SOUTHEAST STRATEGIC TRANSPORTATION VISION

BALTIMORE CITY, MD

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I. EXECUTIVE SUMMARY

Under the current Transportation Impact Study legislation, the Baltimore City Department of Transportation requires the development of a strategic plan for each of the identified mitigation zones to guide investment of development fees over the next five years (2015-2020). The purpose of this report is to:

1. Summarize previous studies in the Southeast area.
2. Summarize improvements to the transportation network implemented since the 2007 Southeast Transportation Plan.
3. Identify economic development activity through expected land use changes including new and redevelopment locations, development programs, densities, mix of uses and timelines.
4. Document existing transportation network conditions, specifically intersection vehicle level of service.
5. Project new multi-modal travel demand generated by land use changes including vehicle trips, as well as walking, bicycle and transit trips.
6. Develop holistic and integrated recommendations to improve all modes of travel, and identify specific corridors for selecting final alternatives and implementation.

Since the first Southeast Transportation Plan in 2007, which then forecasted 10 million square feet of new development resulting in over 20,000 new vehicles on the roadways during rush hour, the City has invested over $15 million and completed over a dozen transportation improvements, to alleviate projected worsened congestion throughout the study area.

While the 2008-2012 economic down-turn slowed some of the market absorption of the previous projections, the development forecasts remain robust in Southeast. **The City's Econ View identifies over 35 individual development projects in various planning or permitting stages, adding 12.5 million square feet of new development, and potentially yielding over 20,000 new vehicles to roadways in the Southeast area during rush hour.**

Several corridors in the study area currently experience severe traffic congestion during rush hour, with multiple failing intersections, including: President Street, Eastern Avenue, Boston Street, Central Avenue, Fayette Street and Aliceanna Street.

The existing roadway network as currently configured will not be able to fully accommodate future development-generated vehicle traffic volumes. Although the Southeast area provides an extensive walking, biking and transit network including bus, rail, and water taxi, more improvements are needed to fully leverage non-single occupancy vehicle modes.

Recommendations developed in this report include targeted capacity enhancements for walking, biking, transit, passenger vehicles and freight; traffic operations strategies to better manage traffic flow; improved inter-modal connections and policy initiatives to increase the existing and future travel share by modes other than private passenger vehicle. By investing in these strategies the City will be able to

successfully attract new residents, visitors and workers, and provide seamless and reliable travel options that do not depend on owning a car.

These high level strategies may include:

- Improving street network connectivity through new links including the Central Avenue bridge extension, Brewer's Hill north-south connecter and Boston-Broening Connector
- Employ traffic management strategies including curbside management, signal timing, and deployment of Traffic Enforcement Officers
- Establish short, circulating transit routes with State partners (MTA), private partners and City services
- Establishing Bus Transit Priority Corridors through transit signal timing priority, queue jumps, limited stop service, and off-board fare payment along key corridors
- Expand the bicycle network through protected lane treatments, and other infrastructure treatments
- Establish transportation hubs in Harbor East, Johns Hopkins Hospital, Highlandtown and Canton where improved bus, water taxi, bicycle and park and ride connections can be established
- Establish a formal Transportation Management Association to facilitate employer/ employee programs and incentives such as ride shares, bike shares, subsidized transit passes, parking and ride shuttles, guaranteed ride home

In order to implement these multi-modal recommendations on a corridor level, and establish modal priorities within each corridor, it is recommended that strategies for **Fleet Street, Aliceanna Street and Eastern Avenue** be analyzed in more detail and reconfigurations to accommodate designated bus lanes or bike lanes be considered.

II. Study Area

The Southeast area of Baltimore City is geographically defined through the Traffic Mitigation Legislation and is bounded by Orleans Street/Pulaski Highway/Lombard Street to the north, President Street/I-83 to the west, Broening Highway/I-95 to the east, and Keith Avenue to the south. An area map identifying all of the neighborhoods within Southeast is shown in **Figure 1**. Council District 1 is primarily represented in this study area, along with portions of Council Districts 2, 12 and 13 as shown in **Figure 2**. State legislative districts are also shown in Figure 2. The impact of surrounding corridors on the Southeast was considered as part of development of the strategic transportation vision.

The Southeast is a broad area lying directly east of Baltimore's central business district that houses a mix of commercial, residential, institutional, and industrial development. The area closest to the Inner Harbor, commonly referred to as Harbor East, has experienced a boom in new development in recent years. Commercial uses – office, hotel and retail – dominate the landscape in this area. Dense residential development is also prevalent further east and north of the waterfront, including the neighborhoods of Little Italy, Fells Point, Canton, Butchers Hill, Brewers Hill, and Greektown. The northeastern end of the study area is comprised mostly of the Johns Hopkins Bayview Medical Center, and commercial and industrial uses. The southeastern end of the study area is primarily industrial as the Port of Baltimore is located immediately outside the study area.

Figure 1. Study Area Boundaries.

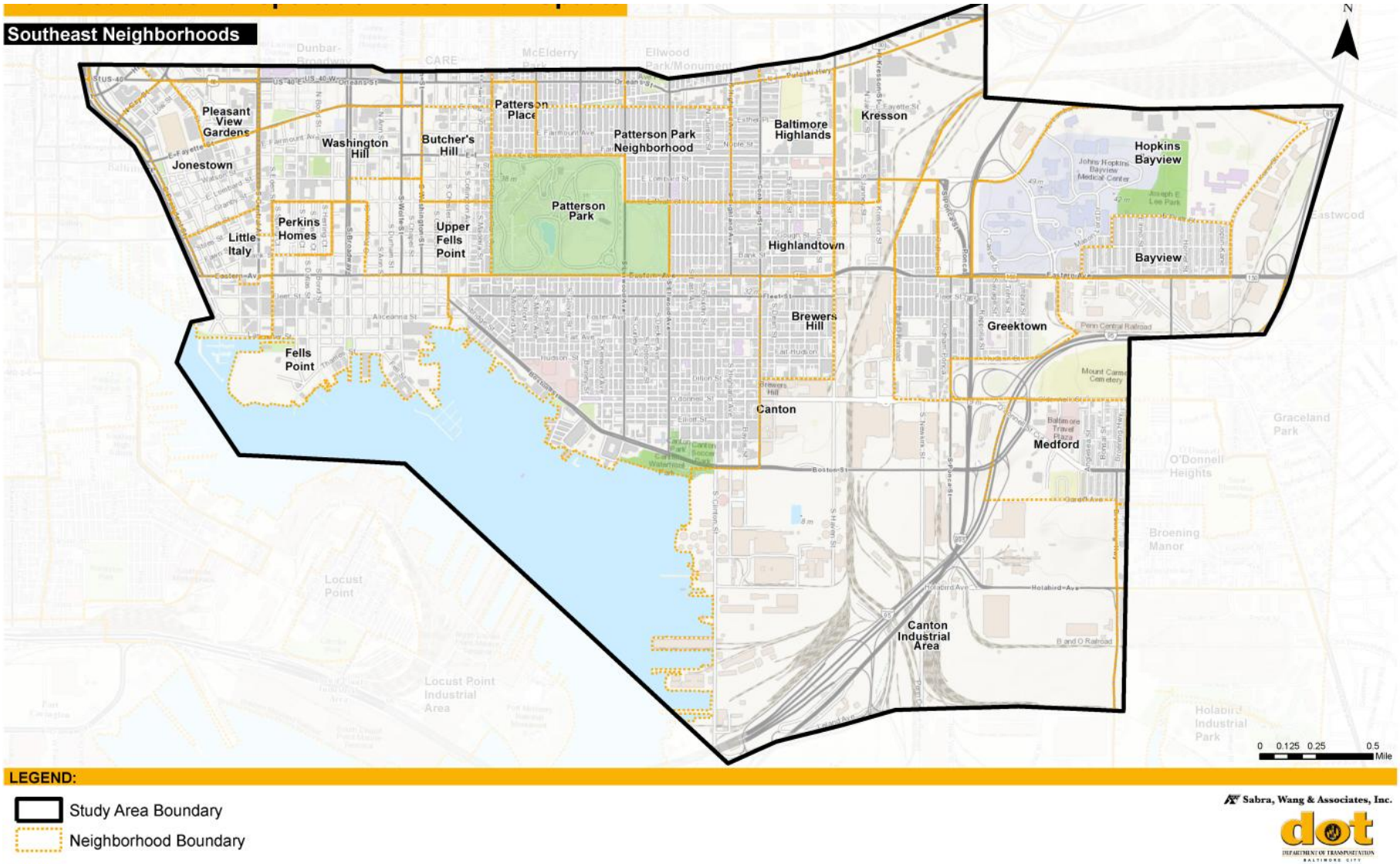
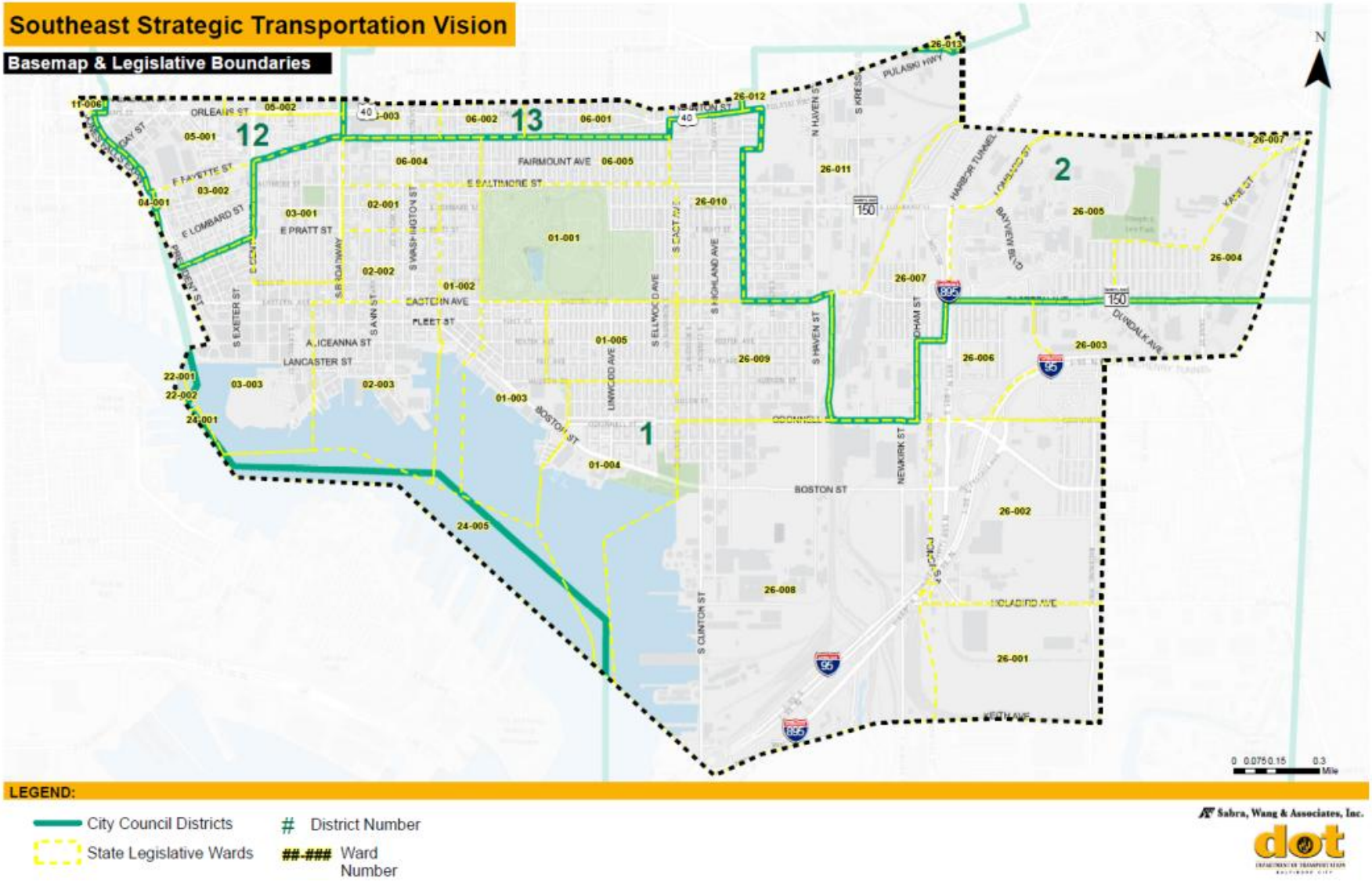


