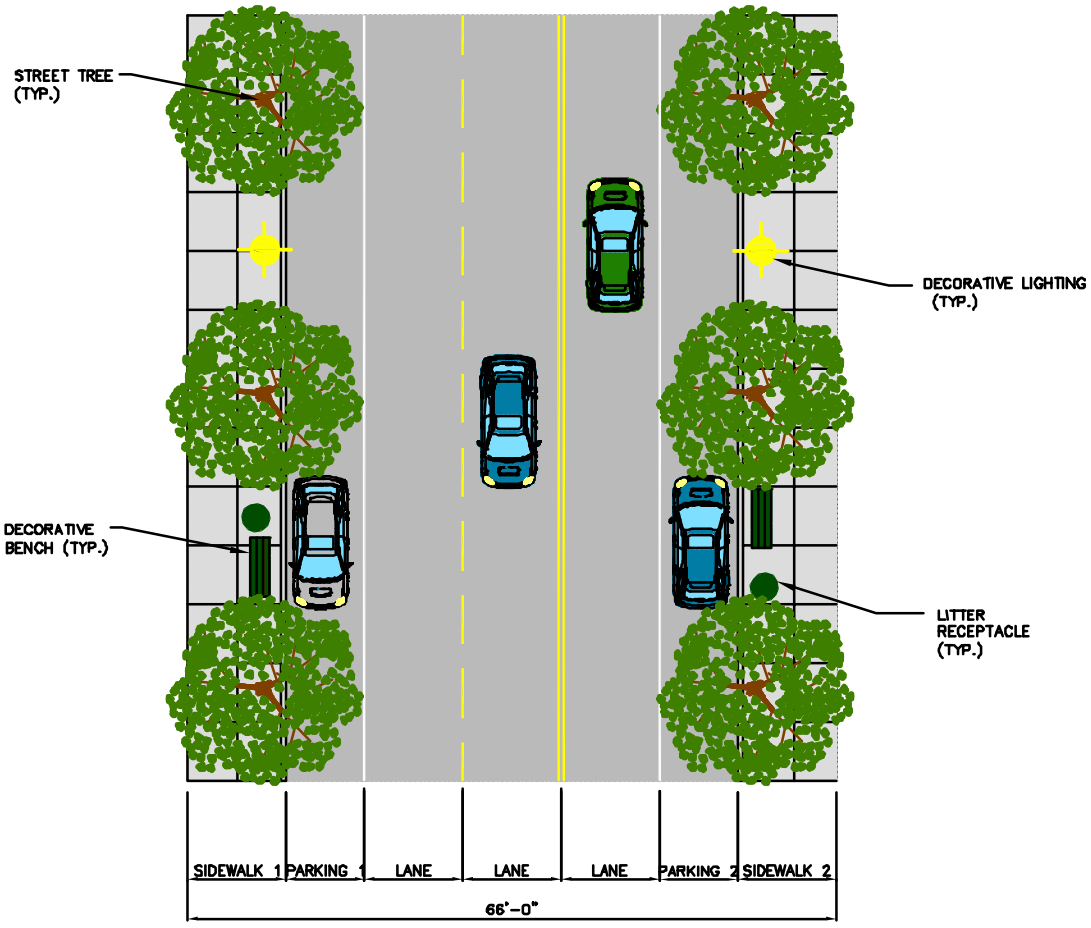


FIGURE 4.6-11a
80' R.O.W
ONE-WAY STREET
ONE SIDED PARKING



	SIDEWALK 1	PARKING 1	LANE	LANE	LANE	PARKING 2	SIDEWALK 2
MAJOR COLLECTOR	10'-0"	8'-0"	10'-0"	10'-0"	10'-0"	8'-0"	10'-0"
MINOR COLLECTOR	SEE NEXT SHEET FOR TYPICAL TWO-WAY STREET, ONE SIDE PARKING PLAN & SECTION.						
LOCAL RESIDENTIAL	SEE NEXT SHEET FOR TYPICAL TWO-WAY STREET, ONE SIDE PARKING PLAN & SECTION.						

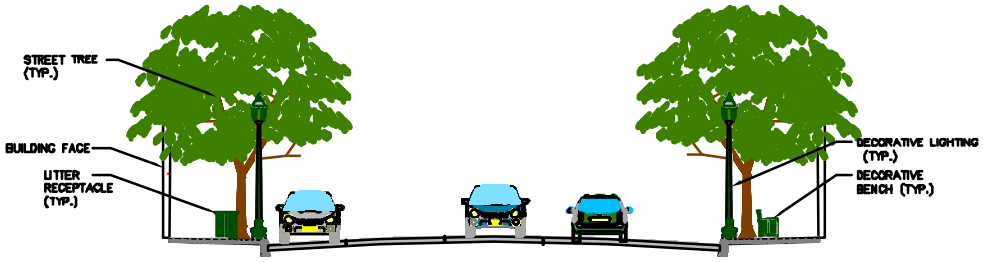
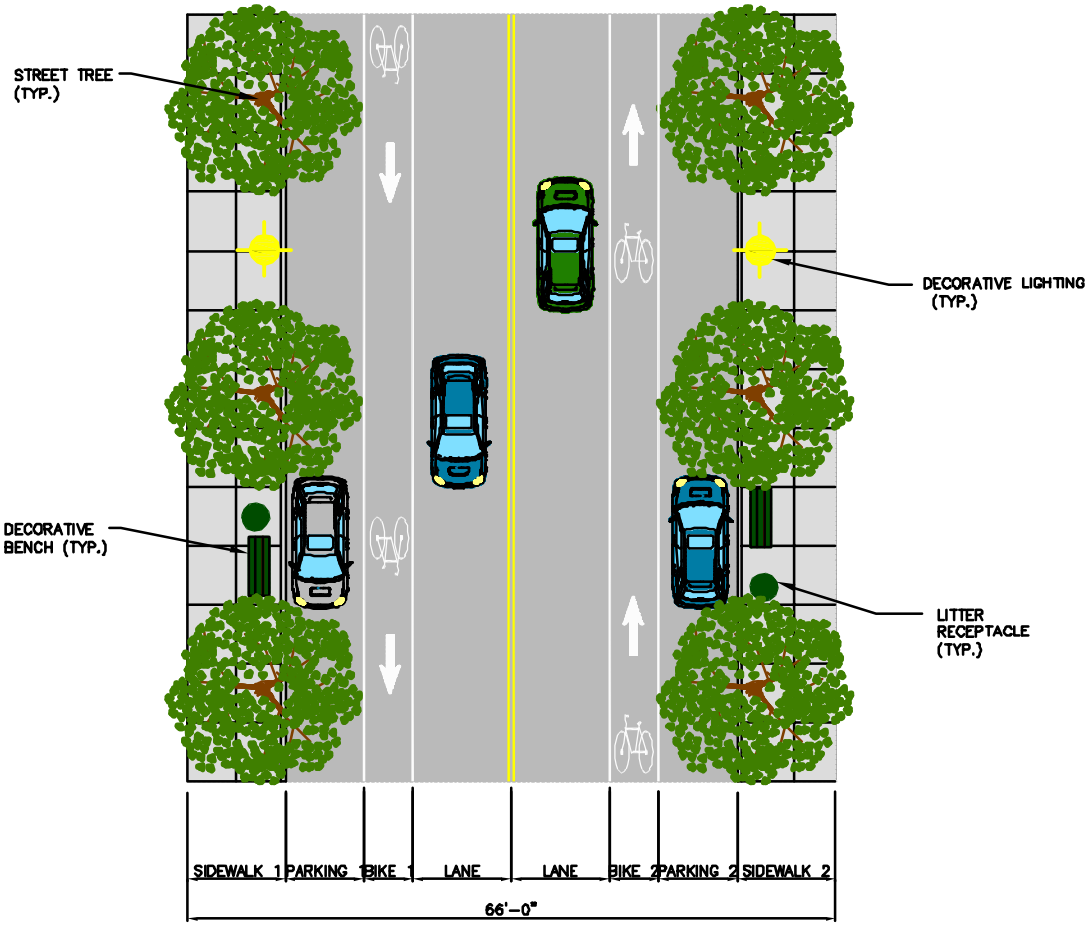


FIGURE 4.6-12
66' ROW
TWO-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	PARKING 1	BIKE 1	LANE	LANE	BIKE 2	PARKING 2	SIDEWALK 2
MINOR COLLECTOR	10'-0"	8'-0"	5'-0"	10'-0"	10'-0"	5'-0"	8'-0"	10'-0"
LOCAL RESIDENTIAL	10'-0"	8'-0"	5'-0"	10'-0"	10'-0"	5'-0"	8'-0"	10'-0"

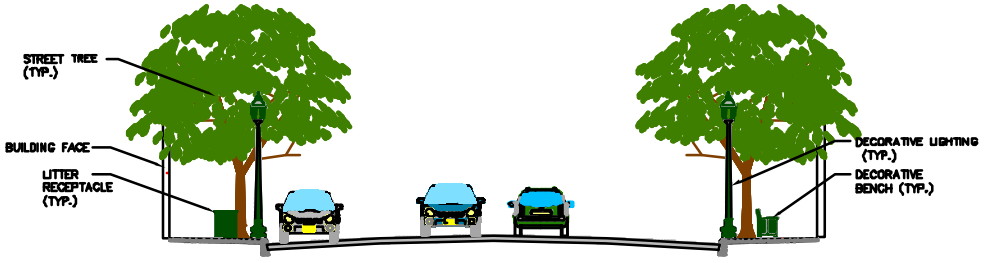
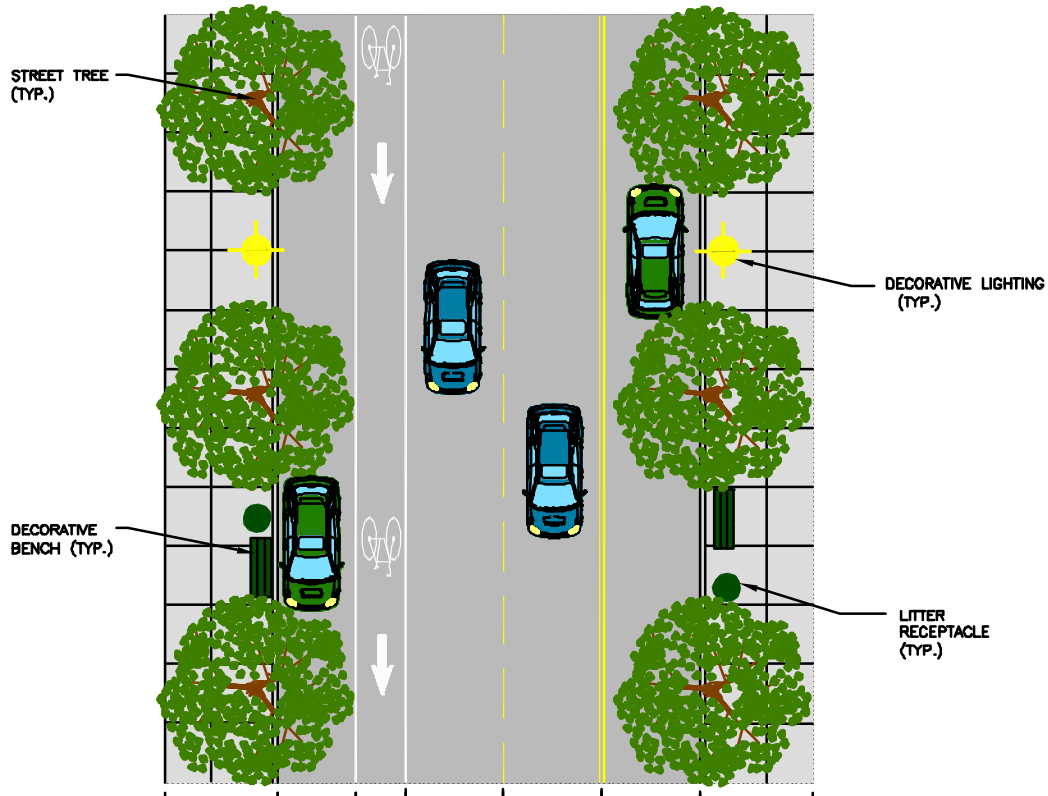


FIGURE 4.6-12a
66' ROW
TWO-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	PARKING	BIKE	LANE	LANE	LANE	SIDEWALK 2
MAJOR COLLECTOR	11'-6"	8'-0"	5'-0"	10'-0"	10'-0"	10'-0"	11'-6"
MINOR COLLECTOR	SEE NEXT SHEET FOR TYPICAL TWO-WAY STREET, ONE SIDE PARKING PLAN & SECTION.						
LOCAL RESIDENTIAL	SEE NEXT SHEET FOR TYPICAL TWO-WAY STREET, ONE SIDE PARKING PLAN & SECTION.						

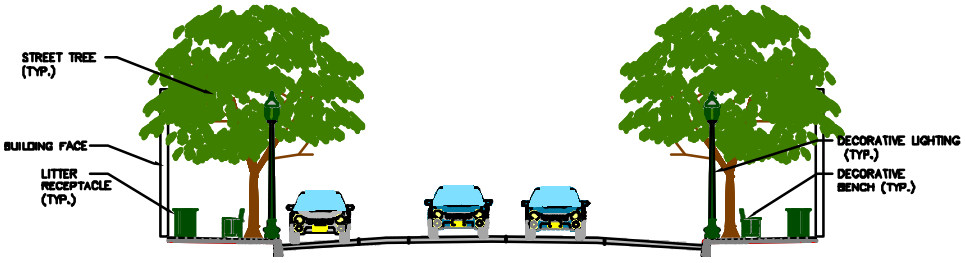
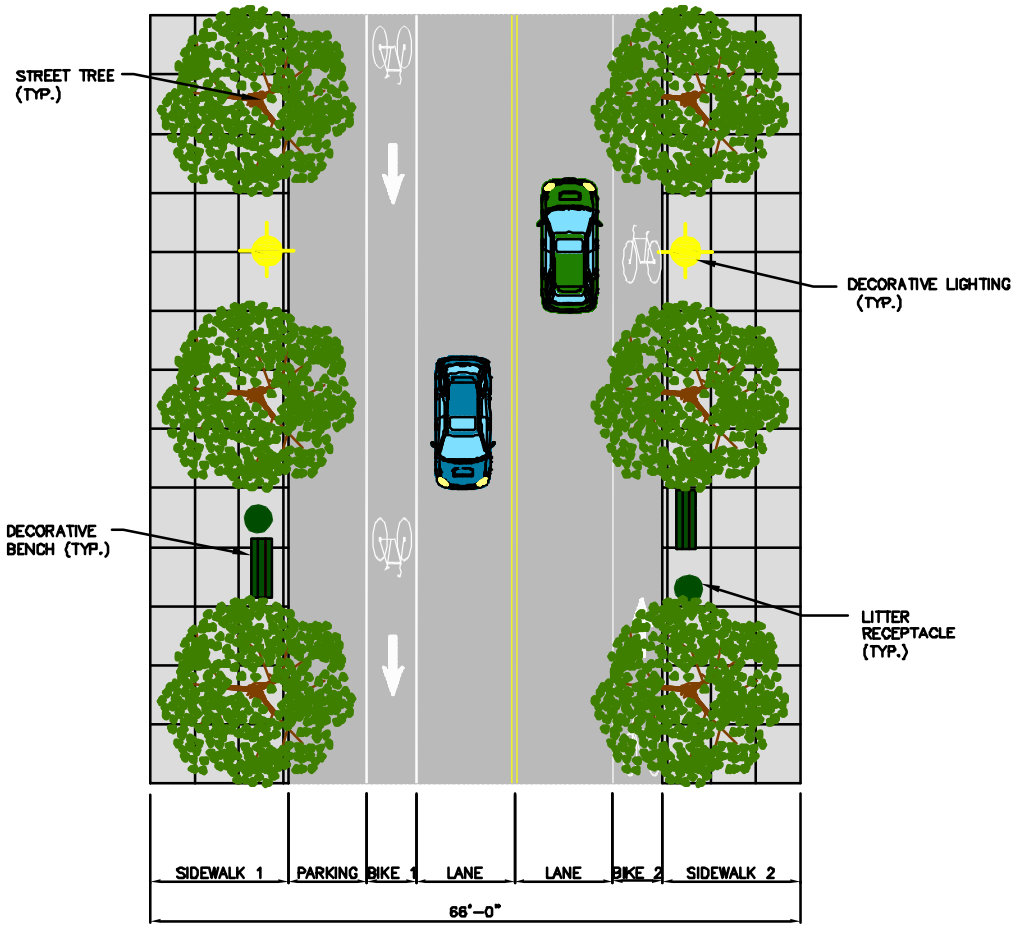


FIGURE 4.6-13
66' ROW
TWO-WAY STREET
ONE SIDED PARKING



	SIDEWALK 1	PARKING	BIKE 1	LANE	LANE	BIKE 2	SIDEWALK 2
MINOR COLLECTOR	14'-0"	8'-0"	5'-0"	10'-0"	10'-0"	5'-0"	14'-0"
LOCAL RESIDENTIAL	12'-6"	8'-0"	6'-0"	10'-0"	10'-0"	7'-0"	12'-6"

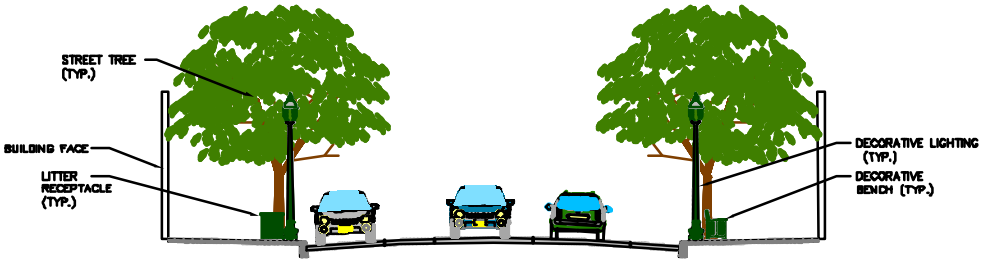
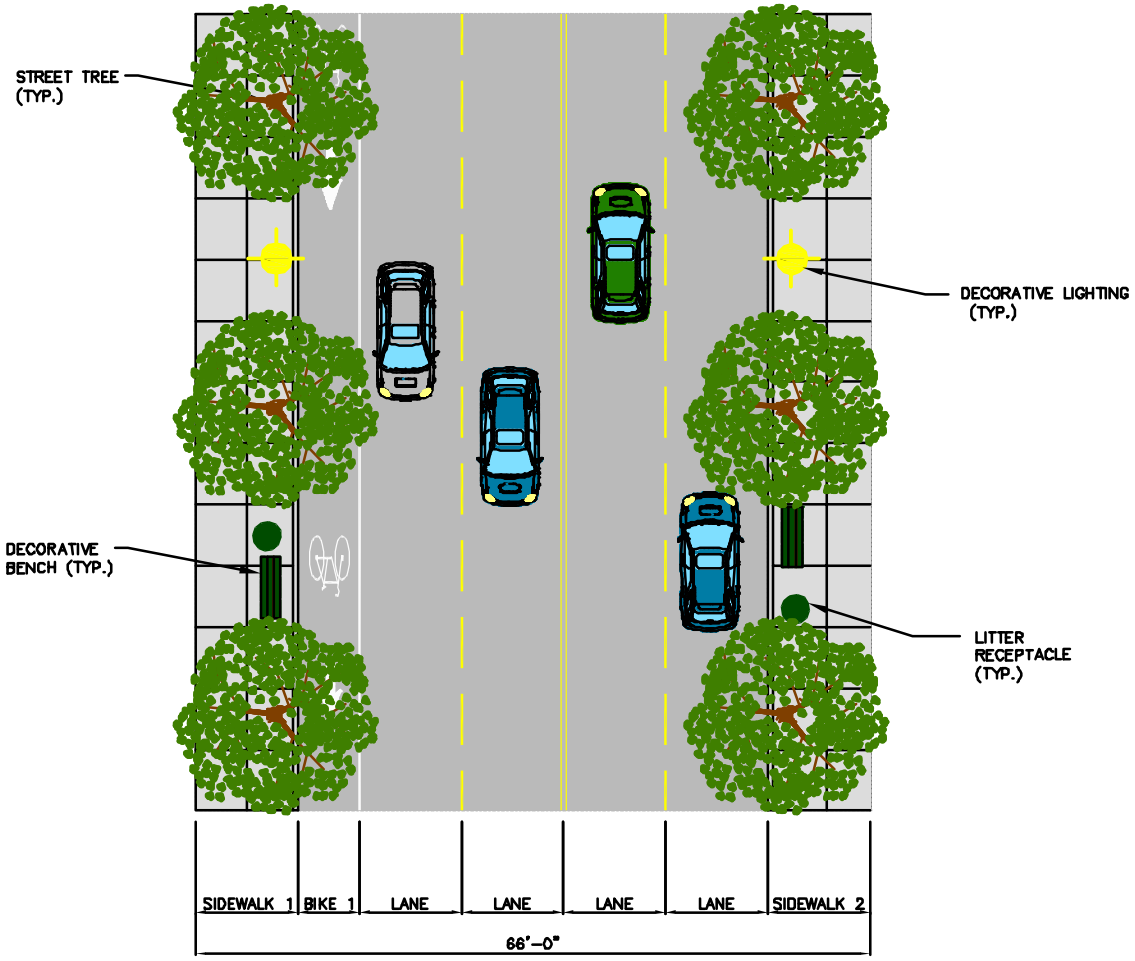


FIGURE 4.6-13a
66' ROW
TWO-WAY STREET
ONE SIDED PARKING



	SIDEWALK 1	BIKE 1	LANE	LANE	LANE	LANE	SIDEWALK 2
MAJOR COLLECTOR	10'-0"	6'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"
MINOR COLLECTOR	SEE NEXT SHEET FOR TYPICAL TWO-WAY STREET, NO PARKING PLAN & SECTION.						