Figure 2. Legislative Districts



III. Previous Studies and Improvements

Over the past seven years, numerous transportation studies have been completed in the Southeast area. These include the following:

1) Southeast Transportation Study, 2007: This study evaluated projected development in Southeast, existing traffic conditions, future projected vehicle trips and an assessment of the ability of the roadway network to accommodate new development. Identified multi-modal transportation improvements to enhance capacity and provide improved mobility.
2) Brewers Hill PUD Traffic Impact Study, 2008: This Traffic Impact Study included existing conditions, future conditions with project build out, and recommendations for mitigating site traffic.
3) Harbor Point Traffic Impact Study, 2008: This Traffic Impact Study included existing conditions, future conditions with project build out, and recommendations for mitigating site traffic.
4) Southeast Complete Streets Plan, 2012: Description of, and implementation for, integrating high-quality pedestrian, cycling and transit infrastructure into the roadway network though out the Southeast neighborhoods.
5) Harbor Point Traffic Study, 2013: This Traffic Study focused on the proposed internal public street infrastructure, and connections to the existing City street network, included existing conditions, future conditions with project build out, and recommendations for mitigating site traffic.
6) Whole Foods Relocation to Central Ave Traffic Operations Study, 2014: Evaluation of site access and circulation, between Lancaster Street and Aliceanna Streets, and impacts to Central Avenue and Caroline Streets.
7) BJ's Wholesale Traffic Study, 2015: Evaluation of site access and circulation included existing conditions, future conditions and recommendations for mitigating site traffic.

IV. 2007-2015 Infrastructure Investments

Since 2007, the following transportation improvements shown below and illustrated in **Figure 3** have been implemented by the Baltimore City Department of Transportation and the Maryland Transit Administration:

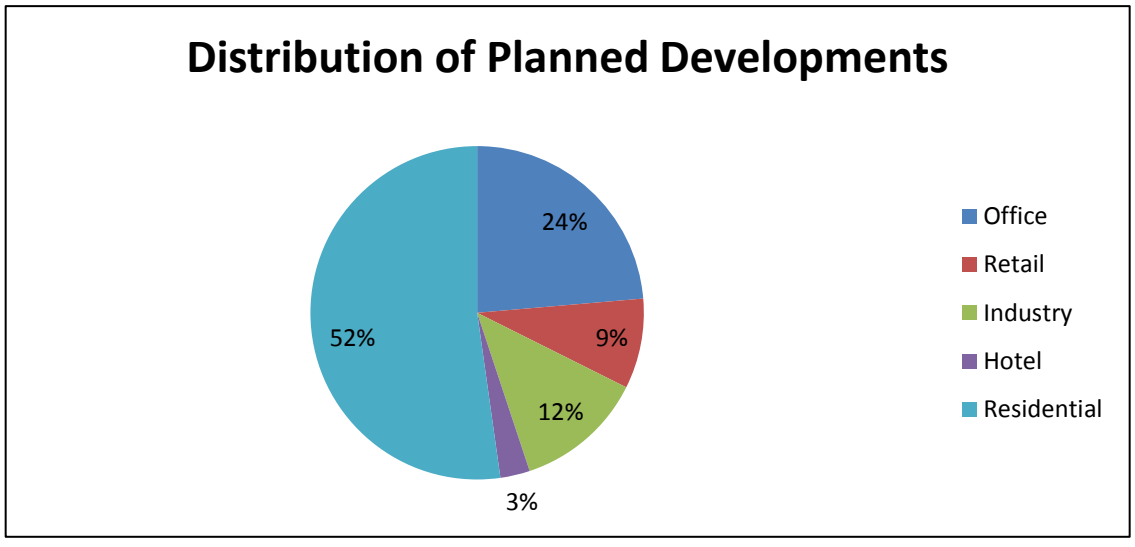
1) Upgrade of Central Avenue to 4 lanes from Fayette Street to Aliceanna Street
2) Intersection improvements at:
    a. Boston Street at Clinton Street
    b. Boston Street at Ponca Street
    c. Conkling Street at O'Donnell Street
    d. O'Donnell Street at Interstate Avenue
    e. O'Donnell Street at Ponca Street
3) Implementation of Harbor Connector water taxi system (200,000 trips per year)
4) Implementation of Green and Orange Charm City Circulator routes (80,000 trips per year)
5) Implementation of 20.5 lane miles signed and marked bicycle routes through Harbor East, Fells Point, Canton, and Greektown

6) Installation of over 100 new bicycle racks for parking
7) Provision of Zipcar parking at the Canton waterfront
8) Upgrade of select bus stops with new shelters and benches
9) Traffic signal installation (Boston Street and Haven Street)
10) New bus service enhancements by the Maryland Transit Administration:
    a. No. 26 Line: The new service will originate downtown at Fayette and Charles Streets and travel to Dundalk Marine Terminal with a stop at the Amazon Distribution Center on Broening Highway, which will employ more than 1,000 people.
    b. No. 31 Line: The new service will originate from State Center Metro to the Community College of Baltimore County (CCBC)-Dundalk with a stop at the Shops at Canton Crossing

V. Economic Development Activity/ Land Use Forecasts (2015-2020)

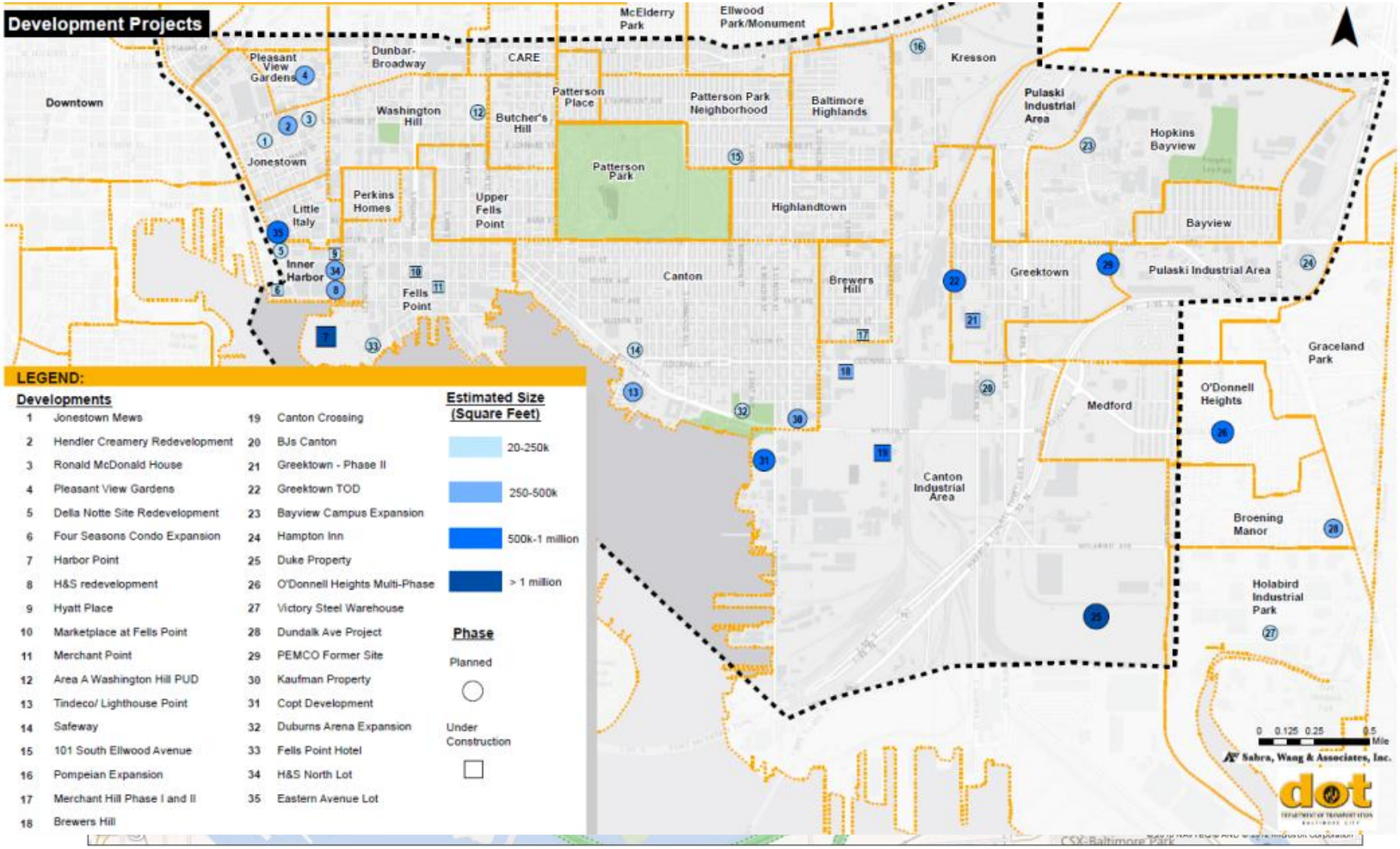
Future economic development is expected throughout the study area, and this growth will result in increased demand for travel across all modes. **Table 1** lists the identified developments slated for completion within the next five years. The list was compiled using the City's Econ View database, and supplemented through conversations with the Department of Planning, the Downtown Partnership, Waterfront Partnership, Baltimore Development Corporation and Council Members. Over 35 unique projects were identified totaling over 12,500,000 square feet in new and redevelopment. The total development includes over 6,500 new residential dwelling units, 1,000 hotel rooms, 2,300,000 square feet of office, 1,000,000 square feet of retail and 1,500,000 square feet of industrial space. The table includes the location, type, and size of development. **Figure 4** illustrates the distribution of planned development by land use type, and **Figure 5** illustrates the location of each of the planned developments.

Figure 4.