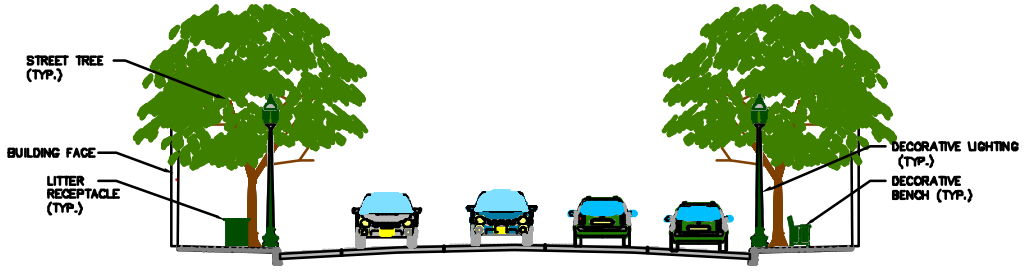
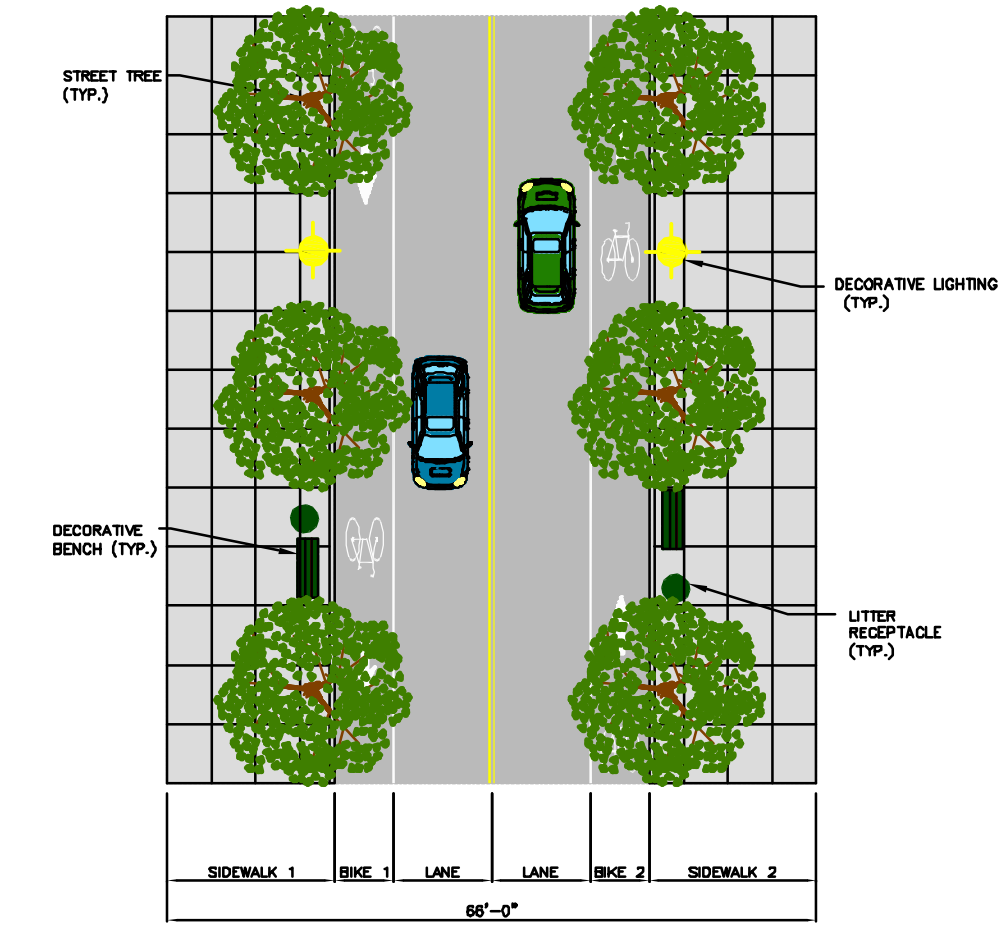


FIGURE 4.6-14
66' ROW
TWO-WAY STREET
NO PARKING



	SIDEWALK 1	BIKE 1	LANE	LANE	BIKE 2	SIDEWALK 2
MINOR COLLECTOR	17'-0"	6'-0"	10'-0"	10'-0"	6'-0"	17'-0"

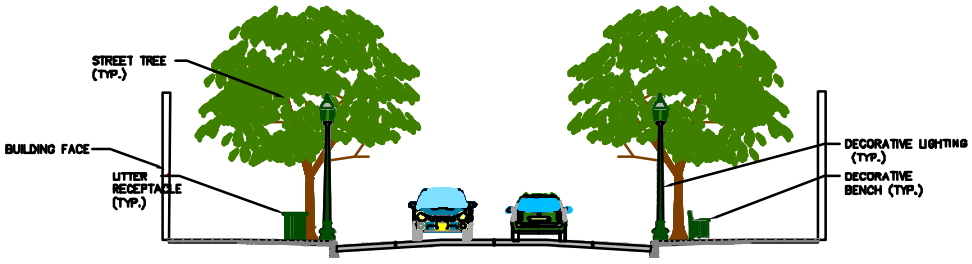
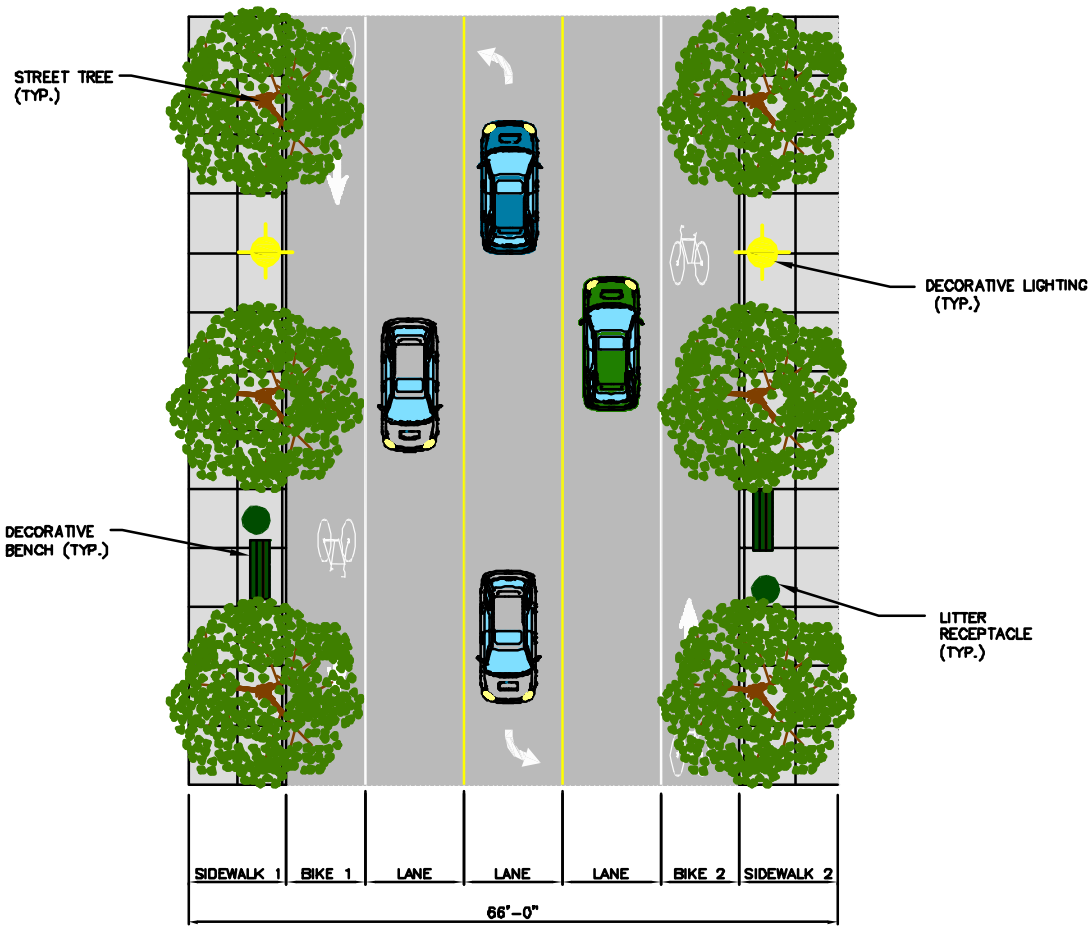


FIGURE 4.6-14a
66' ROW
TWO-WAY STREET
NO PARKING



	SIDEWALK 1	BIKE 1	LANE	LANE	LANE	BIKE 2	SIDEWALK 2
MAJOR COLLECTOR	10'-0"	8'-0"	10'-0"	10'-0"	10'-0"	8'-0"	10'-0"
MINOR COLLECTOR	SEE NEXT SHEET FOR TYPICAL BOULEVARD OR CENTER TURN LANE PLAN & SECTION.						
LOCAL RESIDENTIAL	SEE NEXT SHEET FOR TYPICAL BOULEVARD OR CENTER TURN LANE PLAN & SECTION.						

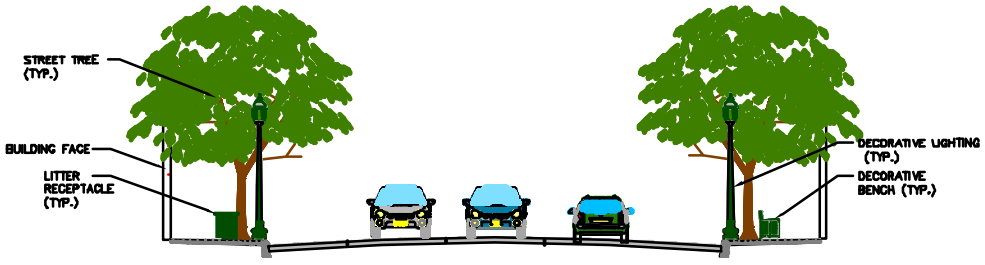
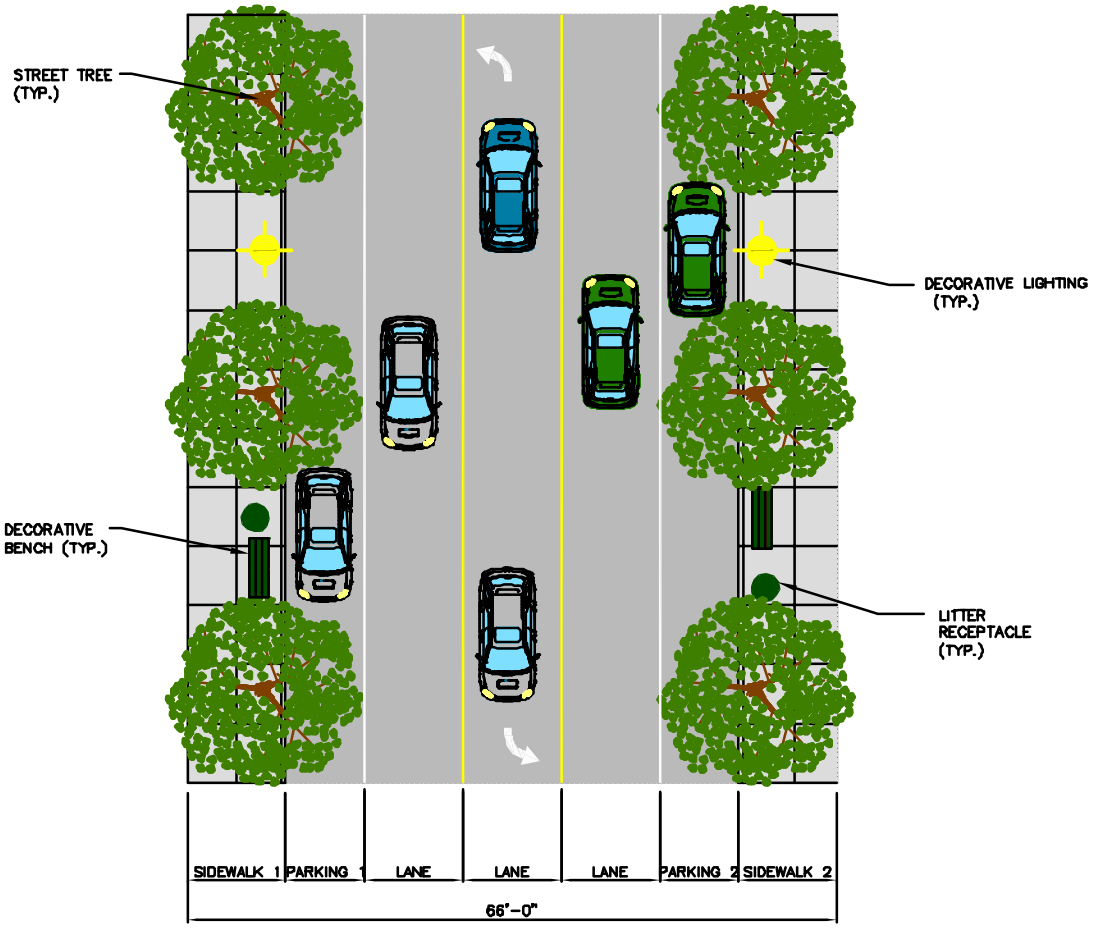


FIGURE 4.6-15
66' ROW
BOULEVARD OR CENTER TURN LANE



	SIDEWALK 1	PARKING 1	LANE	LANE	LANE	PARKING 2	SIDEWALK 2
MINOR COLLECTOR	10'-0"	8'-0"	10'-0"	10'-0"	10'-0"	8'-0"	10'-0"
LOCAL RESIDENTIAL	10'-0"	8'-0"	10'-0"	10'-0"	10'-0"	8'-0"	10'-0"

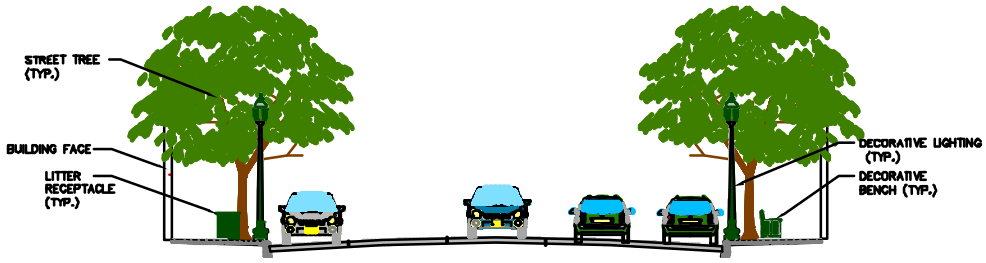
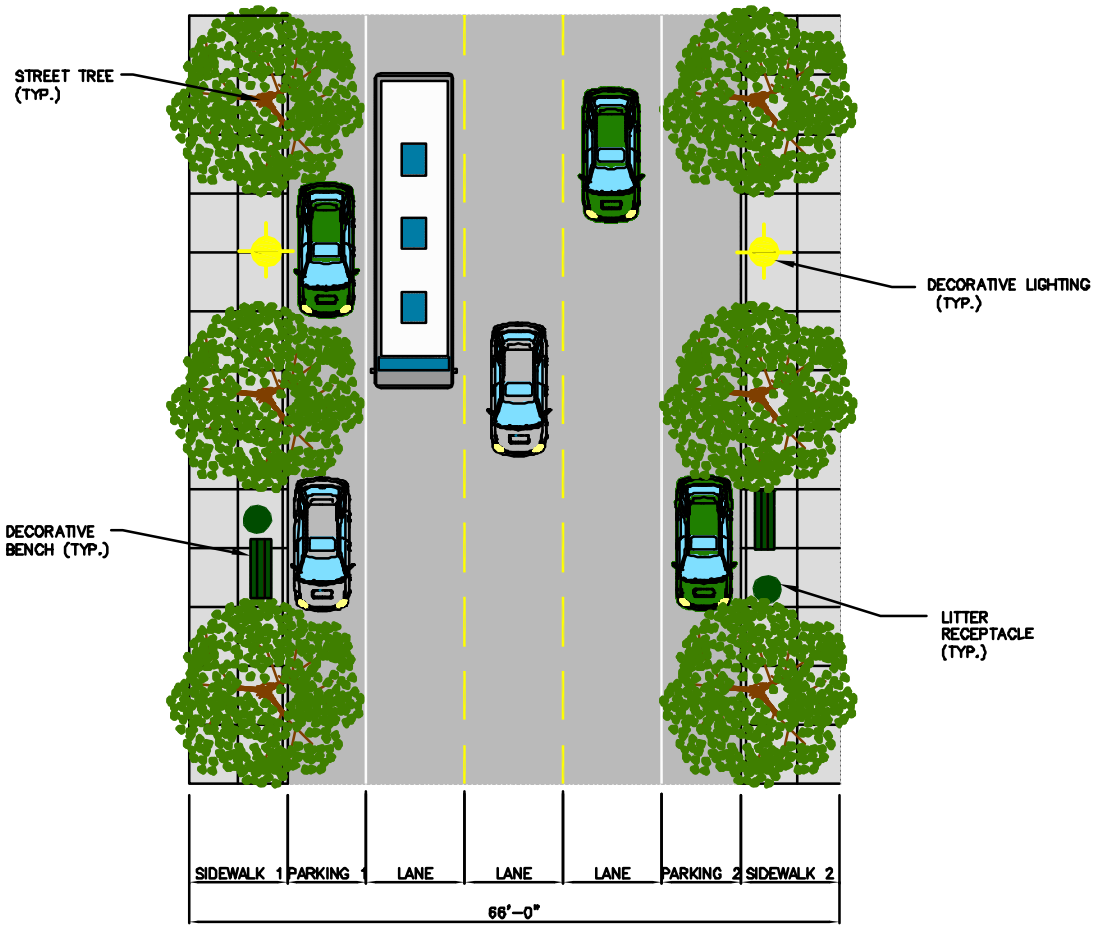


FIGURE 4.6-15a
66' ROW
BOULEVARD OR CENTER TURN LANE



	SIDEWALK 1	PARKING 1	LANE	LANE	LANE	PARKING 2	SIDEWALK 2
MAJOR COLLECTOR	10'-0"	8'-0"	10'-0"	10'-0"	10'-0"	8'-0"	10'-0"
MINOR COLLECTOR	SEE NEXT SHEET FOR TYPICAL ONE-WAY STREET, TWO SIDE PARKING PLAN & SECTION.						
LOCAL RESIDENTIAL	SEE NEXT SHEET FOR TYPICAL ONE-WAY STREET, TWO SIDE PARKING PLAN & SECTION.						