Project Name	Address	Project Type	Description	Phase	Residential Units	Res. Type	Rooms Hotel	Parking Spaces	Res1_Type	CSYear	CSSeason	CCYear	CCSeason	Office (Sq Ft)	Retail (Sq Ft)	Industry (Sq Ft)	Hotel (Sq Ft)
Jonestown Mews	921-923 E. Baltimore Street	Residential	Conversion of historic building for market rate apartments.	Planned	21	Rental	0	No Data	Multiple Family	-	-	2015	Winter	0	0	0	0
Hendler Creamery Redevelopment	1100 E Baltimore Street	Mixed-Use	Historic redevelopment of the former Hendler Creamery building and adjacent properties into a 276 unit residential development with ground floor retail.	Planned	276	Rental	0	No Data	Multiple Family	-	-	-	-	0	15,000	0	0
Ronald McDonald House	1200 East Baltimore Street Baltimore, MD 21202	Institutional	The Ronald McDonald House is planning to construct a new house in the historic Jonestown Neighborhood that will provide visiting families to Johns Hopkins Hospital, University of Maryland Medical Center, and other area hospitals. The house will include 55 new rooms, over a 50% increase over their current location.	Planned	55	Temporary Housing	0	No Data	Multiple Family	-	-	-	-	0	0	0	0
Pleasant View Gardens	201 N Aisquith Street Baltimore Maryland 21202	Residential	Rehabilitation of family public housing	Planned	311	Rental	0	0	Multiple Family	2015	Spring	2016	Spring	0	0	0	0
Della Notte Site Redevelopment	801 Eastern Ave, Baltimore, MD 21202	Mixed-Use	Proposed 16-story apartment tower with ground floor retail on the site of the former Della Notte Restaurant in Little Italy	Planned	150	Rental	0	No Data	Multiple Family	-	-	-	-	0	5,000	0	0
Four Seasons Condo Expansion	100 International Drive	Residential	Addition of up to eight additional floors to the existing Four Seasons Hotel to include luxury condominium units	Under Construction	80	For Sale	0	No Data	Multiple Family	-	-	2015	-	0	0	0	0
Harbor Point	1100 Wills Street	Mixed-Use	master planned unit development (1,400,000 SF office, 914 dwelling units, 250 hotel rooms, 196,000 SF retail)	Under Construction	914	Rental	250	750	Multiple Family	2014	-	2025	Fall	1,400,000	196,000	0	0
H&S redevelopment	S Central Ave / Aliceanna St S Eden St / Lancaster St	Mixed-Use	30,000 SF Whole Foods, 250 condos, 50,000 SF Office	Planned	250	For Sale	0	No Data	Multiple Family	-	-	-	-	50,000	30,000	0	0
Hyatt Place	511 South Central Ave	Hotel	Hotel - 8 story mixed-use building - retail, hotel, parking	Completed	0	N/A	280	60	N/A	2014	-	0	-	0	14,200	0	154,000
Marketplace at Fells Point	South Broadway/Fleet Street	Mixed-Use	The Dolben Company, Inc. and Klein Enterprises have partnered together to co-develop 159 new apartments in Baltimore and 28,000 square feet of retail space. The historic public comfort station has been rehabilitated to house non-profit office space.	Under Construction	159	Rental	0	0	Multiple Family	2012	-	2015	-	0	28,000	0	0
Merchant Point	700-26 S Ann St	Residential	Phase 1 - New construction of 8 townhouses. (Aliceanna) Phase II - Rehabilitation of the Four Bay House into 1 Townhouse. (Aliceanna) Phase III - New construction of 3 townhouses (Aliceanna) Phase IV - New construction of 8 townhouses (S Regester)	Under Construction	19	For Sale	0	61	Single Family	2011	-	0	-	0	0	0	0
Area A Washington Hill PUD	1 North Wolfe Street	Residential	New Construction of 210 apts at Gateway within the Washington Hill PUD	Planned	210	Rental	0	310	Multiple Family	-	-	-	-	0	0	0	0
Tindeco/ Lighthouse Point	Boston Street/ Lakewood Avenue	Mixed-Use	250 condos	Planned	250	For Sale	0	No Data	Multiple Family	-	-	-	-	0	0	0	0
Safeway	Boston Street/ Lakewood Avenue	Mixed-Use	redevelopment 150 apartments, 50,000 SF office	Planned	150	Rental	0	No Data	Multiple Family	-	-	-	-	50,000	0	0	0
101 South Ellwood Avenue	101 South Ellwood	Residential	175 apartments	Planned	175	Rental	0	No Data	Multiple Family	-	-	-	-	0	0	0	0
Pompeian Expansion	4201 Pulaksi Highway Baltimore, MD 21224	Industrial	Expansion of Pompeian's existing facility at 4201 Pulaski Highway to include a 40,000-square foot warehouse expansion to the rear.	Planned	0	N/A	0	No Data	N/A	-	-	-	-	0	0	40,000	0
Merchant Hill Phase I and II	3800 Dillon St	Residential	Luxury newly constructed townhomes.	Under Construction	46	For Sale	0	14	Single Family	-	-	-	-	0	0	0	0
Brewers Hill	O'donnell Street / S Conkling Street	Mixed-Use	remaining buildout of 250K office	Under Construction	0	N/A	0	No Data	N/A	-	-	-	-	250,000	0	0	0
Canton Crossing	Boston Street / S Clinton Street	Mixed-Use	remaining buildout of 250K retail/ 250K office	Under Construction	0	N/A	0	No Data	N/A	-	-	-	-	250,000	250,000	0	0
BJs Canton	S Newkirk St/ Boston O'donnell St/ Ponca St	Mixed-Use	3000 SF Taco Bell, 89,000 BJs wholesale club, 12 gas pumps	Planned	0	N/A	0	No Data	N/A	-	-	-	-	0	92,000	0	0
Greektown - Phase II	820 Oldham Street	Residential	Demolish existing structures and construct single-family townhomes within the Greektown PUD.	Under Construction	177	For Sale	0	No Data	Single Family	2013	-	-	-	0	0	0	0
Greektown TOD	Foster Ave	Mixed-Use	200K office, 100K retail, 100 room hotel, 300 apartments	Planned	300	Rental	100	No Data	Multiple Family	-	-	-	-	200,000	100,000	0	55,000
Bayview Campus Expansion	E. Lombard Street / Bayview Boulevard	Office	100,000 SF research and development	Planned	0	N/A	0	No Data	N/A	-	-	-	-	100,000	0	0	0
Hampton Inn	6571 Eastern Ave	Hotel	Construct 112 Room Hampton Inn and Suites hotel	Planned	0	N/A	112	No Data	N/A	-	-	-	-	0	0	0	61,600
Duke Property	Holabird Avenue / Dundalk Avenue	Warehouse	remaining buildout of 1,500,000 SF warehouse	Planned	0	N/A	0	No Data	N/A	-	-	-	-	0	0	1,500,000	0
O'Donnell Heights Multi-Phase Redevelopment	Boston Street/ O'Donnell Street Dundalk/ Gusryan	Residential	925 Townhomes	Planned	925	Rental	0	No Data	Multiple Family	2010	Spring	2019	Spring	0	0	0	0
Victory Steel Warehouse	6320 Beckley Street	Warehouse	1 Story, 22,800 SF warehouse building	Planned	0	N/A	0	No Data	N/A	-	-	-	-	0	0	22,800	0
Dundalke Avenue Project	Holabird/ Dundalk	Residential	250 Apartments	Planned	250	Rental	0	No Data	Multiple Family	-	-	-	-	0	0	0	0
PEMCO Former Site	5601 Eastern Ave	Mixed-Use	60K grocery, 150K retail, 100 room hotel, 250 apartments, 250K office	Planned	250	Rental	100	No Data	Multiple Family	-	-	-	-	250,000	210,000	0	35,000
Kaufman Property	Boston/ Highland/ Bayliss	Mixed-Use	250 apartments, 50K office	Planned	250	Rental	0	No Data	Multiple Family	-	-	-	-	50,000	0	0	0
Copt Development	Clinton South of Boston	Mixed-Use	500 Dwelling units, 100K retail, 250K office	Planned	500	Rental	0	No Data	Multiple Family	-	-	-	-	250,000	100,000	0	0
Duburns Arena Expansion	Boston/ Ellwood	Event	5,000 additional seats	Planned	0	N/A	0	No Data	N/A	-	-	-	-	0	0	0	0
Fells Point Hotel	Thames/ Lancaster	Hotel	150 room hotel	Planned	0	N/A	150	No Data	N/A	-	-	-	-	0	0	0	52,500
H&S North Lot	Aliceanna/ Fleet Central /Eden	Mixed-Use	300 apartments, 50K retail, 100K office	Planned	300	Rental	0	No Data	Multiple Family	-	-	-	-	100,000	50,000	0	0
Eastern Avenue Lot	Eastern/ President/ Fawn	Residential	500 apartments	Planned	500	Rental	0	No Data	Multiple Family	-	-	-	-	0	0	0	0
				Total	6,518	-	992	-	-	-	-	-	-	2,950,000	1,090,200	1,562,800	358,100

Figure 5. Forecasted Economic Development Activity Locations



VI. Existing Transportation Network

The study area is an urban setting that is served by a multimodal transportation system including roadways, bicycle routes, sidewalks and transit services.

A. Walking and Biking Network

Southeast Baltimore has a fully developed network of sidewalks providing pedestrian connectivity throughout the study area. Several designated bicycle routes traverse the Southeast Baltimore area totaling over 20 lane miles of signed routes, designated on-road bike lanes and multi-use paths. The area's bicycle network is illustrated in **Figure 6**.

B. Transit

Several operators are involved in the Southeast transit system. The City of Baltimore operates two Charm City Circulator bus routes in the area (Orange and Green routes. Two water-based transit services exist, including a privately operated water taxi (fee service) for visitors and residents, as well as the City-operated Harbor Connector (free commuter service). **Figure 7** illustrates the network of City operated transit in the area. The Maryland Transit Administration (MTA) operates the Metro Subway which serves the Southeast area at the Shot Tower and Johns Hopkins Hospital stations. The Metro serves 6,400 daily riders at the two stations serving the study area. The MTA also operates local bus routes, including the lines number 7 (Mondawmin to Canton), 10 (Catonsville to Dundalk), 13 (Walbrook Junction to Canton) 21 (Mondawmin to Fells Point), 22 (Mondawmin to Bayview), 23 / 40 (Rolling Road to Essex local and exprss), 26 (Downtown to Dundalk), 31 (State Center to Dundalk) that traverse the Southeast along major roadways including Orleans Street, Fayette Street, Eastern Avenue, Boston Street, Wolfe Street, Washington Street, East Avenue, and Ponca Street – as illustrated in **Figure 8**. These routes carry a combined 65,600 passengers per day, with a significant percentage of trips originating from or destined to one of the 330 bus stops in the Southeast area. In addition, several private transit operators, such as Johns Hopkins University and Johns Hopkins Hospital serve the study area to provide travel options for their employees, students and patients.

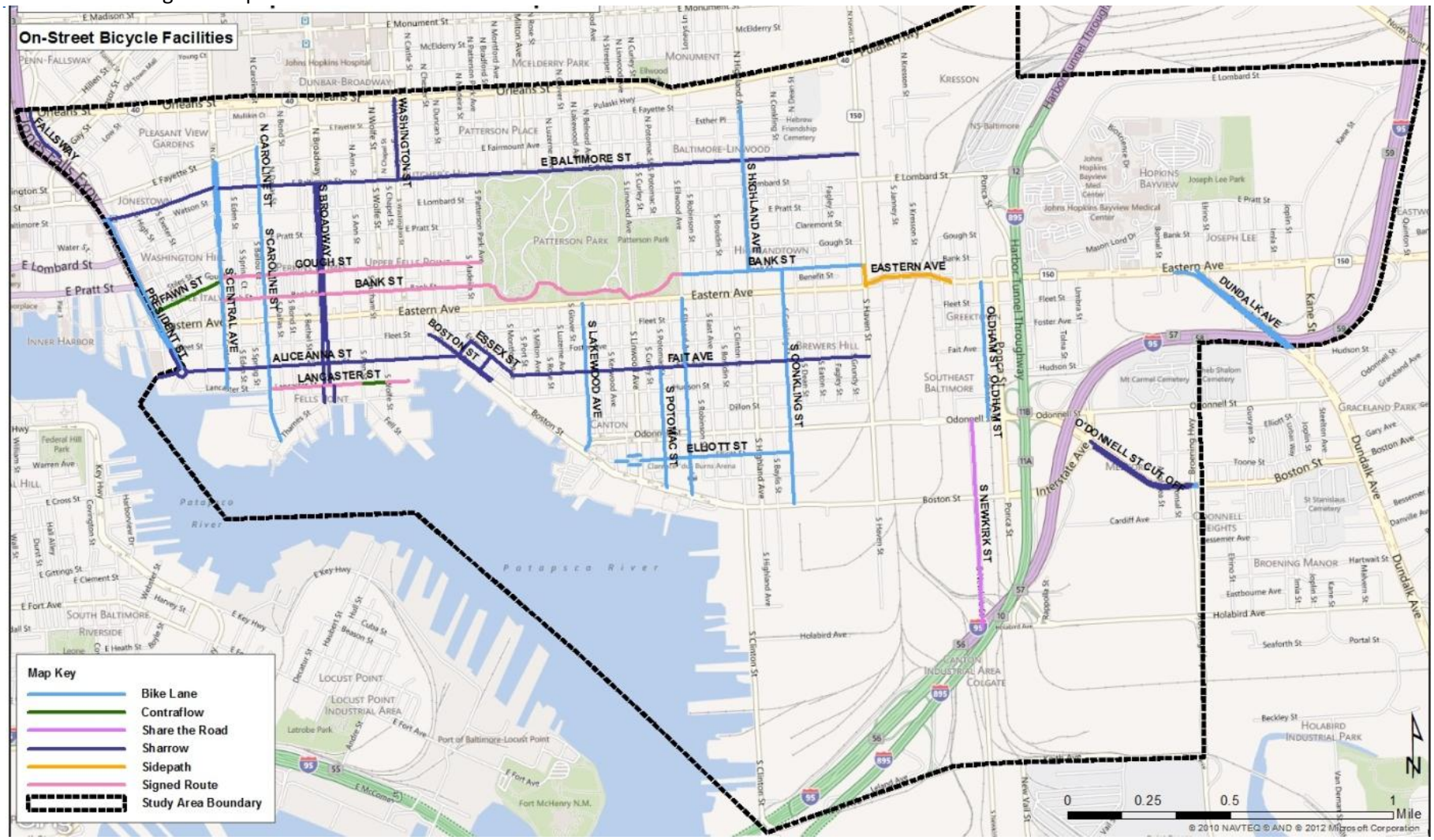


Figure 6. Southeast Baltimore Bicycle Network.

Figure 7. City Operated Transit Services

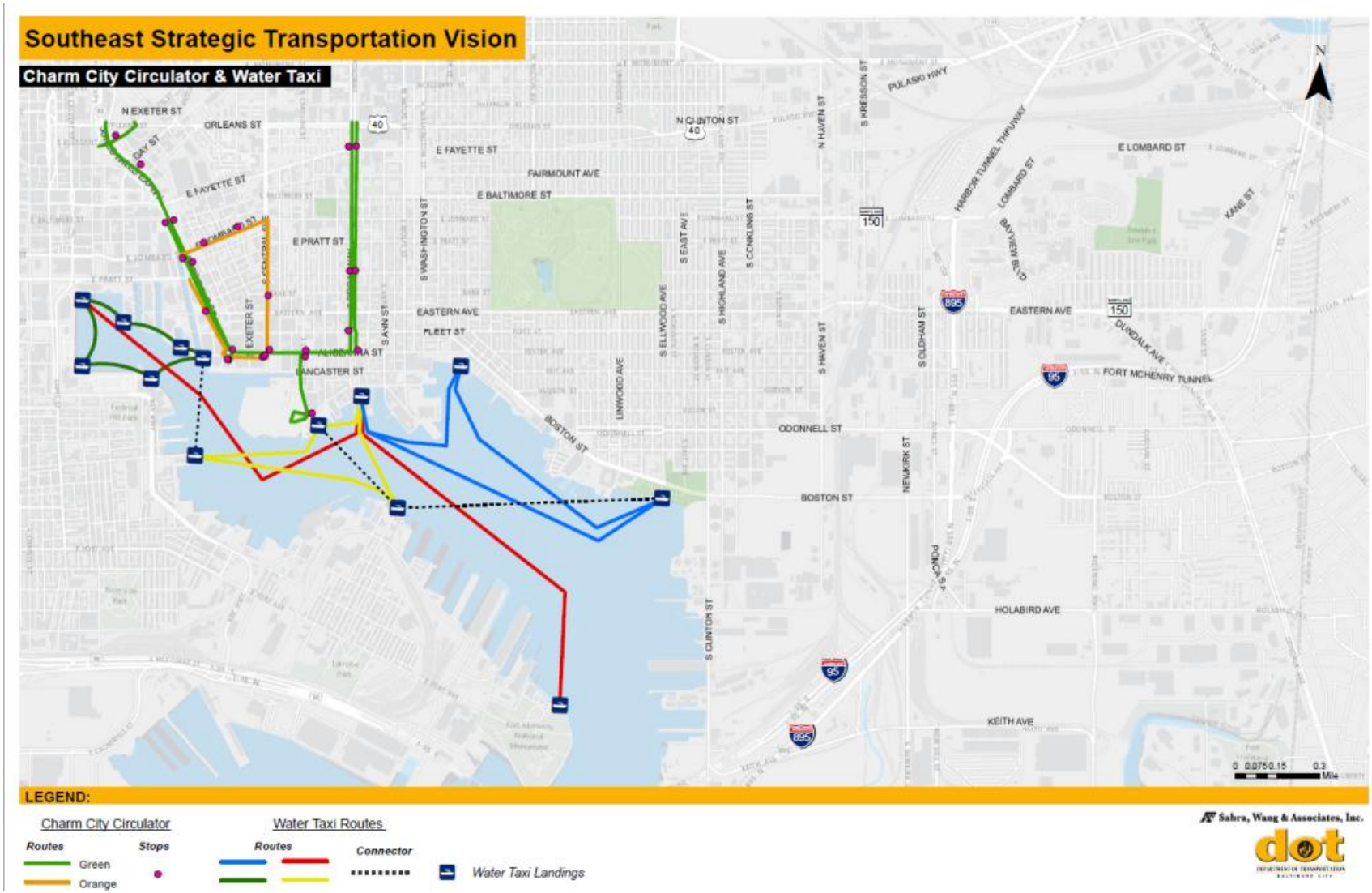
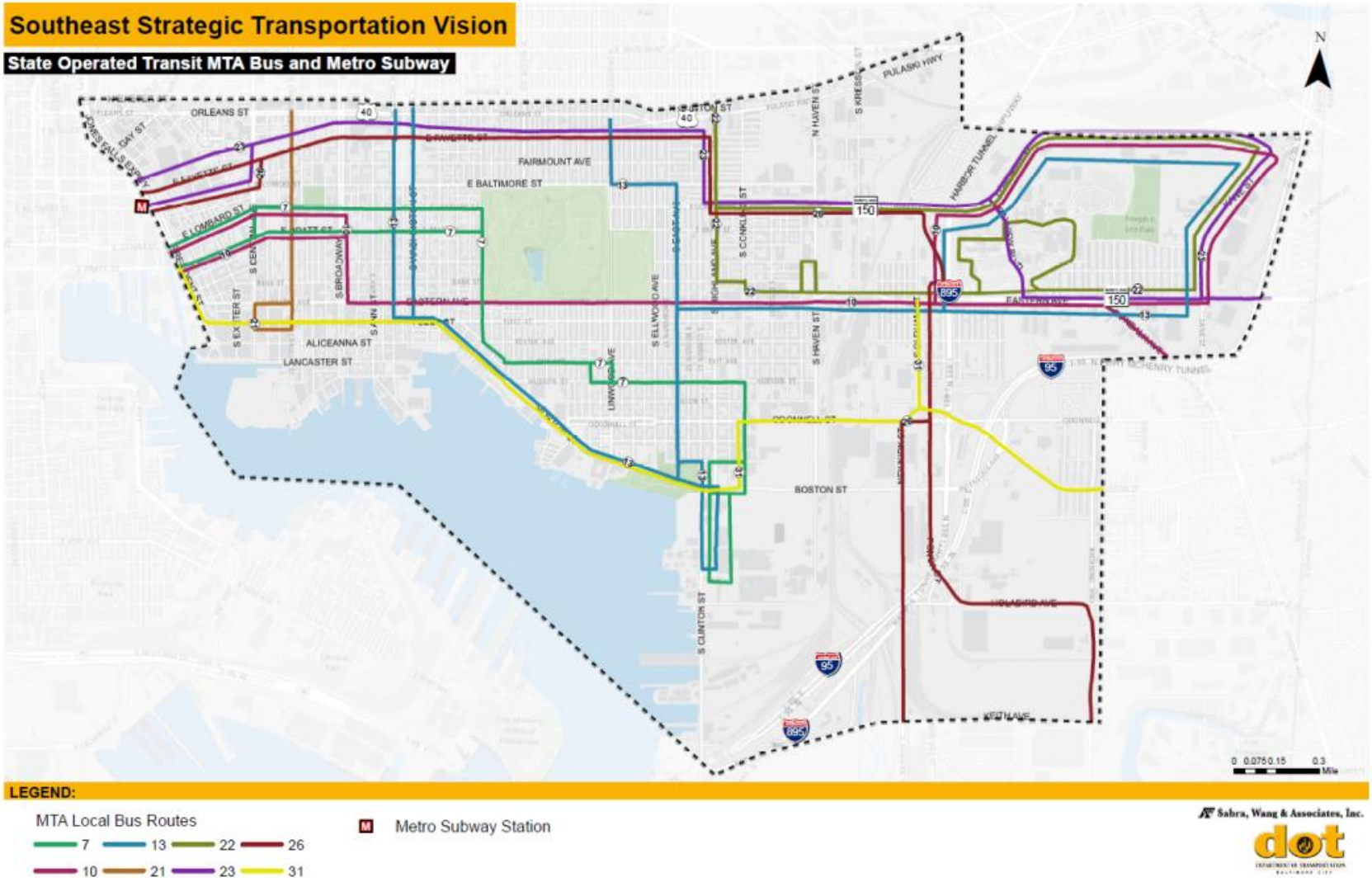