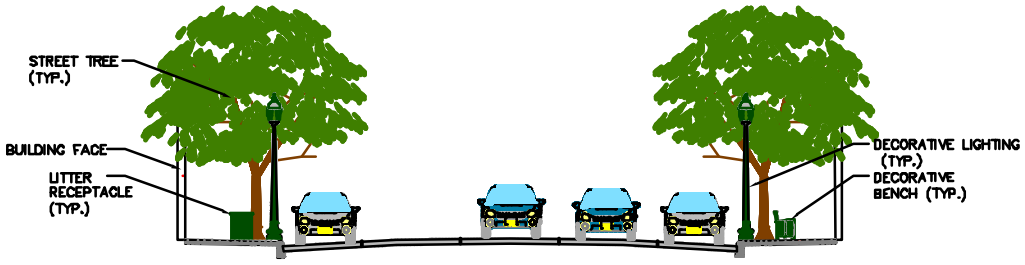
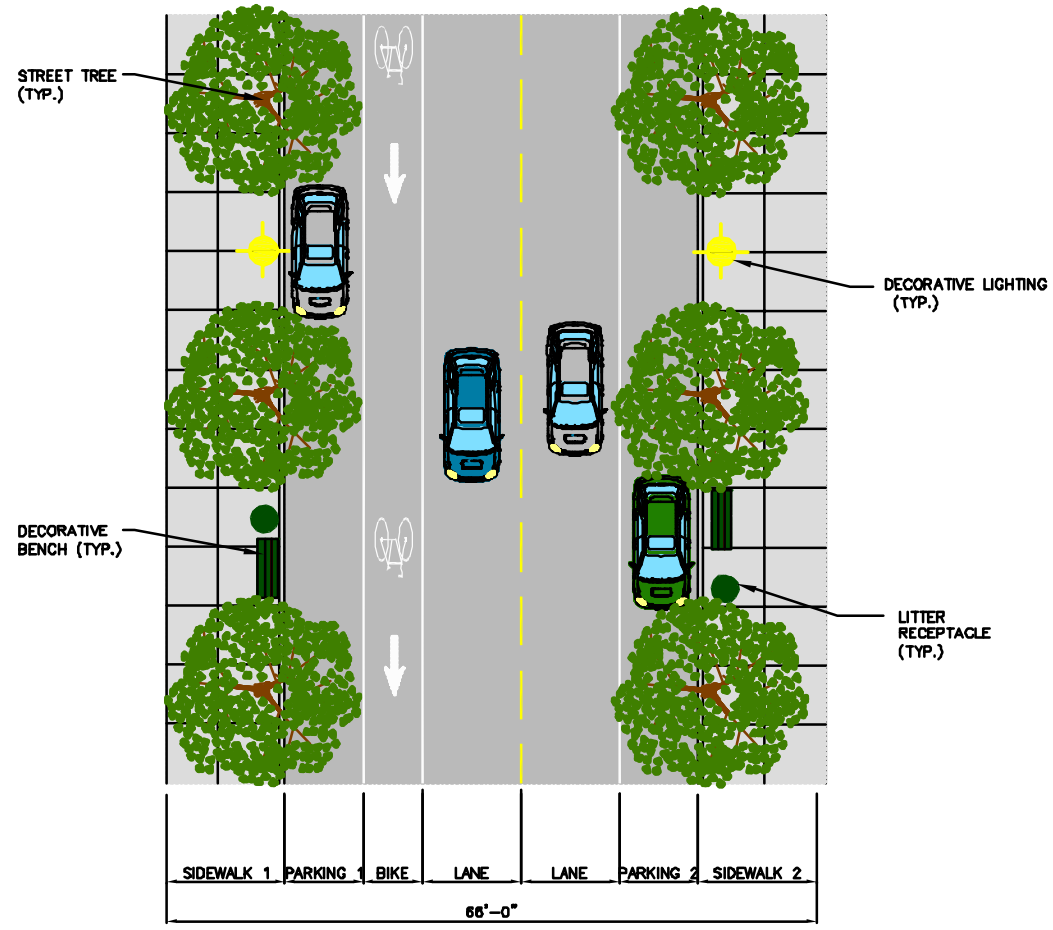


FIGURE 4.6-16
66' ROW
ONE-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	PARKING 1	BIKE	LANE	LANE	PARKING 2	SIDEWALK 2
MINOR COLLECTOR	12'-0"	8'-0"	6'-0"	10'-0"	10'-0"	8'-0"	12'-0"
LOCAL RESIDENTIAL	12'-6"	8'-0"	5'-0"	10'-0"	10'-0"	8'-0"	12'-6"

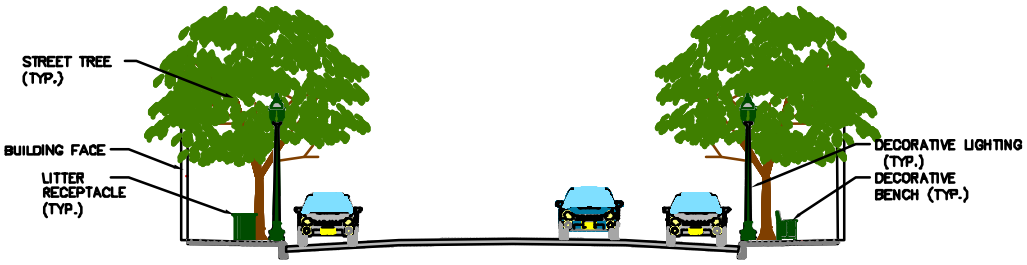
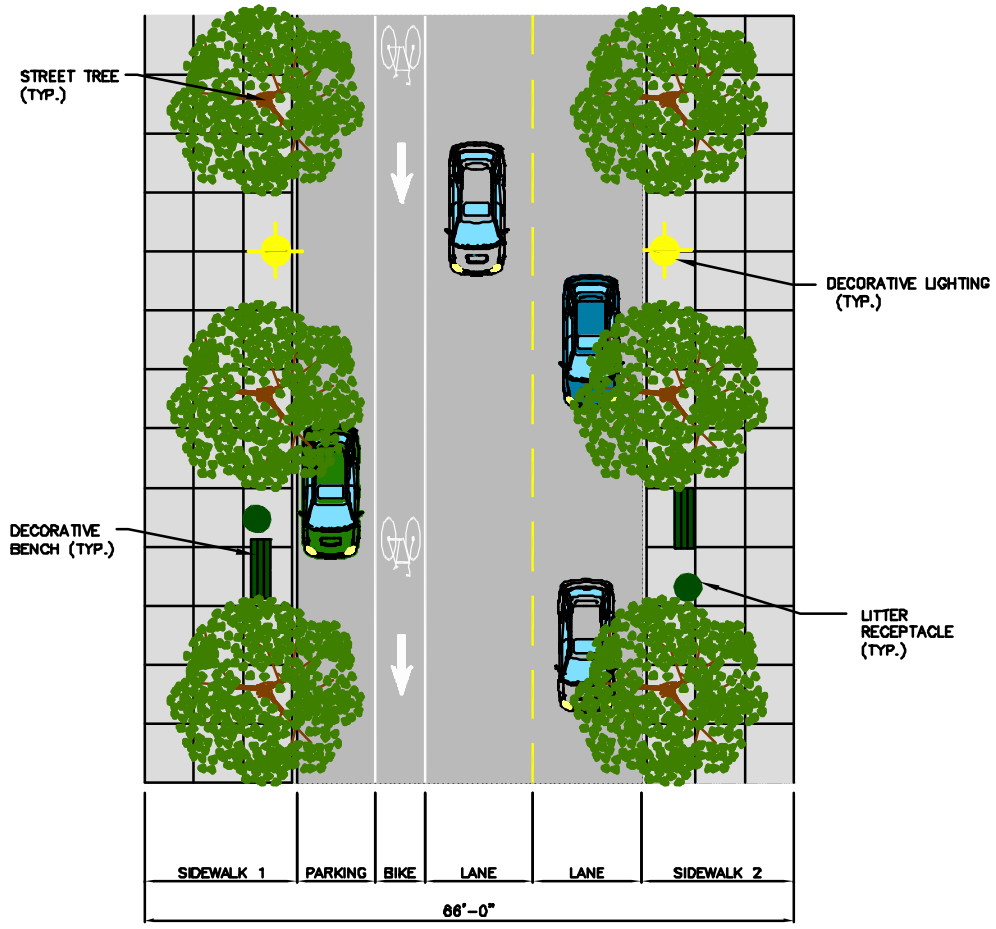


FIGURE 4.6-16a
ONE-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	PARKING	BIKE	LANE	LANE	SIDEWALK 2
MAJOR COLLECTOR	15'-6"	8'-0"	5'-0"	11'-0"	11'-0"	15'-6"
MINOR COLLECTOR	15'-0"	8'-0"	8'-0"	10'-0"	10'-0"	15'-0"
LOCAL RESIDENTIAL	16'-6"	8'-0"	5'-0"	10'-0"	10'-0"	16'-6"

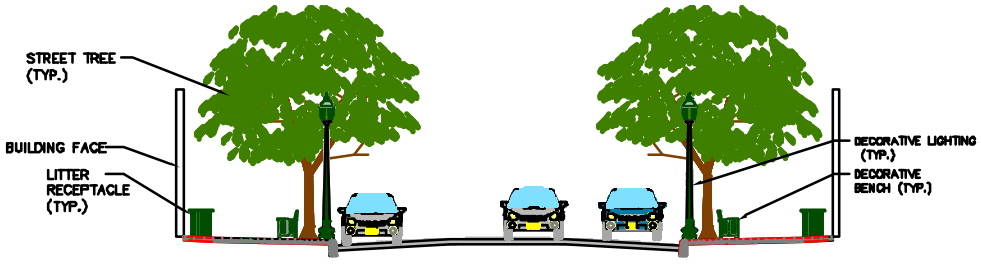
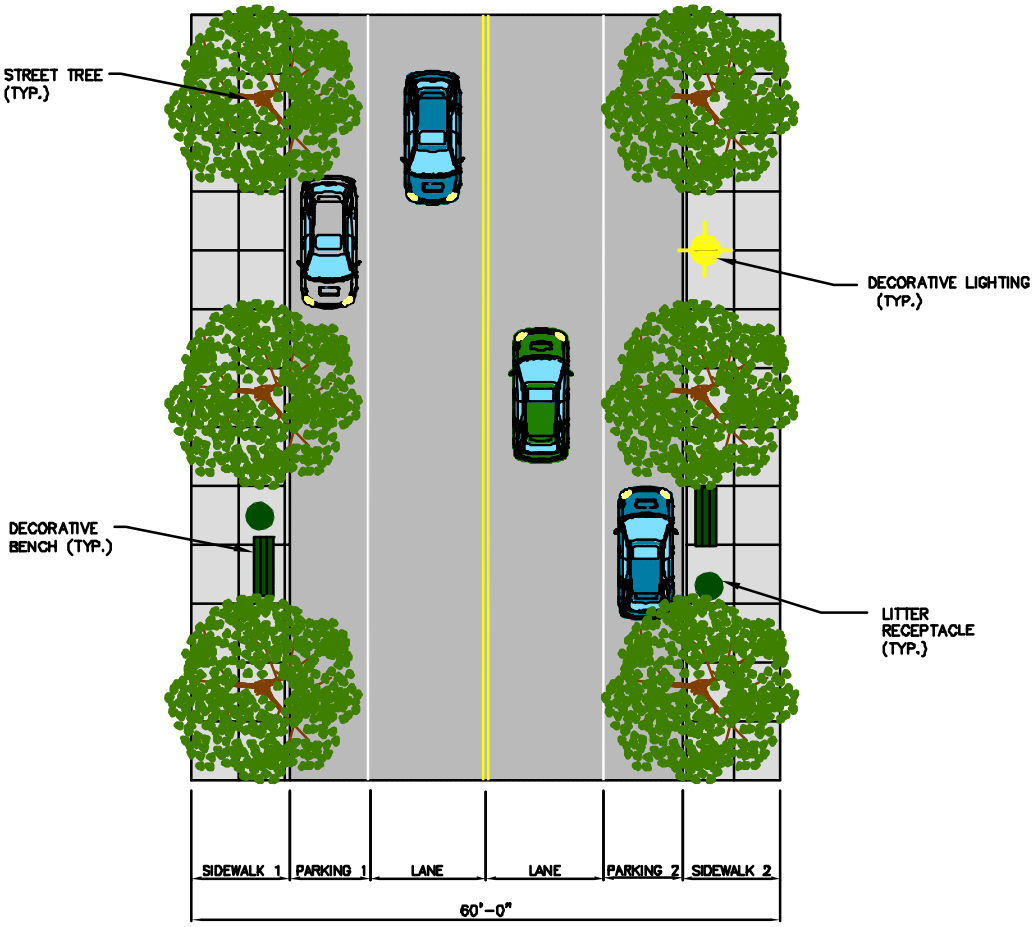


FIGURE 4.6-17
66' ROW
ONE-WAY STREET
ONE SIDED PARKING



	SIDEWALK 1	PARKING 1	LANE	LANE	PARKING 2	SIDEWALK 2
MAJOR COLLECTOR	10'-0"	8'-0"	12'-0"	12'-0"	8'-0"	10'-0"
MINOR COLLECTOR	12'-0"	8'-0"	10'-0"	10'-0"	8'-0"	12'-0"
LOCAL RESIDENTIAL	12'-0"	8'-0"	10'-0"	10'-0"	8'-0"	12'-0"

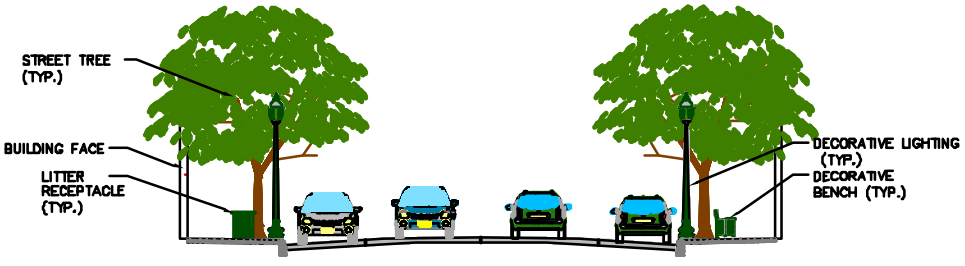
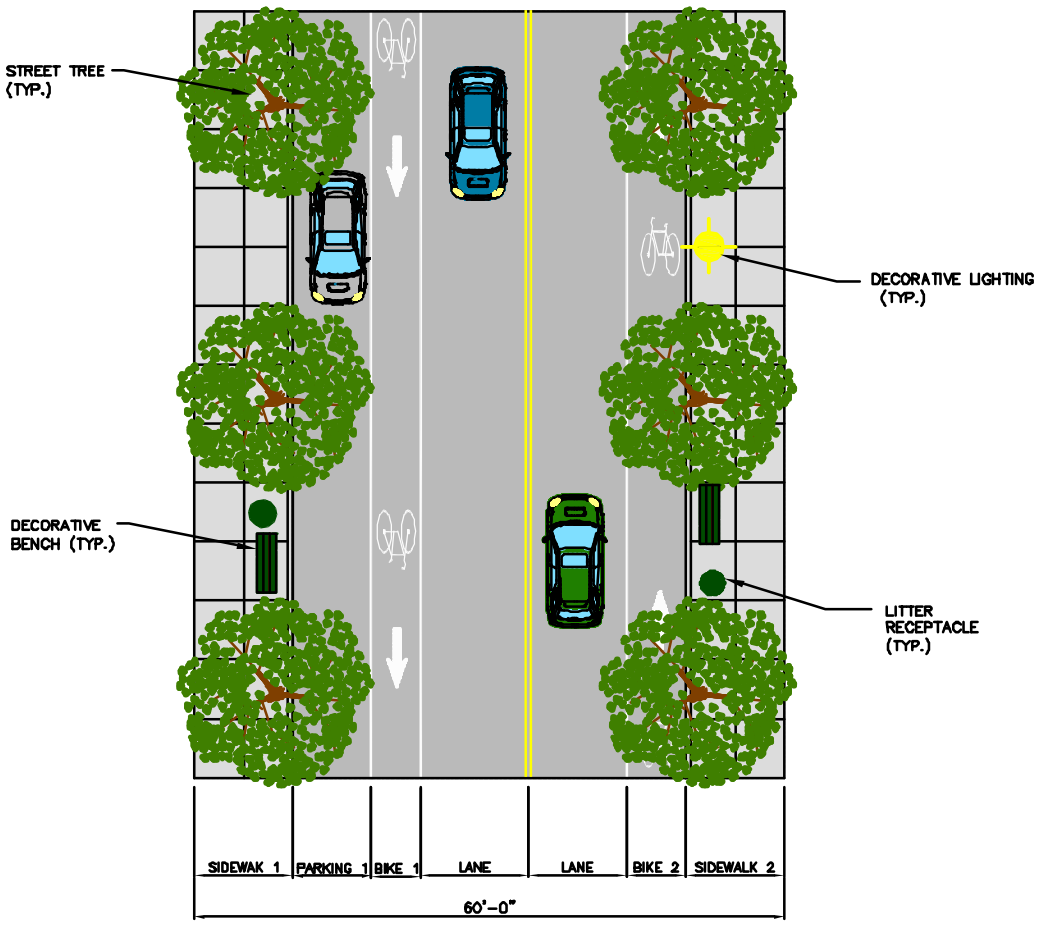


FIGURE 4.6-18
60' R.O.W.
TWO-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	PARKING 1	BIKE 1	LANE	LANE	BIKE 2	SIDEWALK 2
MAJOR COLLECTOR	10'-0"	8'-0"	5'-0"	11'-0"	10'-0"	6'-0"	10'-0"
MINOR COLLECTOR	10'-0"	8'-0"	6'-0"	10'-0"	10'-0"	6'-0"	10'-0"
LOCAL RESIDENTIAL	10'-0"	8'-0"	6'-0"	10'-0"	10'-0"	6'-0"	10'-0"

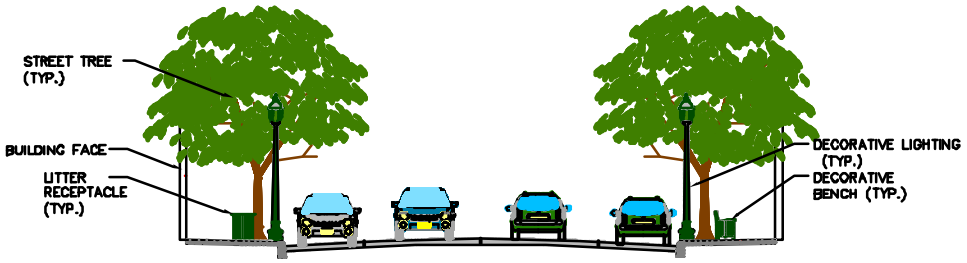
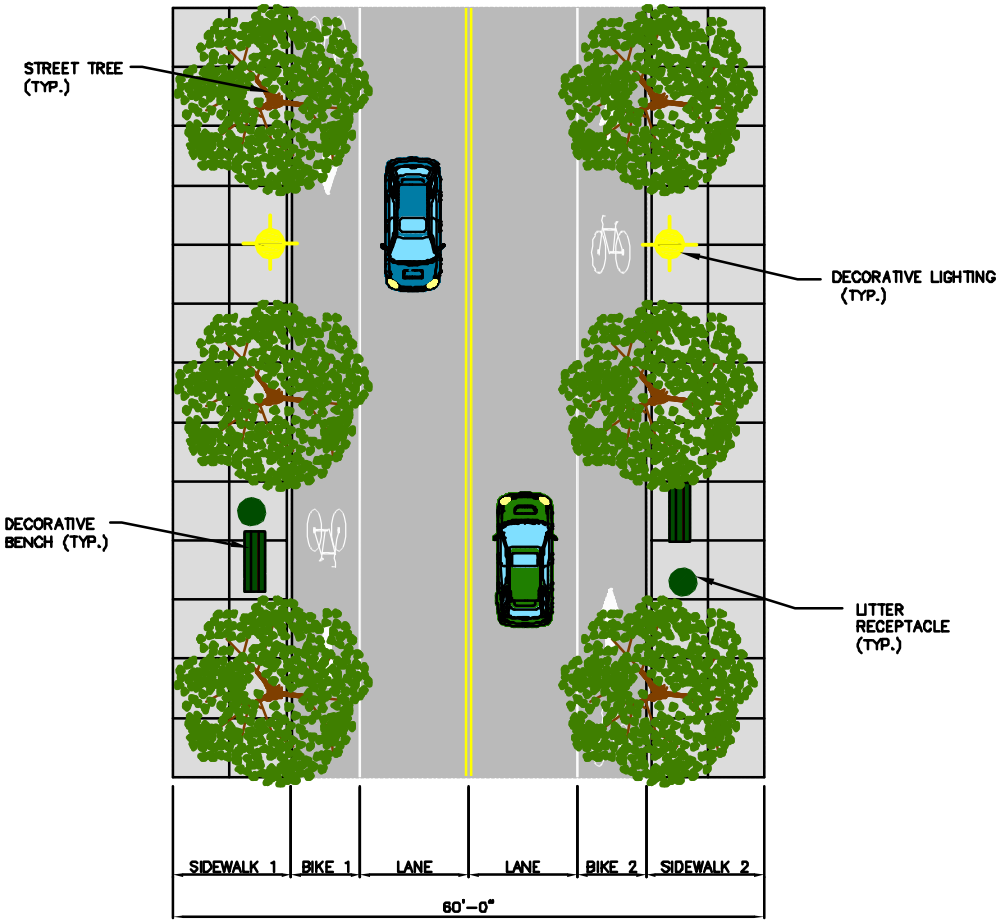


FIGURE 4.6-19
60' R.O.W.
TWO-WAY STREET
ONE SIDED PARKING



	SIDEWALK 1	BIKE 1	LANE	LANE	BIKE 2	SIDEWALK 2
MAJOR COLLECTOR	12'-0"	7'-0"	11'-0"	11'-0"	7'-0"	12'-0"
MINOR COLLECTOR	14'-0"	6'-0"	10'-0"	10'-0"	6'-0"	14'-0"

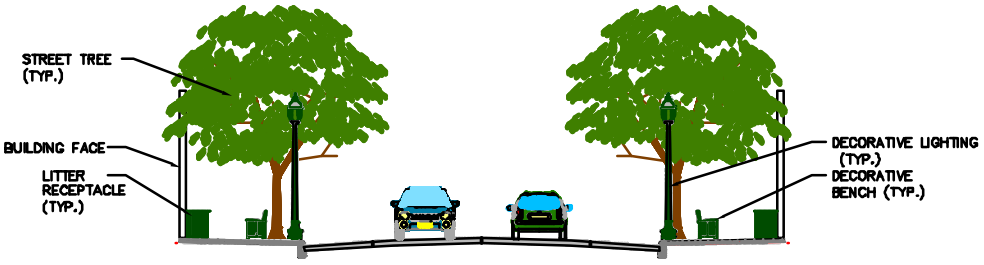
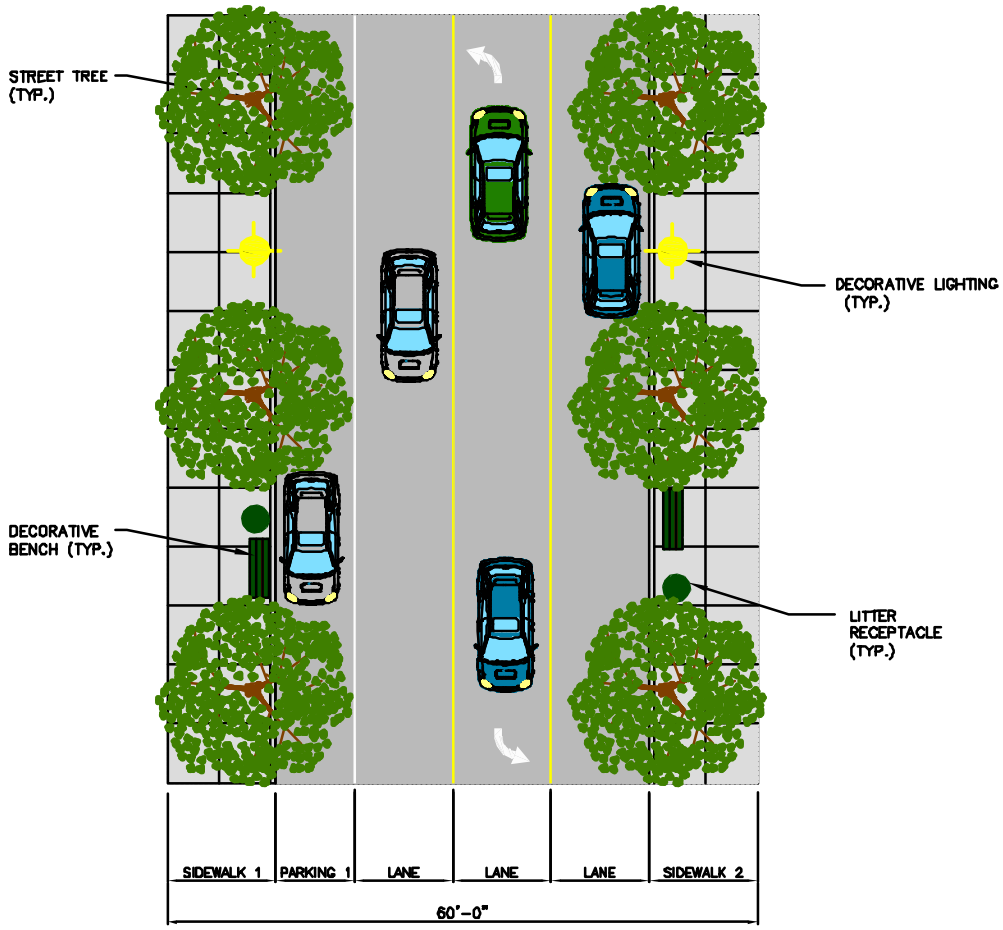


FIGURE 4.6-20
60' R.O.W.
TWO-WAY STREET
NO PARKING



	SIDEWALK 1	PARKING 1	LANE	LANE	LANE	SIDEWALK 2
MAJOR COLLECTOR	11'-0"	8'-0"	10'-0"	10'-0"	10'-0"	11'-0"
MINOR COLLECTOR	11'-0"	14'-0" *		10'-0"	14'-0" *	11'-0"

* SHARED THROUGH/BIKE LANE

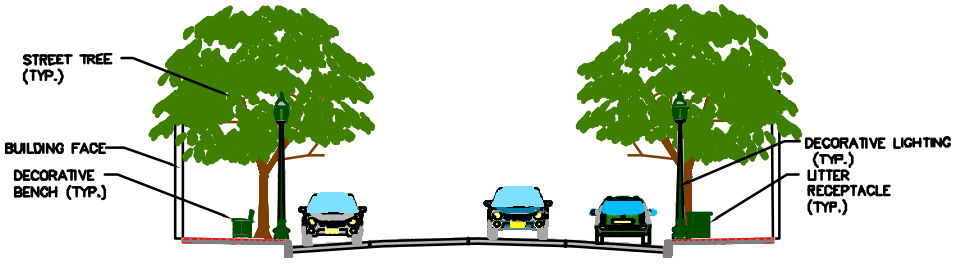
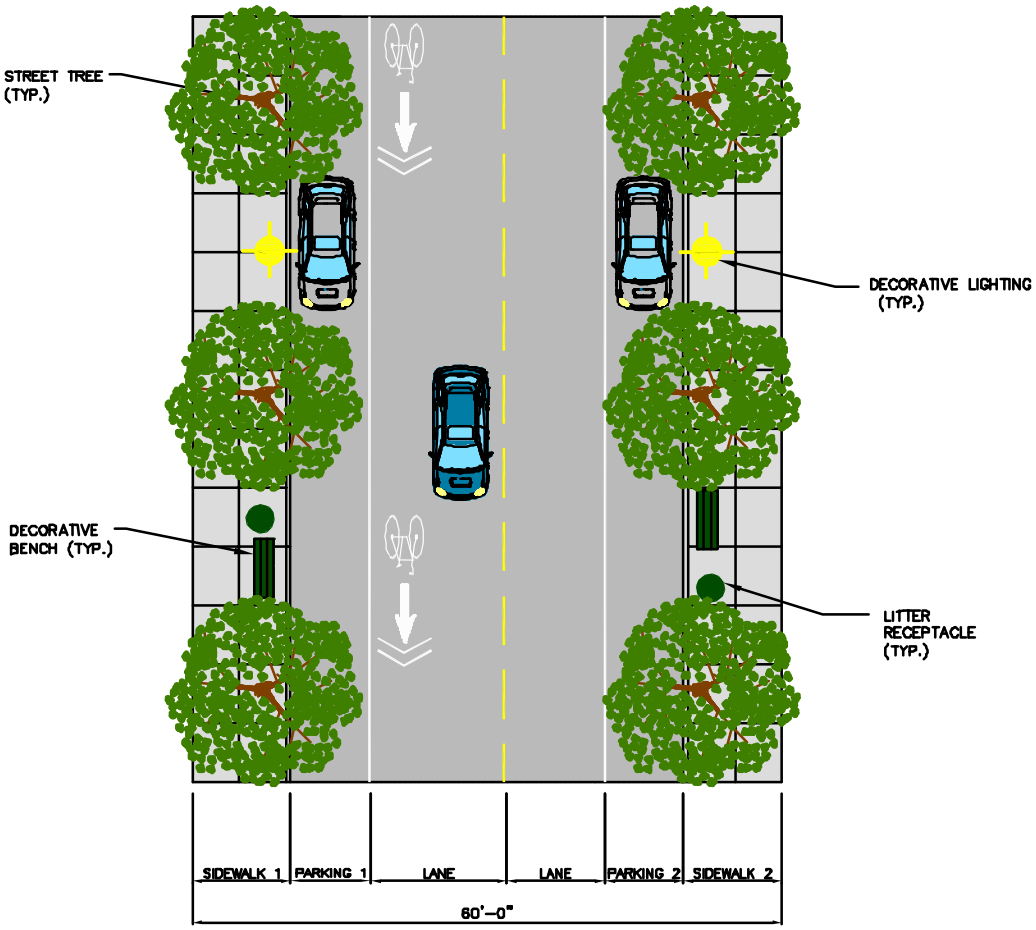


FIGURE 4.6-21
60' R.O.W.
BOULEVARD OR CENTER TURN LANE



	SIDEWALK 1	PARKING 1	LANE	LANE	PARKING 2	SIDEWALK 2
MAJOR COLLECTOR	10'-0"	8'-0"	14'-0" *	10'-0"	8'-0"	10'-0"
MINOR COLLECTOR	10'-0"	8'-0"	14'-0" *	10'-0"	8'-0"	10'-0"
LOCAL RESIDENTIAL	SEE NEXT SHEET FOR ONE-WAY, TWO SIDED STREET PLAN & SECTION.					

* SHARED THROUGH/BIKE LANE

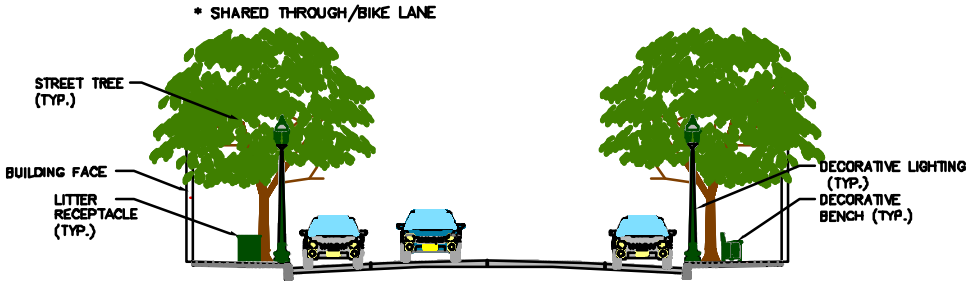
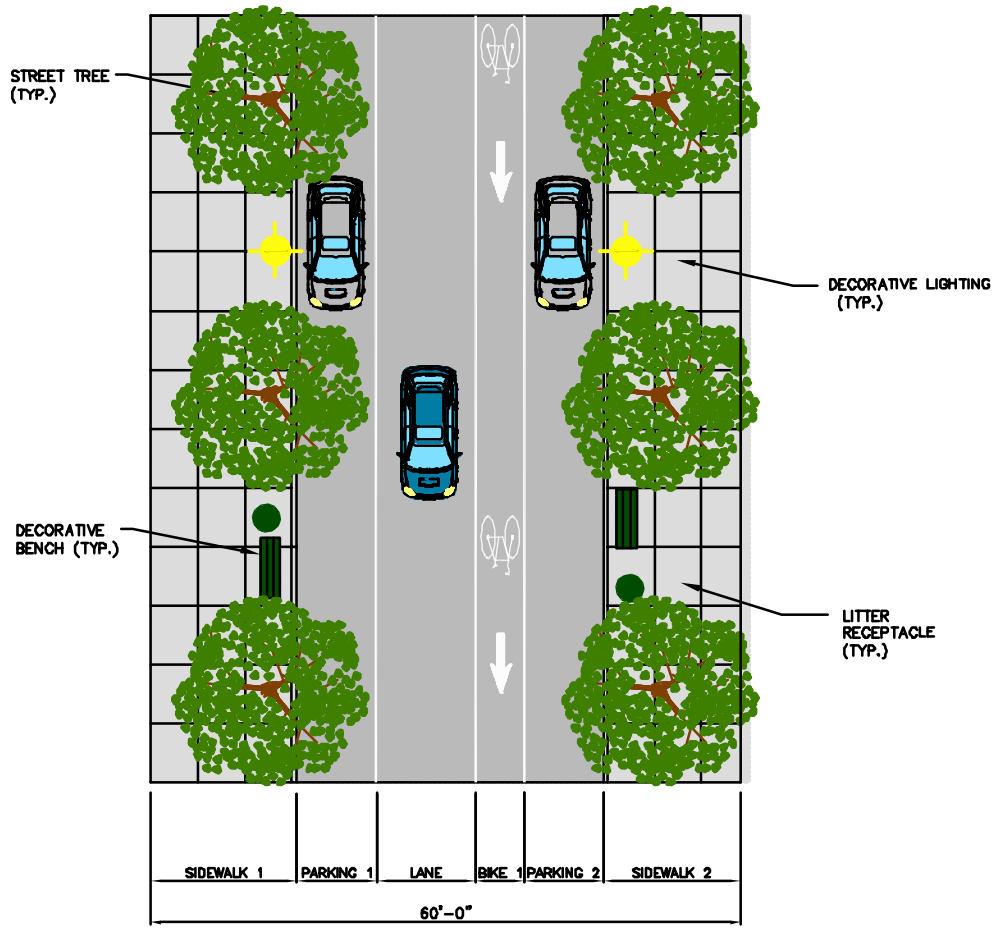


FIGURE 4.6-22
60' R.O.W.
ONE-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	PARKING 1	LANE	BIKE	PARKING 2	SIDEWALK 2
LOCAL RESIDENTIAL	15'-0"	8'-0"	10'-0"	5'-0"	8'-0"	14'-0"

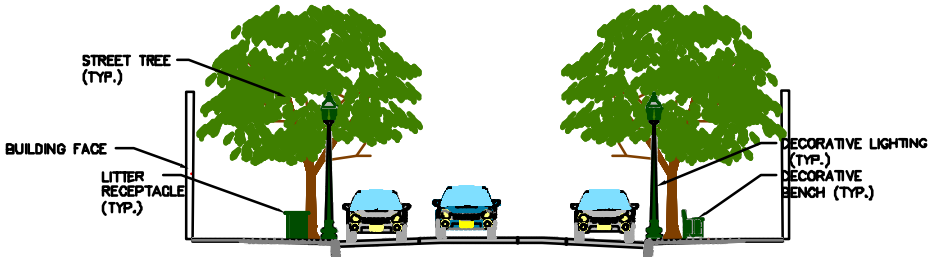
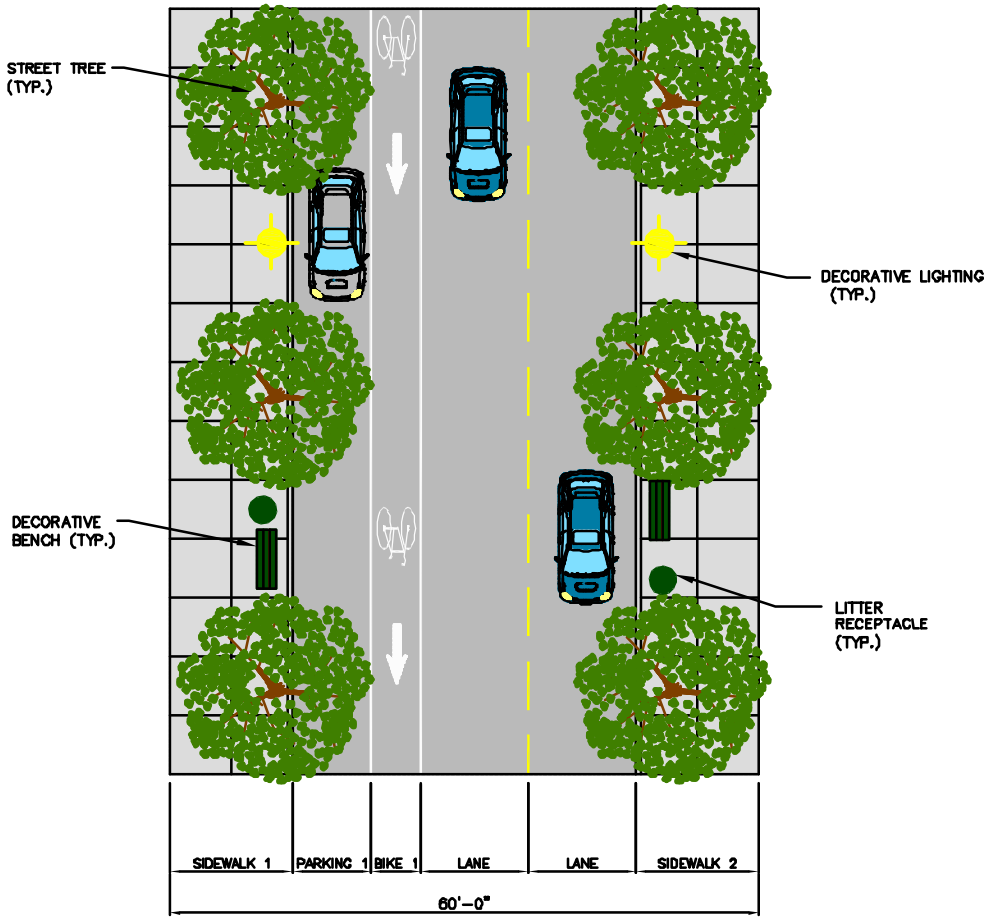