Figure 8. State Operated (MTA) Transit Services - Bus and Metro



C. Roadway Network (Passenger Cars and Trucks)

A traditional grid street network exists throughout the study area. Freeways provide connectivity to the local street network along both the eastern and western boundaries of the study area. I-83 connects the western portion of the study area to points north while I-95 and I-895 run north-south along the eastern border of the study area with a few access points within the Southeast.

The major roadways evaluated in this study are the east-west arterials of Baltimore Street, Boston Street, Fleet Street, Aliceanna Street, Eastern Avenue, Fayette Street, O'Donnell Street, Lombard Street, Fayette Street and Orleans Street as well as the north-south arterials of President Street, Central Avenue, Broadway, Wolfe Street, Washington Street, Conkling Street, Ponca Street, and Broening Highway. Study intersections are illustrated in **Figure 9.**

In 2012, the City DOT approved the designated through truck routes which serve the commercial and industrial uses in Southeast, and is shown in **Figure 10**. Outside of the industrial area, designated streets include Fleet, Boston, Eastern, Central, Broadway and Fayette.

A capacity analysis is summarized for the existing conditions using the Highway Capacity Manual (HCM) methodology for all of the study intersections, based on the most-recently available traffic counts and/or studies. Level of service (LOS) is defined by the HCM as a "qualitative measure describing operational conditions within a traffic stream." LOS ranges from A to F where A represents optimal conditions and F represents failing conditions. Baltimore City's standards define LOS D or better as acceptable.

The existing traffic volumes, along with existing roadway geometry such as lane configurations and signal timing, was input to code a baseline traffic model for the study network using Synchro, a deterministic and macroscopic signal analysis software which implements the Highway Capacity Manual methodology. The results of the capacity analysis are summarized in **Table 2.** In a connected street network like Southeast, the effects of even one failing intersection are not isolated and can result in several blocks of queued vehicles in all directions, significantly increasing travel times and delays.

An additional planning metric, Intersection Capacity Utilization, was also employed to assess the ability of the demand volume to be served by the available intersection capacity based on the existing roadway geometry and signal timing. **Based on this performance measure, 18 of the 34 critical intersections are operating at over 75% of capacity (e.g. LOS D, E or F) during at least one peak hour,** indicating that any significant additional vehicle demand will exceed the remaining intersection capacity, and result in failing operations, excessive queuing, increased motorist delays and travel times.

Figure 9. Study Intersections

Figure 10. Designated Truck Routes

Table 2. Summary of Existing Intersection Capacity Analysis[1]

ID	Intersection	Level of Service AM (PM)	Percent Capacity Utilization	Total Entering Volume – PM
1	President St @ Fayette St	**F (E)**	**100.9%**	5228
2	President St @ Lombard St	**D** (C)	**84.3%**	4496
3	President St @ Pratt St	**E** (D)	**84.3%**	4856
4	President at Eastern Ave	**D (D)**	**97.1%**	3,532
5	President at Fleet Street	C **(D)**	55.1%	2,329
6	Central Ave @ Aliceanna St	B (B)	**76.6%**	1281
7	Central Ave @ Fleet St	**E (E)**	**75.1%**	1755
8	Central Ave @ Eastern Ave	C **(D)**	72.1%	1465
9	Central Ave @ Fayette St	C (C)	72.5%	3067
10	Boston St @ Aliceanna St	B **(E)**	**77.5%**	2244
11	Boston St @ Fleet	D **(E)**	**79.8%**	2364
12	O'Donnell @ Conkling St	C **(D)**	**89.9%**	1976
13	Pulaski Hwy @ Ellwood St	B (B)	71.9%	2458
14	Lombard St @ Bayview Rd	C (C)	59.6%	2211
15	Kane St @ Eastern Ave	C (C)	74.6%	3130
16	Boston St @ Ponca St	C **(D)**	**82.2%**	2087
17	O'Donnell @ O'Donnell Cutoff	C (C)	46.0%	1883
18	O'Donnell @ Interstate Ave	C **(D)**	**80.7%**	2265
19	O'Donnell St Cutoff @ Interstate Ave	C **(D)**	60.2%	1820
20	Boston St @ Broening Hwy	C (C)	46.7%	958
21	Broening Hwy @ Holabird Ave	C (C)	53.9%	1686
22	Interstate Ave @ Ramp from I-95 NB	C (C)	43.2%	1433
23	Fayette Street @ Washington St	C **(E)**	**93.6%**	2199
24	Orleans Street @ Washington St	A (A)	62.2%	2104
25	Aliceanna Street @ Broadway	B (C)	53.5%	1471
26	Eastern Avenue @ Broadway	C **(F)**	**141.1%**	3830
27	Eastern Avenue @ Haven Street	C (C)	**82.2%**	2198
28	Eastern Avenue @ Highland Street	B (C)	**81.8%**	1453
29	Fayette Street @ Broadway	C **(D)**	**85.5%**	2847
30	Dundalk Ave @ Holabird Avenue	**D (D)**	**76.9%**	2537
31	Eastern Avenue @ Bayview Blvd	B (B)	48.3%	2403
32	Eastern Avenue @ Oldham St	A (B)	65.3%	1569
33	Boston @ Conkling St	C **(D)**	76.6%	2499
34	Aliceanna @ Wolfe	C (B)	**80.90%**	1330

VII. Future Traffic Forecasts

The methodology for projecting future traffic, specifically development-generated traffic, includes estimating new trips generated by each new land use, and then adjusting to account for alternative travel choices such as walking, biking and transit.

A. Trip Generation

Trip generation is the most critical aspect of assessing traffic impact. The objective of a trip generation analysis is to forecast the number of new trips that will begin or end at a proposed land use. A primary source for the data on vehicular trip generation is the *Trip Generation Handbook, 9th Edition* published by the Institute of Transportation Engineers (ITE). The *Handbook* compiles data from numerous studies of trip rates at hundreds of specific types of land uses (e.g. retail, schools, apartments) throughout the country. The data is sorted by various time periods and plotted against independent variables (e.g. square feet of commercial space, number of employees, number of dwelling units). The data is presented in charts with weighted averages and fitted curve linear regression equations (when enough data is available).

The compilation of trip generation rates is largely suburban in nature, derived from single use sites in areas without strong walking, biking and transit options. As such, several site-specific factors can reduce the number of estimated personal vehicular trips generated by a new development or land use. These include:

- The availability of alternative modes of transportation – sidewalks, bicycling networks, and transit services
- The effect of pass-by traffic – passenger vehicles already on the road making a new "stop" at a proposed land use,
- The effect of internally captured trips – composed of traffic originating and destined for different land uses within the same development that do not travel on the public street, such as a hotel guest eating lunch at a restaurant in the same building or complex.

The effect of pass-by traffic is also quantified from data available in the *Trip Generation Handbook*.

B. Mode Choice

In accounting for alternative travel modes, influencing factors include travel time, travel cost, time of day, comfort, etc. In this study, mode choice was determined using the Baltimore Metropolitan Council's regional travel demand model, which incorporates local neighborhood-level census data including car ownership and journey to work surveys. This tool takes neighborhood-specific characteristics – proximity to transit, land use – into account to determine the share of trips that will be taken by bike, light rail, Metro, commuter rail, bus, and on foot. The Southeast Area is divided into four different zones with distinct characteristics allowing for the application of local data – making the tool a valuable resource for forecasting mode split. The denser neighborhoods of the western end of the study area provide better access for transit, walking, and biking than do the more suburban and industrial neighborhoods along the eastern end.