FIGURE 4.6-22a
60' R.O.W.
ONE-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	PARKING 1	BIKE 1	LANE	LANE	SIDEWALK 2
MAJOR COLLECTOR	12'-6"	8'-0"	5'-0"	11'-0"	11'-0"	12'-6"
MINOR COLLECTOR	13'-0"	8'-0"	6'-0"	10'-0"	10'-0"	13'-0"
LOCAL RESIDENTIAL	13'-0"	8'-0"	6'-0"	10'-0"	10'-0"	13'-0"

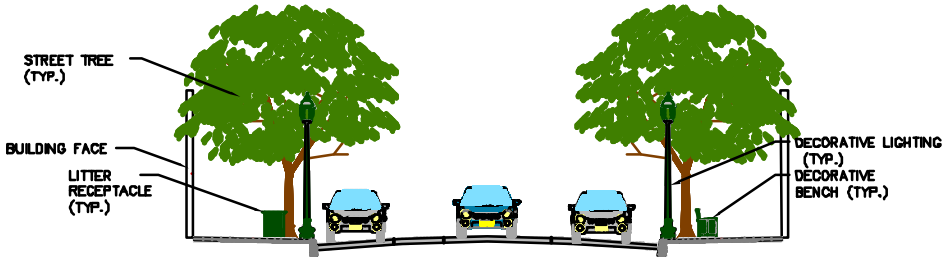
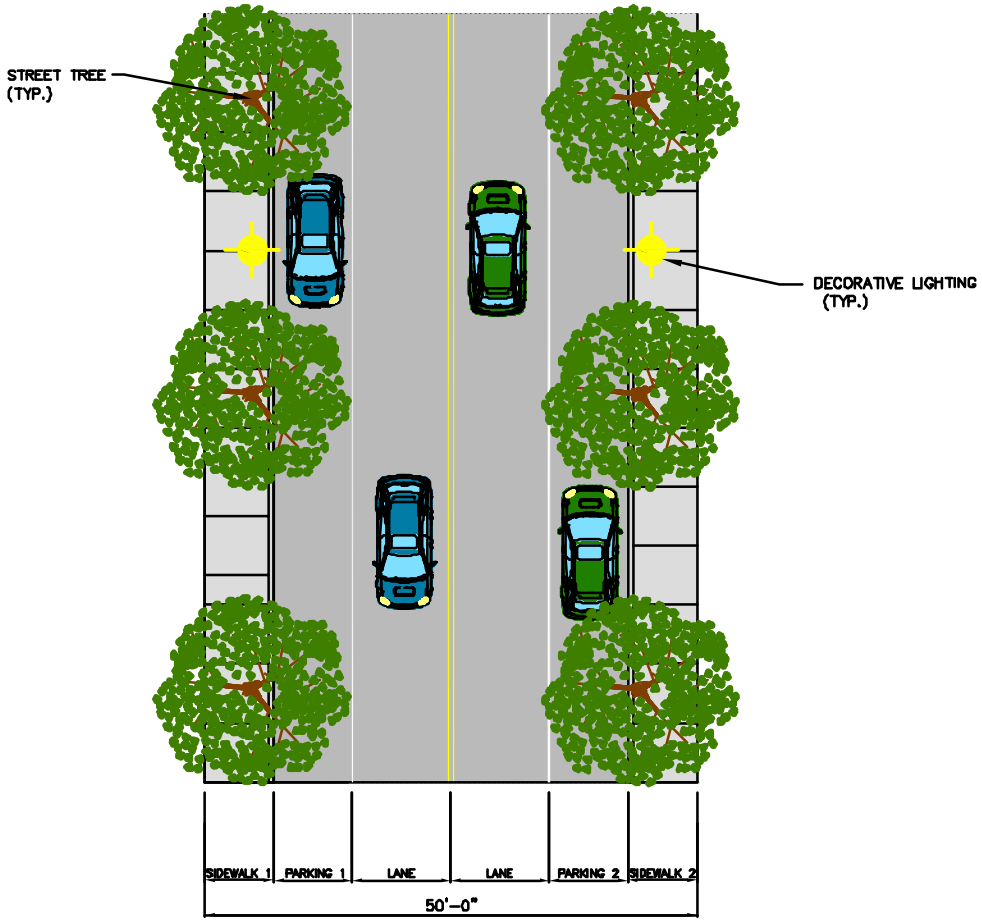


FIGURE 4.6-23
60' R.O.W.
ONE-WAY STREET
ONE SIDED PARKING



	SIDEWALK 1	PARKING 1	LANE	LANE	PARKING 2	SIDEWALK 2
LOCAL RESIDENTIAL	7'-0"	8'-0"	10'-0"	10'-0"	8'-0"	7'-0"

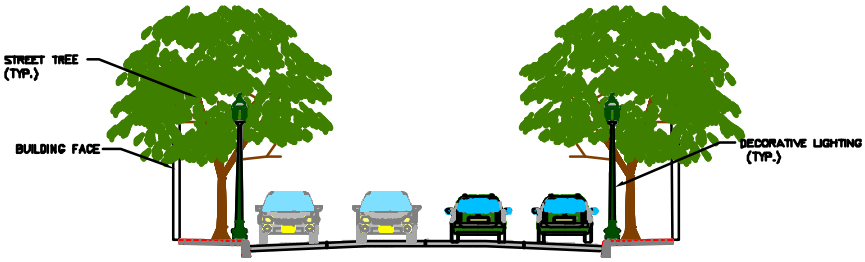
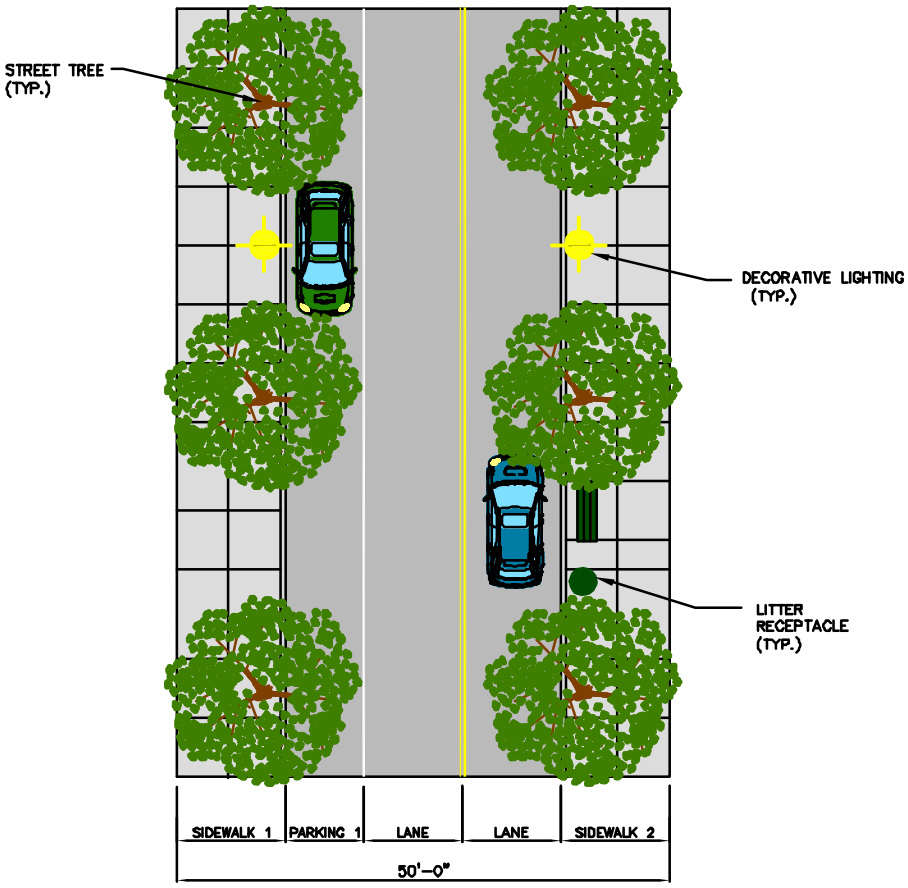


FIGURE 4.6-24
50'R.O.W.
TWO-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	PARKING 1	LANE	LANE	SIDEWALK 2
MAJOR COLLECTOR	11'-0"	8'-0"	10'-0"	10'-0"	11'-0"
MINOR COLLECTOR	11'-0"	8'-0"	10'-0"	10'-0"	11'-0"
LOCAL RESIDENTIAL	11'-0"	8'-0"	10'-0"	10'-0"	11'-0"

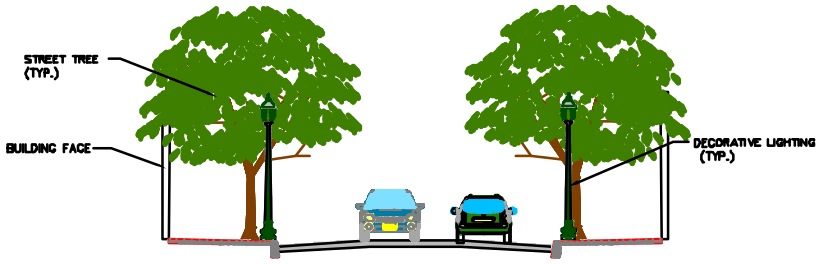
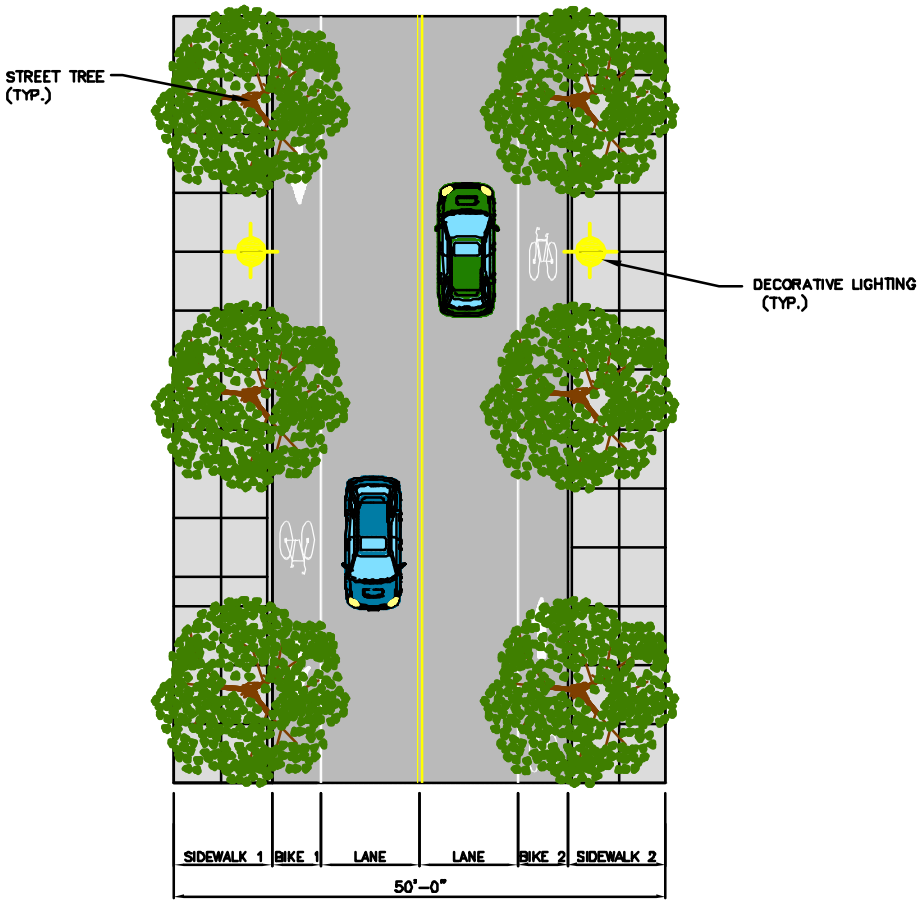


FIGURE 4.6-25
50' R.O.W.
TWO-WAY STREET
ONE SIDED PARKING



	SIDEWALK 1	BIKE 1	LANE	LANE	BIKE 2	SIDEWALK 2
MAJOR COLLECTOR	10'-0"	5'-0"	10'-0"	10'-0"	5'-0"	10'-0"
MINOR COLLECTOR	11'-0"	14'-0" *		14'-0" *		11'-0"

* SHARED THROUGH/BIKE LANE

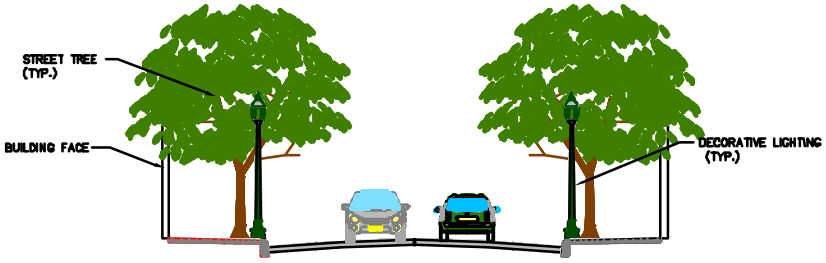
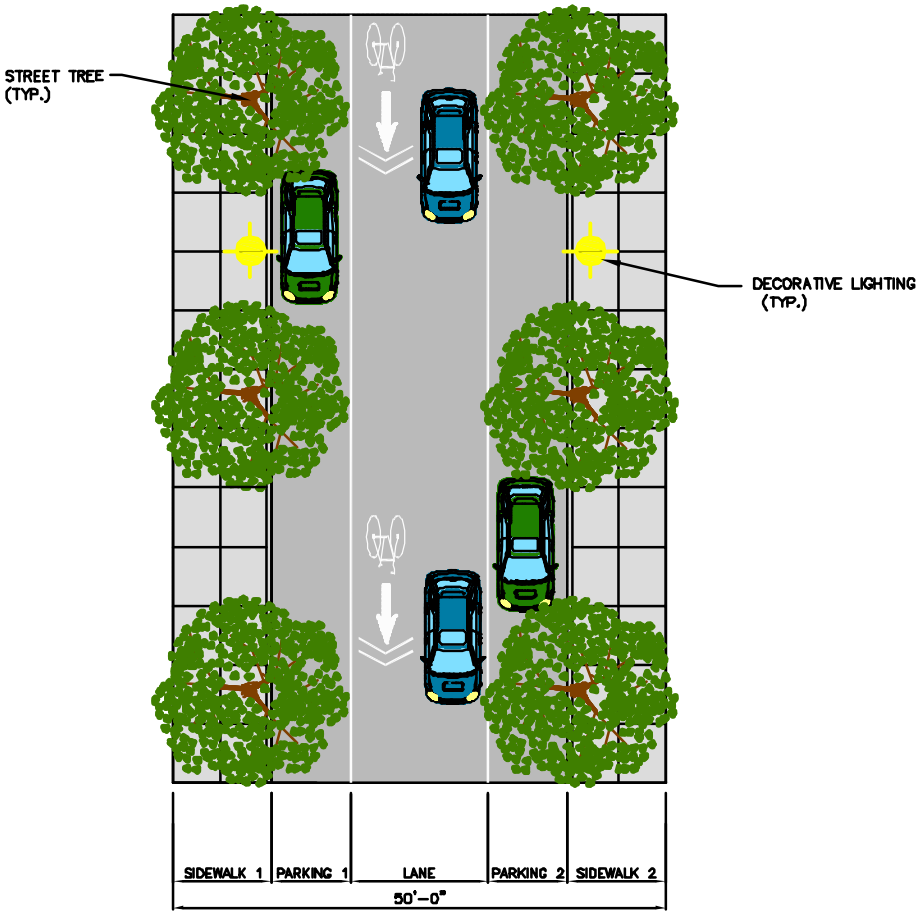


FIGURE 4.6-26
50' R.O.W.
TWO-WAY STREET
NO PARKING



	SIDEWALK 1	PARKING 1	LANE	PARKING 2	SIDEWALK 2
MINOR COLLECTOR	10'-0"	8'-0"	14'-0" *	8'-0"	10'-0"
LOCAL RESIDENTIAL	10'-0"	8'-0"	14'-0" *	8'-0"	10'-0"

* SHARED THROUGH/BIKE LANE

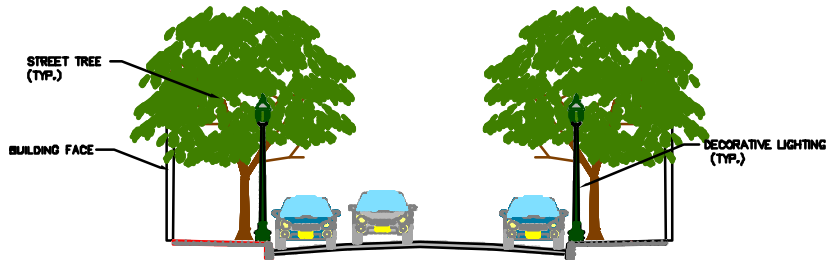
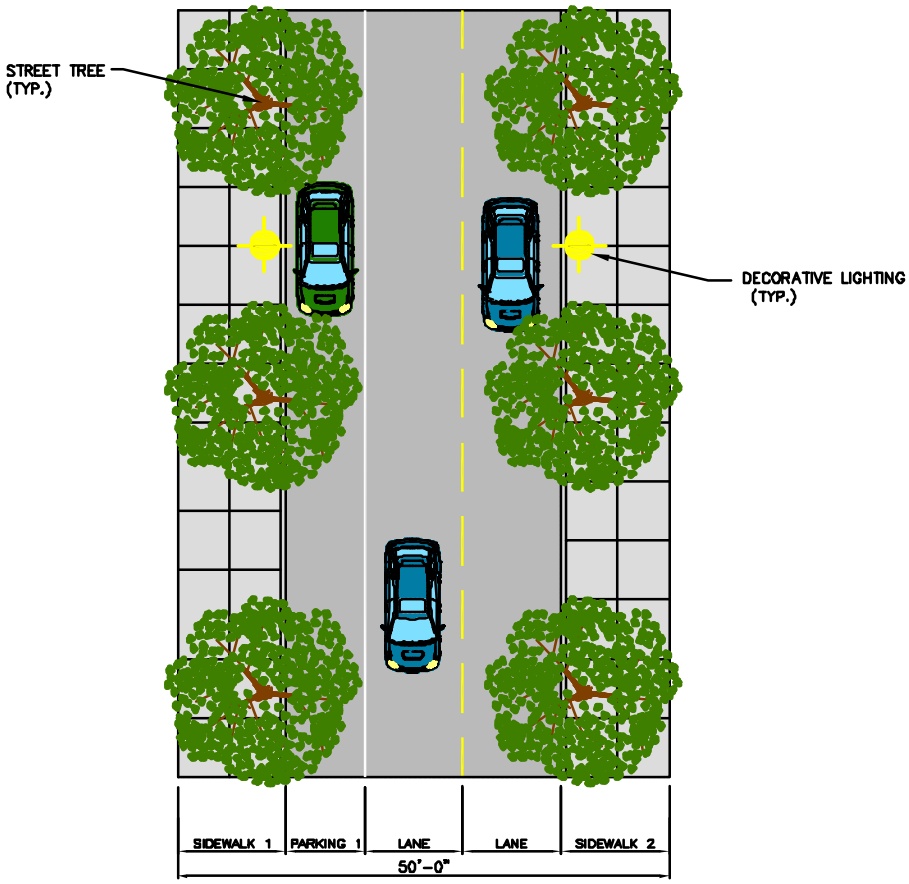


FIGURE 4.6-27
50' R.O.W.
ONE-WAY STREET
TWO SIDED PARKING



	SIDEWALK 1	PARKING 1	LANE	LANE	SIDEWALK 2
MAJOR COLLECTOR	11'-0"	8'-0"	10'-0"	10'-0"	11'-0"
MINOR COLLECTOR	SEE NEXT SHEET FOR ONE-WAY, ONE SIDED STREET PLAN & SECTION.				
LOCAL RESIDENTIAL	SEE NEXT SHEET FOR ONE-WAY, ONE SIDED STREET PLAN & SECTION.				