The baseline mode share is as follows, and varies within the ranges based on trip type such as commute, shopping, etc., and specific location/ proximity to bus and rail lines within Southeast:

- Bus Transit – 3.5% to 14%
- Metro Subway – 5.5% to 11%
- Walking/ Biking – 4% to 37%

Given the rates from the *Trip Generation Handbook* and the mode choice discussed in this section, forecasts were made for each of the planned developments listed in Section IV.

After adjusting for applicable discounts related to walking, biking and transit trips, the new land uses will add approximately 9,400 AM and 10,200 PM new peak hour vehicle trips to the existing street network as shown in the table below. The travel forecasts also estimate approximately 2,700 new walking, biking and transit trips in the AM peak hour and 3,800 new walking, biking and transit trips in the evening peak hour.

	AM Peak Hour		PM Peak Hour		Daily Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
Raw New Site Trips	7475	5351	8124	10114	84575	84579
Less Non-Auto (Ped, Bike, and Transit)	1307	1400	1932	1950	17609	17616
Less Internally Captured Trips	295	295	885	885	9175	9175
Less Pass-by Trips	39	38	852	852	9551	9369
Total Net New Vehicle Trips	5834	3618	4455	6427	48241	48420

Detailed forecasted AM, PM peak hour trips are summarized in **Table 3**, for each planned development.

Figure 10 shows, spatially, where the relative impact of the projected developments expected in the study area over the next five years. The figure shows that Harbor East and Canton Industrial Area are expected to see the highest number of newly generated vehicle trips.

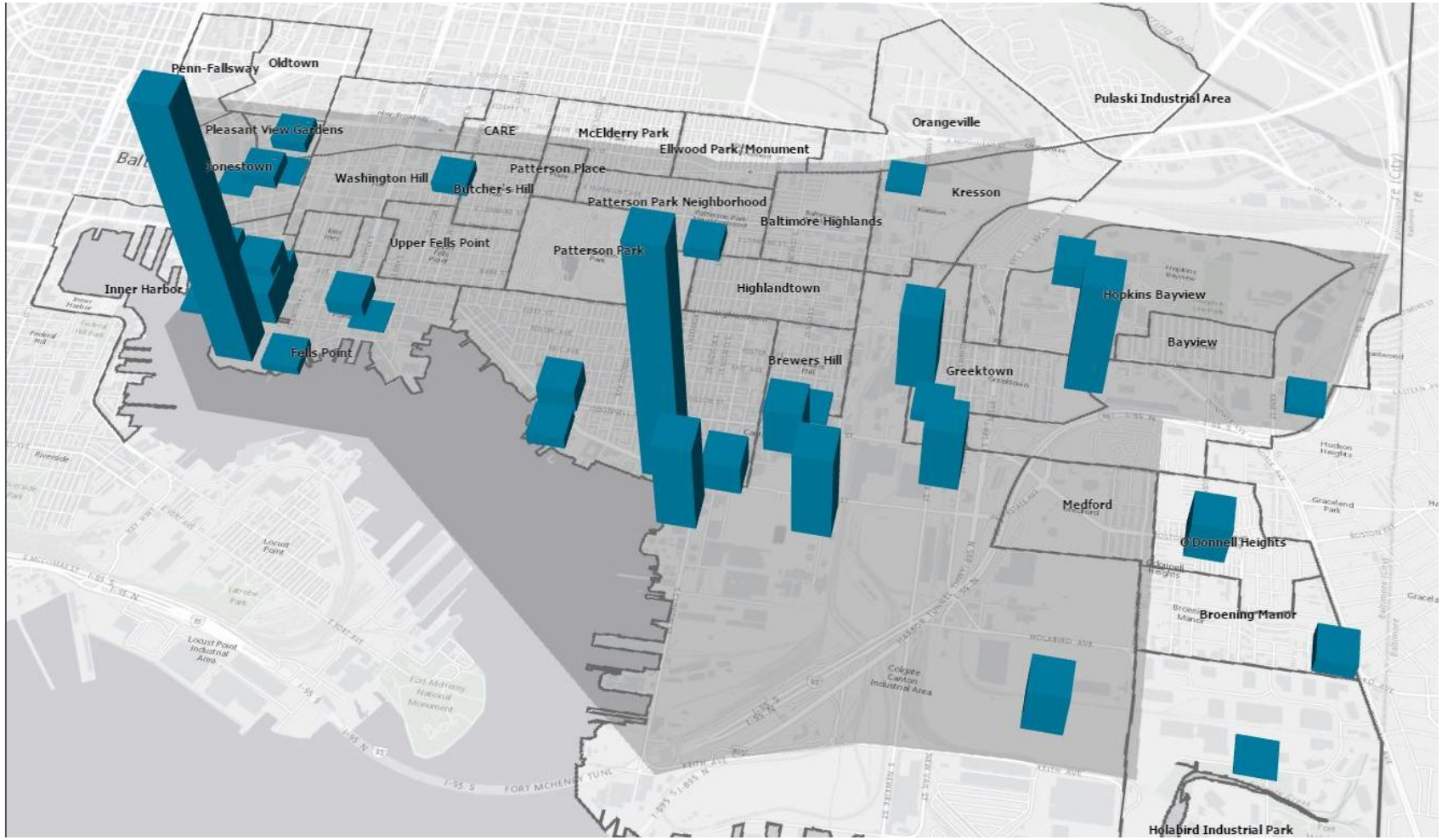


Figure 11: 3-D visualization of Trip Generation across Southeast Plan Study Area

Table 3. **Forecast of Trips Generated by Planned Area Developments**

ID #	Development	Proposed Use	AM Peak Entry Trips	AM Peak Exit Trips	PM Peak Entry Trips	PM Peak Exit Trips	Total Peak Trips
1	Jonestown Mews	Apartment	1	3	3	2	9
		Subtotal	**1**	**3**	**3**	**2**	
2	Hendler Creamery Redevelopment	Retail	22	14	17	15	162
		Apartment	11	42	25	16	
		Subtotal	**33**	**56**	**42**	**31**	
3	Ronald McDonald House	Assisted Living	2	1	2	3	8
		Subtotal	**2**	**1**	**2**	**3**	
4	Pleasant View Gardens	Apartment	13	54	53	28	148
		Subtotal	**13**	**54**	**53**	**28**	
5	Della Notte Site Redevelopment	Retail	2	2	2	1	72
		Apartment	6	27	20	12	
		Subtotal	**8**	**29**	**22**	**13**	
6	Four Seasons Condo Expansion	Condos	5	17	14	8	44
		Subtotal	**5**	**17**	**14**	**8**	
7	Harbor Point	Retail	62	43	172	161	3779
		Office	1157	132	232	1154	
		Hotel	54	5	40	44	
		Apartment	61	242	135	85	
		Subtotal	**1334**	**422**	**579**	**1444**	
8	H&S redevelopment	Condos	12	59	30	17	485
		Office	80	8	17	86	
		Supermarket	40	24	60	52	
		Subtotal	**132**	**91**	**107**	**155**	
9	Hyatt Place	Retail	18	12	16	16	240
		Hotel	50	34	47	47	
		Subtotal	**68**	**46**	**63**	**63**	
10	Marketplace at Fells Point	Retail	31	19	33	32	214
		Apartment	11	46	25	17	
		Subtotal	**42**	**65**	**58**	**49**	
11	Merchant Point	Townhomes	1	5	5	2	
		Subtotal	**1**	**5**	**5**	**2**	13
12	Area A Washington Hill PUD	Apartment	13	54	54	30	151
		Subtotal	**13**	**54**	**54**	**30**	
13	Tindeco/ Lighthouse Point	Condos	12	61	59	29	161
		Subtotal	**12**	**61**	**59**	**29**	
14	Safeway Development	Apartment	10	42	43	23	326
		Office	83	11	19	95	
		Subtotal	**93**	**53**	**62**	**118**	
15	101 South Ellwood Avenue	Apartment	15	58	60	32	165
		Subtotal	**15**	**58**	**60**	**32**	
16	Pompeian Expansion	Warehouse	40	10	8	25	83
		Subtotal	**40**	**10**	**8**	**25**	
17	Merchant Hill Phase I and II	Townhomes	5	16	13	7	41
		Subtotal	**5**	**16**	**13**	**7**	
18	Brewers Hill remaining buildout	Office	315	43	55	267	680
		Subtotal	**315**	**43**	**55**	**267**	
19	Canton Crossing	Retail	110	63	246	285	1299
		Office	293	30	45	227	
		Subtotal	**403**	**93**	**291**	**512**	
20	BJ's Canton	Gas	28	27	43	44	970
		Restaurant	60	41	26	20	
		Retail	111	74	246	250	
		Subtotal	**199**	**142**	**315**	**314**	