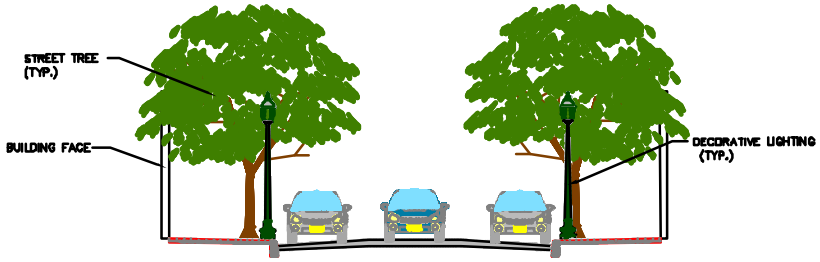
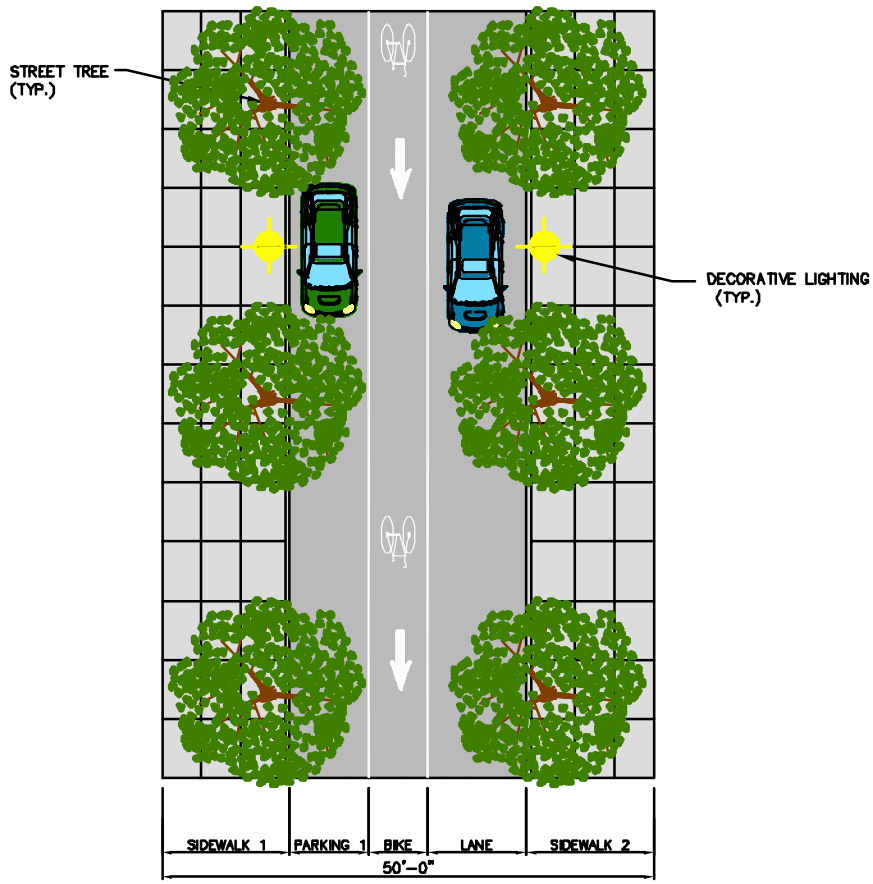


FIGURE 4.6-28
50' R.O.W.
ONE-WAY STREET
ONE SIDED PARKING



	SIDEWALK 1	PARKING 1	BIKE	LANE	SIDEWALK 2
MINOR COLLECTOR	13'-0"	8'-0"	6'-0"	10'-0"	13'-0"
LOCAL RESIDENTIAL	13'-0"	8'-0"	6'-0"	10'-0"	13'-0"

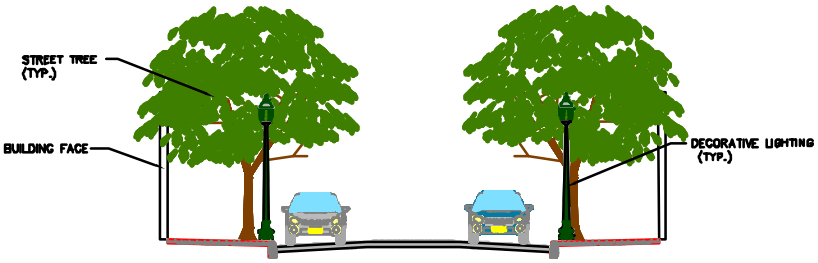


FIGURE 4.6-28a
50' R.O.W.
ONE-WAY STREET
ONE SIDED PARKING

4.6.1 Guiding Principles

The City identifies the importance of wide public sidewalks to create safe, efficient, and inviting public spaces. Therefore, multiple planning and engineering guides were reviewed relative to through lane width relative to speed and volume, and bike lane width. Additionally, the Technical Advisory Committee, and various City departments were consulted for feedback on desirable street layout and amenities. The following recommendations were considered:

- The American Planning Association's "Planning and Urban Design Standards" recommends 7 foot to 8 foot parking lanes, 4 foot to 6 foot bike lanes, and 10 foot to 14 foot travel lanes.

- NJDOT's 2001 "Pedestrian Compatible Planning and Design Guidelines; Bicycle Compatible Planning and Design Guidelines", recommends 11 feet to 14 feet for shared parking/bike lanes depending on the AADT, and recommends 4.5 feet for bike lanes.

- The 2nd Edition, Institute of Transportation Engineers (ITE), 2002 "Transportation and Land Development", recommends in Table 4-3, travel lane widths of 11 feet to 12 feet for Non-Residential Major Collectors with speed limits of 35 to 40 mph, travel lane widths of 12 feet for Residential Major Collectors with speed limits of 35 mph, and 10 feet widths for travel lanes on residential Minor Collectors with speed limits of less than or equal to 30 mph. As for bike lanes, ITE recommends that they are one-way, 6 feet to 8 feet in width, however 5 feet widths are acceptable for retrofit projects.

- Residential Site Improvement Standards, N.J.A.C. 5:21-4.5, Table 4.3, recommends a minimum parking lane width of 7 feet on residential access streets ands minor collectors.

Therefore, based on the above and after consultation with the TAC and various departments, the following guiding principals were agreed upon relative to typical section layouts:

Sidewalk/Buffer Area: A minimum width of 10 feet on each side of the right-of-way should be provided for the combination of sidewalk and buffer area. The clear width of sidewalk should meet ADA requirements and where possible have a minimum unobstructed width of 5 feet. It is desirable to have wider sidewalks where applicable.

Parking Lanes: Parking should be accommodated on all local residential streets, where feasible. All parking lanes should be 8 feet in width, with an exception for Local Residential streets with less than 1,500 ADT.

Travel Lanes: A travel lane width of 11 feet should be provided for Major Collectors where possible. For cases where this is not possible due to inadequate right-of-way width, then the speed limit of the roadway should be considered. Since the speed limit in Jersey City is 25 mph for all streets, with the exception of sections of Garfield Avenue and Caven Point Road, a lane width of 10 feet may be acceptable in some cases. A travel lane width of 10 feet should be provided for Minor Collectors and Local Residential streets.

Bike Lanes: A minimum one-way striped bike lane of 5 feet, should be provided on each side of the street where feasible. Where inadequate right-of-way exists to

provide a separate bike lane, a shared bike lane with a minimum width of 14 feet should be provided that accommodates bikes and vehicles, where appropriate.

As stated, it was not practical to develop a typical section for every possible right-of-way width in Jersey City. Therefore, in deciding how to treat a right-of-way width not specifically listed, the closest right-of-way typical section should be used. Any additional width should be added to the sidewalk, if 5 foot bike lanes and adequate lane widths and parking widths are already provided as recommended above. If not, then the bike lanes, through lanes, and parking lanes should be brought up to recommended standards. For high volume roads, additional travel lanes should be provided in lieu of lanes wider than standards. Wider lanes tend to encourage higher speeds. Further discussions of traffic calming measures can be found in the Traffic Calming Plan of this report.

The Typical Roadway Sections can be found in Figures 4.6-1 through 4.6-28. It should be noted that, although not depicted on the sections, some streets will require special considerations for buses as indicated on the Functional Class mapping. These roads are Congress Street, Franklin Street, and Ravine Avenue.

4.6.2 Street Amenities

Street amenities create inviting, attractive, usable public spaces. Therefore, the plan includes typical sidewalk layouts that accommodate bike racks, benches, planters, street trees, trash receptacles, and lighting. Sample layouts for street amenities can be found on the typical sections.

4.7 Traffic Calming Plan

4.7.1 Introduction

According to the Institute of Transportation Engineers (ITE) “traffic calming is the combination of mainly physical measures to reduce the negative effects of motor vehicle use, alter driver behavior and improve condition for non-motorized street users.” (*I.M. Lockwood, “ITE Traffic Calming Definition,” ITE Journal, Vol. 67, July 1997, page 22-24.)* Traffic calming measures are used to reduce the speed and volume of vehicles to acceptable levels for the functional street classification, thereby making roadways safer, more pedestrian-friendly, and improving aesthetics.

Traffic calming has been used in Europe for many years and has been successfully used throughout the United States in more recent years. Traffic calming measures cannot solve all traffic problems and careful consideration should be taken to overall regional impact.

Traffic calming measures are not regulatory measures that require enforcement, but are intended to be self-enforcing measures. It should be noted that NJDOT would not consider traffic calming features along segments of roads with posted speed limits of 40 MPH or above. However, all roads in local streets in Jersey City have posted speed limits of 25 mph, with the exception of portions of Garfield Avenue and Caven Point Road.

4.7.2 Traffic Calming Measures

The following are some examples of traffic calming measures:

4.7.2.1 Speed Humps and Speed Tables

Speed humps and speed tables are a raised surface within the traveled way designed to effectively reduce speeds. Typically, they are used within a residential setting to create a gentle rocking motion that discourages drivers from driving quickly. Speed humps are designed for speeds of approximately 15 MPH at the hump and between 20 MPH to 25 MPH between properly spaced speed humps.

As shown in Figure 4.7-1, speed humps and tables are typically 3 to 4 inches in height and vary between 12 and 22 feet in length and can be constructed of either hot mix asphalt or concrete. Additionally stamped concrete or decorative pavement is sometimes used with speed humps to improve the aesthetics. Additionally, rubber speed humps are widely available and can be used on a temporary or trial basis.

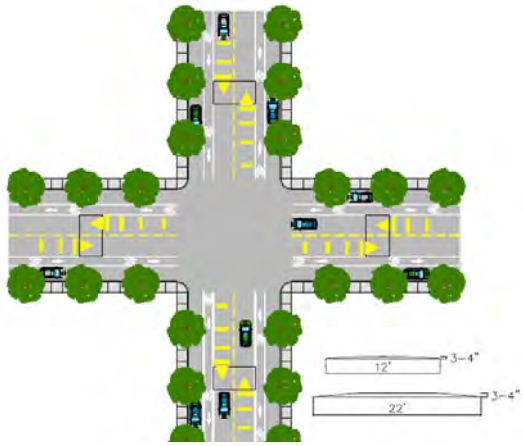


Figure 4.7-1 Speed Humps

There are two typical designs for speed humps and speed tables. The first is the Watts speed hump that was designed by the Transport and Road Research Laboratory in Great Britain and endorsed by the ITE in its publication “Guidelines for the Design and Application of Speed Humps”, dated June 1997. The cross section of these speed humps are a parabolic shape and are 12 feet in width and are only permitted on local streets with volumes of less than 3,000 ADT (average daily traffic) and with a posted speed limit of 30 MPH or less (New Jersey Title 39, C.39:4-8.10). Speed humps may be constructed on a totally self-contained two-lane-residential street and on totally self-contained one-way residential streets under municipal jurisdiction that have no direct connection with any street in any other municipality and on one-way streets connecting to County Roads. This design is primarily used at mid-block locations. The use of the parabolic speed humps should be limited to streets that are classified as “local”, with no more than two travel lanes or 40-feet of pavement width. The horizontal curvature of the road should be a 300-foot radius or greater, with adequate stopping sight distance. Speed humps should not be used on streets with grades greater than 8%. There should be no more than 5% long-wheelbase vehicles and the street should not be a primary emergency response route or bus route. It is also important that a majority of the residents support the use of speed humps on their local street.

The second design was developed in Seminole County Florida and is more commonly referred to as a speed table. The speed table is 22 feet in length and has a 10-foot flat top with a 6-foot ramp on each end. This design is less abrupt than the parabolic speed hump and, therefore, has less impact on emergency service routes. This design can be used at mid-block locations or can be used at intersections as raised pedestrian crosswalks. They can also be used in the main access aisles of large shopping centers.

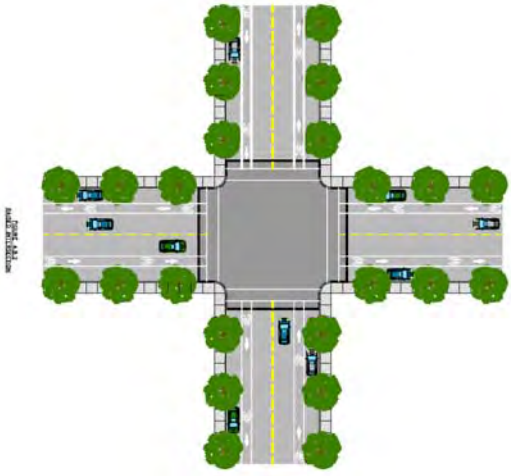
Speed humps and speed tables are typically spaced between 400 and 550 feet apart. Speed humps should be located at least 200 feet away from intersection or sharp horizontal or vertical curves that limit sight distance. Speed humps/tables must also be located so that there is sufficient room on either side of the hump so that bicycles do not conflict with parked cars. Finally, provisions must be made in the design of speed humps so that it does not block gutter flow or other drainage patterns. The design and location of speed humps or speed tables should consider bicycle access, as well as drainage impacts.

Proper signing and striping of speed humps is important to provide advance warning to motorists as well as bicyclists and pedestrians. The Manual on Uniform Traffic Control Devices has proposed the adoption of standard Speed Hump Warning Signs and pavement markings. It is recommended that these markings be used with speed hump designs. Delineator posts should be provided during the winter months to alert snowplow operators.

Since speed humps and speed tables are primarily designed to reduce speeds, limited use of speed humps and speed tables can be anticipated within Jersey City.

4.7.2.2 Raised Intersections

Figure 4.7-2 – Raised Intersection



Raised intersections are similar to speed tables; however, unlike speed tables the entire intersection, including the crosswalks, is raised 6 inches above the street level to be flush with the sidewalk and curb (see Figure 4.7-2). Long ramps are provided on all approaches. Raised intersections are commonly used in redevelopment areas, commercial areas, business districts, and other high pedestrian activity areas with an ADT of 10,000 or less. Although they are appropriate on both local streets and collector roadways, they are generally not recommended for use on arterial roadways.

Raised intersections reduce vehicle speeds on all approaches and reduce conflict between vehicles and pedestrians by elevating pedestrians above street level and demarcating the intersection and crossing areas. Decorative textured pavement is commonly used in raised intersections. Advanced warning signage and striping must be provided.

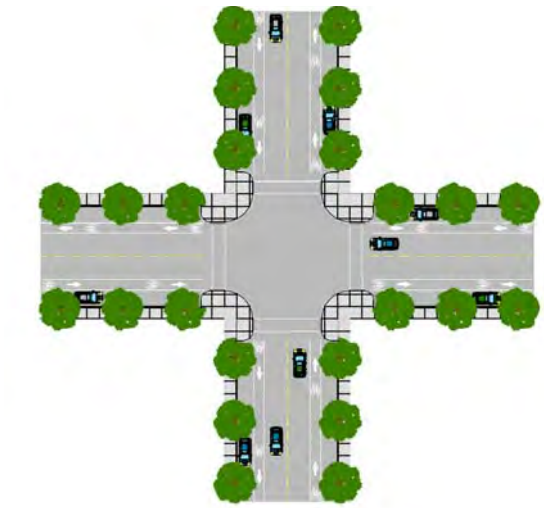
Similar considerations should be given to the location and placement of raised intersections as speed humps/tables. The implementation of raised intersections should also consider bicycle access in the design and location. Special considerations must be taken into account during the design of raised intersection to provide adequate warning to visually-impaired pedestrians. The use of decorative pavement should be considered, but should be done in

conjunction with the implementation of a road opening permit ordinance (as noted in Section 4.7.2.8) that requires a contractor restore the road surface using a matching decorative pavement.

4.7.2.3 Bump Outs (also known as Neckdowns)

This traffic calming measure involves the extension of the curb line to narrow the street width and shorten the length of the crosswalk, as noted in Figure 4.7-3. Neckdowns reduce the curb to curb roadway width, making the intersection more pedestrian-friendly, by shortening the crossing distance and improving visibility of the crosswalk and the intersection via raised peninsulas. Neckdowns can also tighten curb radii, which reduces the speed of turning vehicles.

Figure 4.7-3 – Bump Outs and Neckdowns



This traffic calming measure is appropriate for all types of street classification including local, collector and arterials. It can be used on streets with traffic volumes of up to 15,000 ADT and with posted speed limits of 40 MPH or less. Generally, the curb is extended 8 feet from the existing curb line, thereby creating a protected area for parked vehicles. This measure also provides greater visibility at the intersection, since vehicles travel away from the curb line, closer to the centerline of the traveled way. Bump outs or neckdowns reduce the length of the crosswalk for pedestrians, while creating a narrowing effect to the motorist traveling through the neckdown.

Neckdowns and bump outs can also be used at mid-block locations to provide areas for benches and plantings, which improve the aesthetics of the neighborhood. Vertical elements, such as light poles, trashcans, benches and trees, can also be used to draw attention to the constriction of the road and provide a visual cue to the motorist.

The main disadvantage of this traffic calming measure is the potential impact to roadway drainage. Consideration must be given to roadway drainage and snow/ice removal when designing bump outs. Bump outs at the intersections should not have an effect on parking, since the bump out should be located within the no parking area at intersections. Curb bump outs at intersections benefit pedestrians more than they help to reduce vehicular travel speeds. Turning templates must be used when designing bump outs. Consideration must be given to bicycle access when locating and designing curb bump outs at intersections.

4.7.2.4 Chicanes

Chicanes (Figure 4.7-4) are a series of mid-block curb extensions approximately 50 to 100 feet apart staggered on alternating sides of the street that force

vehicles to negotiate a serpentine alignment. This measure is appropriate on local streets that have traffic volumes of less than 3,500 ADT and can be used on both one-way and two-way streets. Chicanes are not appropriate on roadways with high truck volumes, bus routes, primary emergency response routes or in areas where the roadway grade exceeds 8%.

Chicanes can be constructed from a variety of devices including curb extensions, planters, trees, barrels, fences or barricades; however, care must be taken so that these devices do not create a safety hazard.

A chicane-like effect can be created by alternating on-street parking from one side to the next when parking is normally provided only on one side of the street. On streets where parking is permitted on both sides of the street, actual chicanes would result in the loss of on-street parking. Chicanes should be designed to accommodate bicyclists in a designated bike lane.

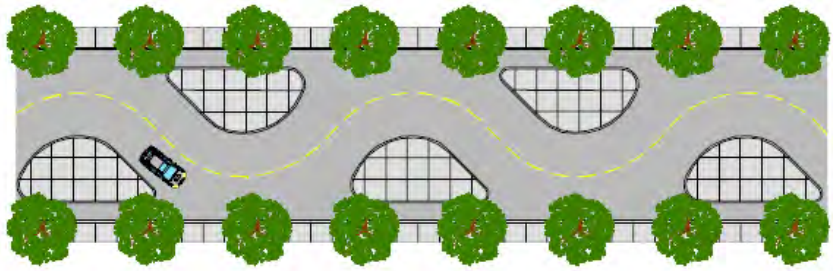
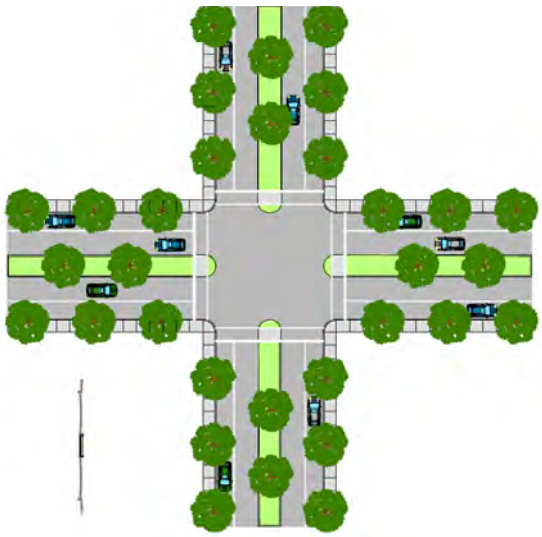


Figure 4.7-4 – Chicanes

4.7.2.5 Raised Medians and Pedestrian Refuges

A raised median includes the installation of a curbed island within the center of a street. This island narrows the travel lanes at that location and provides a pedestrian refuge area in the center of the street. This reduces the crossing distance for pedestrians by allowing them to cross half of the street at one time, as shown in Figure 4.7-5. They can be provided at approaches to intersections or along an entire block.

Figure 4.7-5 – Raised Median



Care should also be taken to provide adequate pedestrian safety. Wide sections of depressed curbs, for barrier-free access at street corners, can serve as unimpeded ramps for vehicles onto sidewalks. In addition, large depressed curbs at corners provide short-cuts for corner cutting vehicles. In conjunction with the implementation of traffic calming measures, City ordinances should be amended to require barrier-free depressed curb ramps to be setback from the street corner so as to provide two distinct sets of ramps with a full face curb between them.

Median islands are appropriate for local, collector and arterial streets and may be used on high-volume roads with posted speed limits up to 40 MPH. Median islands should be 6 to 8 feet wide and should be at least 12 to 20 feet in length. Access across the raised median should be provided in the design to accommodate pedestrians and bicyclists. Raised medians will restrict access to driveways to/from one direction of travel.

4.7.2.6 Traffic Circles

Traffic circles are raised circular islands located in the center of an un-signalized intersection. Traffic circles are generally landscaped and are typically controlled by yield signs on all approaches. The traffic circle restricts drivers from speeding through intersections by impeding the straight through movement, which forces motorists to slow down, approximately 4 to 6 MPH in the vicinity of the traffic circle.

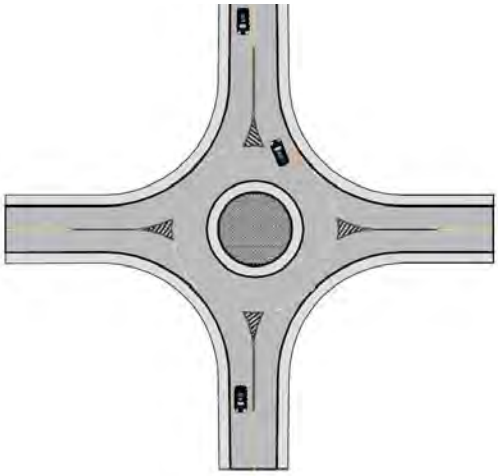
Figure 4.7-6 – Traffic Circle

Traffic circles can be used at intersection of local streets, with average daily traffic volumes of less than 3,500. Primarily, traffic circles should be used at intersections that have low pedestrian and left turning volumes.

As shown in Figure 4.7-6, the major disadvantage of traffic circles is the inability of large vehicles such as trucks and busses to maneuver around tight radii. If there is a truck volume issue, mountable curb and truck aprons may be required within the traffic circle.

The horizontal deflection of traffic circles forces cars, trucks and buses into the pedestrian crosswalks or into the bicycle lanes, thereby impacting bicycle access.

Figure 4.7-7 - Roundabout



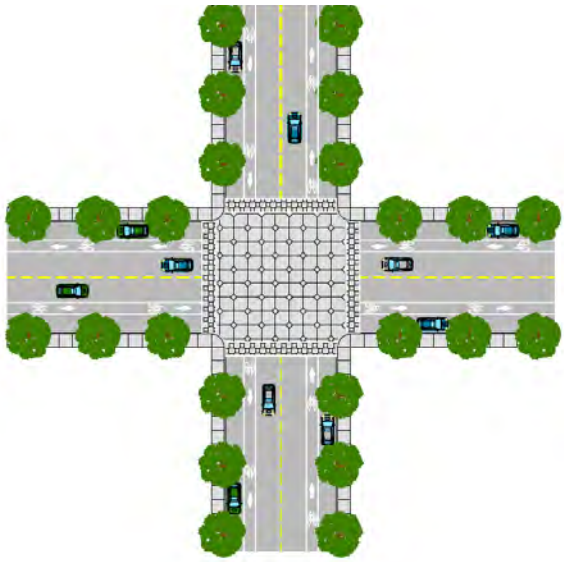
4.7.2.7 Roundabouts

Roundabouts are similar to the traffic circle in that they require vehicles to circulate around a center island in a counter clockwise direction (see Figure 4.7-7). However, they are generally much larger than traffic circles and are used mainly on arterial and collector streets, where traffic circles are used on local roadways. A single lane roundabout has a capacity of 2,500 vehicles per hour.

Roundabouts require the rights-of-way, similar to a traditional intersection. Parking is prohibited on the approaches and around a roundabout. Pedestrian and bicycle crossings are generally not permitted within the roundabout. Therefore, this traffic calming measure should not be used on streets with high pedestrian and bicycle volumes.

4.7.2.8 Textured Pavement and Crosswalks

Figure 4.7-8 – Textured Pavement



Concrete pavers, stamped concrete and/or decorative pavement is placed at intersections to warn motorists they are approaching a pedestrian crossing (see Figure 4.7-8). Because there is no change in the roadway geometry, textured pavement and crosswalks are suitable for all classification of roadways and may be used on streets with speed limits up to 45 MPH.

This traffic calming measure by itself has minimal effect on reducing traffic speeds or volume. However, it is particularly effective when used in combination with other traffic calming measures. Textured pavement and crosswalks may present traction problems for bicyclists and wheelchairs if a heavily textured surface is utilized. Care should be taken to design an appropriate pavement texture that meets the Americans with Disabilities Act. Consideration should be given to bicyclists when developing a textured pavement treatment.

Another major issue with this traffic calming strategy is associated with maintenance, particularly as it relates to utility work and road opening permits. When a road opening is required in areas having textured or decorative pavement, the utility contractor will typically only patch the roadway with hot mix asphalt. Therefore, the implementation of this traffic calming strategy must be done in conjunction with a Road Opening Permit Ordinance that requires a contractor to restore the road surface using a matching decorative pavement.

4.7.2.9 Road Closures, Traffic Diverters

Another category of traffic calming measures is full or partial road closures, including directional diverters, semi-diverters, median barriers, forced turn islands, pork chops, right turn islands, etc. These traffic-calming measures are designed to control traffic volumes on residential roadways and should only be used on local streets with traffic volumes of less than 3,500 vehicles per day.

Full street closures are barriers placed across a street to completely close off a street to through traffic; leaving only the sidewalk and bicycle paths open, as shown in Figure 4.7-9. Half street closures are similar to the full street closure, except that they only block travel in one direction.

Directional diverters are barriers placed diagonally across intersection to block through movements, forcing traffic to turn to the right only. Median barriers are raised islands located along the centerline of a street and through an intersection to block traffic at a through street. Forced turn islands, pork chops and right turn islands are raised islands that only block certain turning movements at intersections.

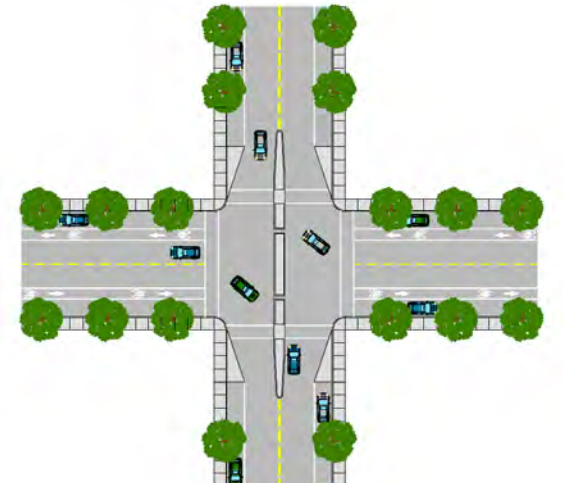


Figure 4.7-9 – Diversion

With road closures, barriers such as landscaped islands, walls, gates, bollards, or other obstructions can be used to leave an opening smaller than the width of a passenger car but large enough for pedestrians and bicyclists to maintain access. These methods are most often used to alleviate cut through traffic by making travel less direct through neighborhoods with a street grid layout. The use of these measures does not address speed control. In addition, since they prohibit traffic in certain directions, road closures or diversions tend to move a traffic problem to an adjacent street. Because of road closures, the circuitous route may impact emergency response times. The use of road closures and diversions should be coordinated with fire, police and other emergency services, as well as snow removal, garbage collection and school bus routes.

Although this strategy is more difficult to implement in existing established neighborhoods, it should be considered in the design of street networks in new redevelopment areas. This measure is also recommended in areas with high pedestrian traffic, where portions of roadways can be closed off for pedestrian traffic only.

4.7.2.10 Multi-Way Stop Controlled Intersections

A multi-way stop controlled intersection is where all (three or four) roadway approaches are stop controlled. Multi-way stop control is used where the volume of intersecting traffic is approximately equal. The primary purpose of multi-way stop controlled intersections is not traffic calming. Some studies indicate that installation of multi-way stop control does not significantly affect travel speeds at a significant distance away from the intersection. Some studies showed that a slight increase in speeds after the installation of multi-way stop control. Multi-way stop control is used on neighborhood roadways where the traffic volumes on intersecting streets are approximately equal. Multi-way stops must be installed in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). The decision to install multi-way stop control should be based on an engineering study and must be approved by either the Municipal or County Engineer. Criteria that should be considered when assessing an intersection for a multi-way stop include the following:

- Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop
- The total traffic volume entering the intersection from the major street approaches should be at least 300 vehicles per hour for any 8-hour period of an average day, and minor street vehicular
- Pedestrian and bicycle volumes entering from the minor street averages at least 200 units per hour for the same 8 hour period

4.7.2.11 Reduced Speed Limits

Studies report that reduced posted speed limits on local streets show little or no effect. The primary reason drivers travel at a speed is roadway geometry, other traffic and the immediate environment, rather than reacting to a specific speed limit sign. Reduced speed limits are a function of enforcement. Posting of unreasonably low speed limits can reduce the credibility of other traffic control devices.

Streets in Jersey City generally have posted speed limits of 25 mph, except portions of Garfield Avenue and Caven Point Road. As such, limited use of reduced speed limits can be anticipated in Jersey City.

4.7.2.12 Traffic Signs, Striping and Pavement Markings

Some of the measures involving signs include posted speed limits, turn prohibitions, commercial vehicle/weight prohibitions, pedestrian crossing ahead, and “yield to pedestrian in crosswalk” in road, flexible signposts. Examples of striping are upgrades to thermoplastic retro-reflective crosswalks and shoulder lines. Pavement markings include school crossing, pedestrian crossing, speed limits, warning signs installed with thermoplastic retro-reflective tape. Several studies have found that adding shoulder lines or bike lanes to give the perception that the lanes are narrower have resulted in reduced travel speeds of 3 to 4 MPH. Striping is a low cost traffic calming technique. Additionally, the implementation of Jersey City’s typical roadway cross sections will reduce travel lane widths and add bike lanes on Jersey City streets.

Signage and pavement markings can be a low-cost, high-impact, start to traffic calming. Signing, striping and pavement markings have a minimal impact on emergency response routes. However, they have limited effectiveness on volume and speed reduction. As with all signing, striping and pavement markings, they must also be installed in accordance with the MUTCD. The establishment of an enforcement program in conjunction with traffic signage and pavement parking is important to improve the effectiveness of the program. This method has no impact on bicycle access.

4.7.2.13 Speed Detector Signs

Speed detector and display signs can also be used as a form of traffic calming measure. These signs display the speed of approaching vehicles to alert motorists when they are driving at unsafe speeds. They have been proven to slow down traffic and are ideal for use on local roads or in school zones.

Speed detector signs can be a lower cost traffic calming measure that can either permanently be installed or used in temporary locations by the Police Department. The establishment of an enforcement program in conjunction with this measure is important to improve the effectiveness of this program.

4.7.2.14 Red Light Running

On January 13, 2008 Governor Corzine signed into law Assembly Bill 4314, which requires the establishment of a five-year pilot program to determine the effectiveness of a traffic control signal monitoring system in New Jersey. This program involves using a camera system and vehicle sensors, which produce images of vehicles crossing the intersection during the red phase of the traffic signal. Three municipalities have already been selected to participate in this program and the NJDOT has made provisions for up to 12 municipalities to be approved in the first year.

In order to be selected to participate in this program, a municipality must demonstrate that an intersection has a history of red light running and that no efforts including engineering, enforcement and education, have been effective in decreasing the number of violations.

4.7.3 Traffic Calming Measure Consideration Matrix

The Traffic Calming Selection Matrix provides guidance on selecting a traffic calming measure for a particular street. The traffic calming measure is listed along the left side of the matrix. The criteria to consider when choosing a traffic calming measure are shown across the top of the matrix. In general, addressing traffic calming issues involves neighborhood participation, developing a toolbox of applicable measures, and establishing a process for study and implementation. This matrix should be used to establish the appropriate traffic calming measures in response to neighborhood inquiries.

Table 4.7.1 Traffic Calming Selection Matrix

Traffic Calming Measure	Functional Classification	Cartway Width	Traffic Volume	Maximum Posted Speed Limit	Percent Heavy Vehicles	Roadway Grade	Comments and Recommendations
Speed Humps	Local residential and local park	40-feet or less	Less than 3,000 ADT	25 MPH	Less than 5%	Less than 8%	Emergency services and transit should be consulted
Speed Tables/ Raised Crosswalks	Local residential and local park	40-feet or less	Less than 3,000 ADT	25 MPH	Less than 5%	Less than 8%	Emergency services and transit should be consulted
Raised Intersections	Minor collector, local residential and local park	40 feet or less	Less than 10,000 ADT	35 MPH	Less than 5%	Less than 8%	Emergency services and transit should be consulted
Bumpouts/ Neckdowns	All	48 feet or less	Up to 15,000 ADT	40 MPH	Less than 5%	Less than 8%	Emergency services and transit should be consulted
Chicanes	Local residential and local park	40 feet or less	Less than 3,500 ADT	35 MPH	Less than 5%	Less than 8%	Emergency services and transit should be consulted
Raised Medians/ Pedestrian Refuges	All	Up to 6 lanes	Up to 15,000 ADT	40 MPH	Less than 5%	Less than 8%	Emergency services and transit should be consulted
Traffic Circles	Minor collector, local residential and local park	One and two lane approaches	Less than 3,500 VPH	45 MPH	No limit	No limit	Aprons should be included to accommodate large, heavy vehicles
Roundabouts	Minor collector, local residential and local park	One and two lane approaches	Up to 2,500 VPH for a single lane	45 MPH	No limit	No limit	Aprons should be included to accommodate large, heavy vehicles
Textured Pavement/ Crosswalks	Minor collector, local residential and local park	Up to 4 lane cross sections	Up to 10,000 ADT	45 MPH	No limit	No limit	Road Opening Permit Ordinance must be revised to include restoration
Road Closures	Local residential and local park	Two lane roads	Less than 3,500 ADT	35 MPH	No limit	No limit	This strategy should be considered in redevelopment areas or in new subdivisions
Traffic Signage & Markings	All	No limit	No limit	No limit	No limit	No limit	Low cost measures
Multi-way Stops	Minor collector, local residential and local park	Single lane approaches	500 VPH for an 8 hour period	40 MPH	No limit	No limit	Traffic calming is not the primary purpose
Speed Detector Signs	All	No limit	No limit	No limit	No limit	No limit	Must be implemented in conjunction with an enforcement program

4.7.4 Implementation Strategies

Prior to the installation of any traffic calming measure, the City must first establish the need for the traffic calming. Priority areas for traffic calming would include areas in the vicinity of schools, parks, local residential neighborhoods, train stations, bus station and bus stops. In addition, a pilot program should be considered at the requests a specific neighborhood(s).

The Police Department in cooperation with the City's Division of Engineering and the City's Division of City Planning should evaluate the existing traffic conditions in order to properly document the existing traffic patterns, volumes and speeds. This should include documentation of traffic counts, speed studies, signing, striping and roadway geometry. After the need for traffic calming has been established, a public meeting should be held with the residents in the affected neighborhood to explain the program and to solicit public input. After the meeting, the neighborhood should be polled for further input. Additionally, meetings should be held with emergency service providers to solicit their input.

When the need for the traffic calming has been defined, the City should implement a pilot program using low cost treatment, such as temporary speed humps, barrels/cones, barricades, etc. After the temporary traffic calming measures have been installed for a period of time (generally 6 months to one year), the Police Department in cooperation with the City's Division of Engineering and the City's Division of City Planning should reevaluate the effectiveness of the traffic calming device. A second meeting should be held with the resident to solicit post construction public input. A post-construction survey could be an effective way to solicit input and should be considered. If the City staff, the residents and the governing body determine that the traffic calming measures are effective, then the temporary treatments can be replaced with permanent measures.

Several important factors should be taken into consideration during the evaluation of a pilot program. The City should consider the adjacent neighborhoods. In some cases, it is recommended that the adjacent areas should be studied both pre and post installation of traffic calming measures, since often the installation of traffic calming measures only shift the problem to an adjacent street. Traffic calming measures often impact emergency response time; therefore, prior to considering any traffic calming measures, the City should meet with emergency service personnel to review the neighborhood concerns, the various traffic calming measures and the associated impacts of each measure. Finally, the installation of any traffic calming measure must be accompanied with a corresponding education and enforcement element, in order for these measures to be affective.

4.7.5 Funding Sources

The cost of traffic calming varies greatly depending on the traffic calming measure and the specific road characteristics. Traffic calming measures can be implemented as part of the City's annual capital improvement programs. Alternatively, traffic calming measures can be privately funded by developers when required in conjunction with site plan or subdivision approval. Finally, grants are available from the NJDOT under programs such as the Safe Routes to Schools and Local Aid to implement traffic calming measures.

4.8 Sidewalk Maintenance Plan

Sidewalks are an integral aspect of the circulation system. Sidewalks must be maintained and adequate provisions must be made in construction zones to accommodate pedestrians. Jersey City aims to preserve all sidewalks, in order to keep them safe and inviting. An adequate, well-maintained pedestrian network will provide access and enhance the transportation network for residents and visitors alike, thereby reducing vehicular congestion, increasing public transit ridership, and improving the quality of life. In addition, a well-maintained network of pedestrian sidewalks will increase connectivity throughout the City by offering users a number of different routes by which to reach their destination. These spaces should not be impeded nor closed for construction. Instead, they should be modified to fit the needs of all users.

Jersey City's Sidewalk Maintenance Plan was designed to follow current Americans with Disabilities Act (ADA) , ADA Guidelines for Buildings and Facilities (ADAAG), the U.S. Access Board issued Draft Public Rights-of-Way Accessibility Guidelines (PROWAG) dated November 23, 2005, and recommendations cited in Chapter 41 of New Jersey Department of Transportation (NJDOT) Pedestrian Design Guidelines. These sidewalk maintenance guidelines are superseded by any future revisions to ADA, ADAAG, and PROWAG guidelines that are more restrictive.

4.8.1 Pedestrian Facility Maintenance

For the safety of pedestrians and to preserve the quality of life, it is important to keep pedestrian facilities around the City well-maintained. The maintenance of pedestrian facilities, including sidewalk repairs, the removal of snow, ice, and water, and inspection, should be undertaken with regularity so that pedestrian paths can be accessed by all types of pedestrians, free of potential hazards, and adequately handle typical pedestrian volumes.

4.8.2 Sidewalk Repairs

Sidewalks should be kept in a state of good repair for the safety and accessibility of all of its users. Additionally, the City aims to maintain sidewalks in a structurally sound, aesthetically pleasing form. Therefore, the following guidelines should be applied to the City's sidewalks:

a) Sidewalks with breaks in vertical elevation of less than ¼ inch should be reviewed on a case by case basis. However, these sidewalks typically would not require replacement if this differential was the only sidewalk deficiency and the sidewalk was not recently installed. These areas should be monitored.

b) Tripping hazards with changes in vertical elevation of more than ¼ inch, should be repaired. All slabs should be replaced from joint to joint where feasible. Saw-cutting may be acceptable in some locations subject to the approval of the City Engineer's office.

c) Sidewalks with cross slopes greater than 2% should be replaced or reset.

d) Sidewalks with running slopes greater than 5% where the pedestrian access route exceeds the general grade of the roadway, should be replaced with the installation of a curb ramp that meets the required federal guidelines, or be reset to less than 5% running slope or to follow the general grade of the roadway.

e) Spalling sidewalk should be reviewed on a case-by-case basis, but typically would not require replacement. However, spalling sidewalk should be monitored for ponding water, which could be the cause of the spalling.

f) If ponding runoff is noted on the sidewalk, then the sidewalk should be repaired or reset to eliminate ponding. Ponding water can result in unsafe icing conditions and is an obstruction to pedestrians, which reduces sidewalk capacity and causes an unnecessary nuisance to its users.

g) Sidewalks with hairline cracks typically would not require replacement if this deficiency is the only sidewalk deficiency and the sidewalk was not recently installed. These areas should be monitored.

h) Sidewalks with cracks greater than ¼ inch should be repaired. All slabs should be replaced from joint to joint where feasible. Saw-cutting may be acceptable in some locations subject to the approval of the City Engineer's office.

i) Broken and chipped sidewalk should be reviewed on a case-by-case basis. If these deficiencies cause an unlevel traveling surface, tripping hazard or potential for ponding, then the sidewalk should be replaced from joint to joint where feasible. Saw-cutting may be acceptable in some locations subject to the approval of the City Engineer's office.

j) All sidewalk replacement should be in accordance with Ordinance requirements and should be in accordance with the City's Typical Concrete Sidewalk details.

4.8.3 Winter Season Maintenance Requirements

It is important that snow and ice are removed from pedestrian paths in a timely manner and stored in areas that will not impede pedestrian movement throughout the City. The following guidelines shall be followed when removing snow and ice from roadways and sidewalks:

a) Snow and ice that has been removed from streets, driveways, parking lots and sidewalks shall not block sidewalks or other pedestrian routes.

b) All intersections and access to pedestrian crosswalks shall be kept clear of snow and ice, which tend to accumulate in snow banks at the corners of intersections.

c) Ponding and icing should be prevented on sidewalks and intersections. Inlet grates and gutters should be kept clear of snow and ice to allow for adequate drainage of melting snow and ice. Pursuant to §296-1.1, Jersey City Code of Ordinances, all property owners, occupants or other person having charge of a residential building or vacant lot are required to clear snow and ice from the sidewalks and gutters to one foot outside the curb within eight hours after snow has fallen.

d) Where sidewalks pass through publicly-owned properties, the agency that owns the property is responsible for snow and ice removal.

4.8.4 Inspection

The inspection of pedestrian paths should be undertaken by the City periodically to check that all sidewalks are in a state of good repair. The frequency of these inspections shall be at the City's discretion. The City should develop a schedule to perform routine safety and ADA inspections of sidewalks. Additionally, for projects undertaken by private developers, sidewalks should be inspected prior to Certificates of Occupancy (CO) being issued and prior to performance bond release. Additionally, Temporary Certificates of Occupancy (TCO) should not be issued prior to a sidewalk deficiency being rectified. Lastly, for maintenance bond inspections, sidewalks should be inspected by the City or City's representative, and all sidewalk deficiencies corrected prior to maintenance bond release. The City should abide by a system of tracking all maintenance bond inspections, so that maintenance bonds do not expire prior to inspections being performed.

4.8.5 Pedestrian Facilities in Work Zones

The safety of sidewalks abutting and within work zones is an important aspect of sidewalk maintenance in Jersey City. When a modification in pedestrian facilities is necessary as a result of construction activities, the following guidelines should be followed to provide safe and adequate pedestrian access around the project site.

4.8.5.1 Informational Needs

When a modified pedestrian route is necessary as a result of construction, it is important to provide pedestrians with adequate information to ensure that they are able to follow modified pedestrian routes safely and with little difficulty. Specifically, the following information should be provided in the event that a pedestrian path will be modified:

a) Advance information for detours, bypasses, and sidewalk/path blockages.

b) If blockages are necessary due to construction activities, information regarding the provision of alternate routes should be provided.

c) Signage should be as specific as possible with regard to directing pedestrians along alternate routes.

d) Mechanisms should be provided to alert and adequately notify groups with special limitations (e.g., blind, deaf, disabled) of a change in pedestrian paths.

4.8.5.2 Channelization

In the event that a pedestrian path will require modification due to ongoing construction a proper transition to the modified path should be provided that is channeled using proper barriers such as cones, marking tape, barricades, ropes or chains, or wood railings, and meets the ADA, ADAAG, and PROWAG widths and maximum grade requirements. The duration of the project and potential use by groups with special limitations should be considered to determine that the proper barriers are being used. Lastly, in the case of a bypass or detour, adequate signage should be provided to direct pedestrians back to the original path, and adequate barriers should be provided.

4.8.5.3 Modified Path Design Considerations

Modified pedestrian paths should provide adequate safety, accessibility, and capacity for all users. Therefore, the following shall be followed:

a) Changes in pedestrian facilities should take into account the origins, destinations, and routes of its users. Where feasible, pedestrian paths should be modified to have a minimal impact on the most heavily used pedestrian paths.

b) Pedestrians will take the shortest route wherever possible. For pedestrian safety, the modification of pedestrian facilities should make it difficult or impossible to walk outside of the designated alternative pedestrian paths by utilizing physical barriers such as barricades, providing a safe, direct and convenient alternative access route to minimize the possibility of a pedestrian deviating from the route, and providing adequate signage to inform pedestrians of alternate access routes.

c) Night time use of the modified facilities should be considered with respect to pedestrian safety and security. Adequate lighting should be provided.

d) Storage of construction materials, construction equipment, and waste should be pre-designated outside of the pedestrian route.

e) If it appears no modified pedestrian route can be provided during construction, undertaking construction in stages should be considered in order to provide a pedestrian route. For an example, a detour can be provided to divert pedestrian traffic to the other side of the street where an alternate sidewalk or pedestrian path is available. Alternatively, pedestrian traffic can be diverted to a planting strip, where available, or onto the curb lane, as long as an adequate barrier is provided to protect pedestrians from vehicular traffic.

f) An adequate barrier should be provided which blocks access to the original pedestrian path, to make sure that pedestrians use the modified pedestrian path.

g) The pedestrian route should have clearly defined boundaries and be able to adequately handle current pedestrian volumes and meet ADA, ADAAG, and PROWAG requirements;

h) The walkway surface should be constructed of a rigid, stabilized material that is even, free of wide cracks, holes, and other potential obstructions. The material should be a non-slip surface.

i) There should be periodic inspection of the construction site to determine that changes in construction have not blocked the modified path;

j) Slopes, widths, and vertical clearances should meet all applicable regulations.

k) Adequate drainage should be provided so that ponding does not occur on the modified pedestrian path, and adequate space for snow and ice removal and

storage should be provided if construction is to take place during the winter months.

l) Proper channeling from modified pedestrian paths to the crosswalk should be provided. If it is necessary to alter the crosswalk as part of construction, the new crosswalk shall be clearly delineated, and old crosswalk markings should be completely invisible. In some instances, Pedestrian crossing signs, may be necessary, to alert motorists to unexpected pedestrian crossing and altered traffic signal timing, if necessary, to provide pedestrians an adequate amount of time to safely cross an intersection.

4.8.6 Funding and Responsible Entities

Funding to implement necessary changes in pedestrian paths as a result of ongoing construction shall be provided by the contractor, developer, or property owner of the construction project requiring the alteration of the pedestrian path in question. When an excavation undertaken by a property owner or utility company causes the necessity for sidewalk repairs, the cost of the sidewalk repairs and shall be the responsibility of the property owner or utility company. The costs for routine sidewalk repairs are the responsibility of the abutting property owner, except in the case of a capital project where the project design results in the sidewalk being removed and replaced, in which case the funding for the project would be the responsibility of Jersey City.

In many cases, escrow accounts for specific private projects will be available for inspection of sidewalks. In the case of a capital project, the sidewalk inspection would be included in the capital budget for the project. The routine sidewalk inspections that are not relative to a construction project, should be planned for by the City of Jersey City in their annual budget.

Sidewalk maintenance is paramount for the safety of Jersey City's sidewalk users, and Jersey City is committed to maintaining and preserving this critical aspect of their circulation system.

5. CONCLUSIONS

The Circulation Plan Element helps Jersey City address current needs and prepares Jersey City for growth through 2050. The Plan gathered feedback from all of its stakeholders through the 2050 Mobility Survey, Focus Group, Visioning Session, and Public Meetings, and the City incorporated that feedback into all aspects of its Plan. The City created a Technical Advisory Committee (TAC) consisting of various State, County, and local agencies which play a role in Jersey City's transportation infrastructure, and the TAC vetted all aspects of the Plan. The result is an action-oriented Circulation Plan Element for the short, medium, and long terms that addresses the needs of the multi-modal system and facilitates the movement of people and goods safely and efficiently. The Plan develops a Vision for a transformed world-class center served by a multi-modal transportation system that is attractive, clean, safe, efficient, reliable, inclusive, affordable, accessible, and user-friendly. This Vision focuses on travel to, from, and within Jersey City, for bikes, pedestrians, vehicles, buses, ferries, rails, and all mass transit carriers. The Plan addresses the needs of all of its users, and emphasizes alternatives to the automobile.

Goals, Objectives, Strategies, and Actions were established based on feedback from the public and the TAC, and from recommendations cited in various studies performed in Jersey City and throughout the region. The Action plan identifies timeframes for the Actions, as well as potential lead implementation agencies, ranges of costs, and possible funding sources. Indicators and Targets are provided for the City to measure its success in attaining the Goals, Objectives, and Strategies, as well as Baselines to use for comparison purposes. The Plan recognizes how the City will grow, and addresses how the Circulation system will address this growth. The Plan identifies potential right-of-way needs to accommodate anticipated redevelopment. A Jersey City Functional Classification System is established which enables the City to apply Typical Roadway sections which maximize the use of existing and future streets for all of its users. The Plan also provides guidelines for Traffic Calming measures, and provisions for sidewalk maintenance.

The Circulation Plan Element relates directly to the land use plan and corresponding development and redevelopment objectives and strategies of the City. It is the purpose of this Plan to address current mobility needs and to prepare the City's transportation system for growth through 2050, and to enable Jersey City to achieve its vision.

5.1 How Circulation Element Will Address Growth and Circulation Issues

The Circulation Element will address growth by identifying rights-of-way that need to be secured and recommending improvements to the transportation infrastructure for all aspects of the multi-modal system. Circulation will also be addressed by revising the existing and future roadway layouts to accommodate all users in order to provide connectivity for all modes of travel. Ultimately, this Circulation Element will address the sustainability of mass transit, roads and highways, and bicycle and pedestrian modes of transportation.

5.1.1 Mass Transit

In Jersey City, mass transit is made up of buses, passenger rail, HBLR, ferries, and other private carriers such as taxis and jitneys. The plan recommends multiple actions to improve mass transit circulation both within Jersey City to improve neighborhood connectivity, and throughout the region, for all of its users. There are multiple Actions that include new studies, actions from previous studies of the Jersey City and the Region, upgrades to existing stations, accessibility issues, easier transfers, efficiency of service, hours of operation, number of stations, neighborhood and regional connectivity, provisions for bikes at stations and on mass transit

vehicles, and expansion of mass transit service. The plan identifies rights-of-way to be preserved to facilitate many of these actions.

5.1.2 Roadways

The Circulation Element identifies rights-of-way needed for new street grids, roadway extensions, and transportation infrastructure improvements. These new streets and projects will serve development and redevelopment projects, provide relief to congestion on local streets, and provide better connectivity within Jersey City and to and from the region. The Circulation Element recommends multiple actions to enable the existing and future roadway and highway system to accommodate all of its users, relieve congestion, and facilitate the movement of goods and services. The Circulation Element also addresses maintenance of transportation infrastructure, changes to the roadway system including major interchange improvements, sophisticated traffic signal systems, bus preemption and bus priority on roadways. The Circulation Element establishes a Jersey City Functional Classification System, that can be used in conjunction with Typical Roadway Sections to maximize the use of the existing and future roadways to accommodate all users, including pedestrians, bicycles, and vehicles. The Circulation Element has provisions for traffic calming, and addresses sidewalk maintenance.

5.1.3 Freight

Much of the freight improvements in the plan are Actions to implement regional projects, and recommendations from other studies of Jersey City and the region. These recommendations include but are not limited to, the diversion of through trucks from a multi-use urban boulevard along the Route 440 and Route 1&9 T corridor between the Bayonne border and Route 7, the completion of the Portway projects, and the support of efforts by PANYNJ, NJDOT, NJTPA and other entities to advance capacity expansion within existing port lands, as well as port improvement efforts. These port improvement efforts include but are not limited to increasing the vertical clearances of the two rail tunnels that connect New Jersey to the North American rail system, and channel dredging.

5.1.4 Bicycle and Pedestrian Circulation

The plan identifies multiple improvements for bicycle and pedestrian circulation. The plan creates Typical Roadway Sections which include bike lanes and wide sidewalks with street amenities. The Traffic Calming Plan provides a framework for the installation of traffic calming devices, where applicable, citywide. The Plan recommends multiple Goals, Objectives, Strategies, and Actions, that advance bike and pedestrian circulation. These Actions include but are not limited to: accommodations for bikes at mass transit stations and on mass transit vehicles, bike incentive programs, accessibility upgrades throughout the circulation system, pedestrian walkways for access to mass transit, completion of the waterfront walkways, construction of the 6th Street embankment linear path and Jersey Avenue extension with bike and pedestrian accommodations, and completion of the East Coast Greenway Route. The plan also addresses sidewalk maintenance and traffic calming that make the City streets a safer place for bikes and pedestrians.

5.2 Plan Implementation

The Circulation Plan Element should provide guidance for all new projects in Jersey City. The Typical Roadway Sections should be incorporated into capital improvement projects. The Land Development Ordinance should be updated to adopt the applicable recommendations of the Circulation Plan Element so that future development and redevelopment design

roadway layouts in accordance with the Typical Sections. Site plan and subdivision applications should be reviewed for consistency with this plan.

A committee comprised of representatives from appropriate Jersey City departments, divisions, and agencies should be formed to advance the actions described in the Circulation Element. This committee should prioritize the actions in the Circulation Element, identify and secure funding for transportation projects, develop transportation-related policy, and monitor the attainment of the goals of Circulation Element using the Indicators described in the Circulation Element.

Funding should be secured to advance projects, policies, and studies for which Jersey City is identified as the Lead Implementation Agency. Jersey City should work with all agencies identified in the Action Plan to advance other projects, policies, and studies. Jersey City should monitor its progress in the attainment of its Goals, by tracking the Indicators and Targets.

By implementing the Circulation Plan Element, the multi-modal system will be prepared for growth as Jersey City becomes a bustling, world-class center, and Jersey City will be served by a multi-modal transportation system that is attractive, clean, safe, efficient, reliable, inclusive, affordable, accessible, and user-friendly.

Photo Source: Jersey City Division of City Planning

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Zoning Map, dated January 28, 2009, and all Redevelopment Plans identified in the legend of the Zoning Map were reviewed.