20	BJ's Canton	Gas	28	27	43	44	**970**
		Restaurant	60	41	26	20	
		Retail	111	74	246	250	
		Subtotal	**199**	**142**	**315**	**314**	
21	Greektown PUD townhomes	Townhomes	12	56	53	27	**148**
		Subtotal	**12**	**56**	**53**	**27**	
22	Greektown TOD	Apartment	25	98	49	27	**1160**
		Hotel	26	7	20	20	
		Office	243	26	38	201	
		Retail	73	41	129	137	
		Subtotal	**367**	**172**	**236**	**385**	
23	Bayview Campus Expansion	Office	151	21	29	142	**343**
		Subtotal	**151**	**21**	**29**	**142**	
24	Hampton Inn	Hotel	29	20	28	27	**104**
		Subtotal	**29**	**20**	**28**	**27**	
25	Duke Property	Warehouse	289	77	84	253	**703**
		Subtotal	**289**	**77**	**84**	**253**	
26	O'Donnell Heights redevelopment	Townhomes	43	211	208	102	**564**
		Subtotal	**43**	**211**	**208**	**102**	
27	Victory Steel Warehouse	Warehouse	6	1	6	17	**30**
		Subtotal	**6**	**1**	**6**	**17**	
28	Dundalke Avenue Project	Apartment	21	84	84	45	**234**
		Subtotal	**21**	**84**	**84**	**45**	
29	PEMCO Former Site	Retail	96	55	188	207	**1675**
		Office	278	19	41	217	
		Hotel	26	3	17	16	
		Apartment	21	80	3	4	
		Supermarket	97	57	129	121	
		Subtotal	**518**	**214**	**378**	**565**	
30	Kaufman Property	Office	85	12	19	98	**442**
		Apartment	21	82	82	43	
		Subtotal	**106**	**94**	**101**	**141**	
31	Copt Development	Retail	73	39	129	123	**1318**
		Office	299	31	46	241	
		Apartment	41	160	80	56	
		Subtotal	**413**	**230**	**255**	**420**	
32	Duburns Arena Expansion	Arena	894	894	894	894	**3576**
		Subtotal	**894**	**894**	**894**	**894**	
33	Fells Point Hotel	Hotel	32	22	32	30	**116**
		Subtotal	**32**	**22**	**32**	**30**	
34	H&S North Lot	Retail	36	21	53	50	**633**
		Office	138	14	23	124	
		Apartment	21	80	44	29	
		Subtotal	**195**	**115**	**120**	**203**	
35	Eastern Avenue Lot	Apartment	22	86	82	44	**234**
		Subtotal	**22**	**86**	**82**	**44**	
GRAND TOTAL			**5832**	**3616**	**4455**	**6427**	**20330**

VIII. Findings and Multi-Modal Mobility Strategy

Since the original iteration of the Southeast Plan in 2007, several million square feet of new developments have come online and even more are in various planning stages. In the same time period, DOT has constructed several intersection capacity improvements. In spite of these improvements, congestion is still prevalent at many Southeast intersections and is expected to worsen with additional new development. **Nearly half of all critical intersections are currently at or approaching capacity.**

Increased use of non-single occupant vehicle transportation modes is essential to accommodate the expected growth in Southeast Baltimore. Equally as important are Transportation Demand Management strategies by employers/ employment centers that make walking, biking, and transit more cost competitive, convenient and appealing. Improving upon the ability of Southeast to accommodate new trips requires:

- Increasing travel options to and within Southeast through expanded and prioritized transit and biking networks
- Enhancing connections between travel modes within Southeast
- Employing traffic management strategies

Based on these requirements, individual improvements across all travel modes are recommended. Specifically, key east-west and north south corridors should be identified, planned, and reconfigured to prioritize specific modes of travel. These corridors can provide additional capacity through a mix of mode-specific treatments such as buffered/protected bike lanes, designated bus lanes, additional travel lanes (through rush hours restrictions), such that all modes are balanced and accommodated. Recommended corridors include:

- North/South Corridors: Broadway, Wolfe, Washington
- East-West Corridors: Fleet, Aliceanna, Eastern, Boston

In addition to accommodating all modes within the Southeast study area, specific Transportation Demand Management (TDM) and Transportation Management Associations (TMAs) are recommended to limit driving and induce alternative transportation means. TDM is information, encouragement and incentives provided by local or regional organizations to help people know about and use all their transportation options to optimize all modes in the system – and to counterbalance the incentives to drive that are so prevalent in subsidies of parking and roads. A TMA is a non-profit agency typically composed of local businesses, and local jurisdictions funded by a public-private partnership. The TMA's mission is to provide/ support programs and information about parking and travel options.

A. Walking and Biking Networks

Access to Transit

Good intermodal connections are critical in order for transit services to reach their full potential. Providing high-quality pedestrian and bicycling conditions near stations will allow for greater access and is a proven strategy to increase transit ridership. Pedestrian and bicycle facilities near transit services – including enhanced pedestrian crosswalks, bicycle parking, direct bus and taxi connections, bike shares and ride shares – should be a priority, especially around proposed Red Line stations. Wayfinding signing, including

information on connections to other travel modes, walking and biking distances, and real-time transit information also plays a key role for individuals using transit.

Bike Sharing System

Southeast grid network of streets, short blocks and proximity of mixed uses, lends itself to short quick trips, served by bikeshare. Bikeshare has been implemented in dozens of cities across the country, with similar densities and street layout, like Washington, DC; Pittsburgh, New York City, and Philadelphia. Bikeshare users typically pay an annual fee, and all bike trips shorter than a preset time limit (e.g. ½ hour) are free; these are the types of trips that would be used by residents to access nearby retail and to commute to work or to transit centers.

Launching a bike sharing system in Baltimore City will increase the supply of bicycles on the street, increasing their visibility, which will have an effect of increasing driver's vigilance for cyclists, making it safer for all users. Bikeshare service, in conjunction with a network of dedicated biking infrastructure, has the potential to further encourage biking throughout the Southeast area and across the city, and expand accessibility to areas that may not be cost-effective for transit to serve. This study recommends implementation of bike share and expansion throughout the Southeast area. Proposed dock stations would serve areas of high residential density, employment, retail, and transit hubs.

Bike Network Infrastructure Improvements

Additional cycling infrastructure improvements are recommended to create a more connected bike network throughout the study area and support the deployment of bike share stations. The Southeast Strategic Transportation Vision supports the Bicycle Master Plan recommendations in the Southeast area and recommends annual infrastructure investment to increase the network lane-mileage of bicycle facilities implemented throughout the study area. Specific improvements to enhance bicycle network connectivity and capacity are illustrated in **Figure 11** and include:

- Boston Street bike lanes
- Caroline Street bike lanes,
- East Avenue bike lanes
- Wolfe Street and Washington Street bike lanes
- Potomac Street cycle track
- Eastern Avenue bike lanes

B. Transit Services

In addition to **continued funding of existing Charm City Circulator and Harbor Connecter operating expenses**, the following additional improvements are recommended.

Red Line Light Rail

Construction of the Red Line will have a large impact on travel to and from Southeast. The light rail line will run through much of the study area, connect to points west, and provide links to other major transit services. Seven stations are planned for the Southeast in some of the most densely populated neighborhoods and largest employment centers.

Constructing the Red Line light rail project is perhaps the most beneficial way to mitigate future traffic in the Southeast area. The provision of new premium transit service will provide viable alternative travel choices for residents and visitors in Southeast as well as for "through" commuter traffic. This plan recommends investment that supports the Red Line in the Southeast area to maximize ridership and access, including:

1. Construction of park-and-ride lots at the Bayview MARC station and Canton Crossing stations.
2. Improving station access for bicyclists and pedestrians including wayfinding signage, bicycle parking, and pedestrian-scale lighting.
3. Reconfiguring or improving local roadway circulation to provide direct station access such as Cassell Drive within Bayview Medical Center, and extensions of Eaton Street and Toone Street in Brewers Hill.
4. Investment in transit signal priority to improve light rail travel times along Boston Street.
5. Pedestrian and bicycle access/parking at Fleet and Central to provide connectivity to Harbor East and Harbor Point.

Rendering of proposed Langley Transit Center, Takoma Park, Maryland

Transportation Hubs/ Partnering with MTA

Select locations should be branded as transportation centers to act as multimodal hubs for the area. These hubs would provide strengthened intermodal connections across the major regional transit services: the Charm City Circulator and Harbor Connector, MTA buses, JHU shuttles, the Metro Subway, and MARC. Several of these services converge in Harbor East, Highlandtown, Bayview, Johns Hopkins Hospital, and Canton Crossing, making them ideal sites for these multimodal transportation centers. These hubs should be targeted for additional investments in infrastructure as well as improved services. Offering users real-time time transit, parking and traveler information improves intermodal connections. Use of a single transit pass across all operators would allow seamless travel for transit riders. In order to maximize accessibility to these transportation centers, provisions for bike sharing, car sharing, park and ride spaces, and bus depots should be considered at these locations. The creation of transportation hubs can increase overall transit system capacity, and reduce the need for vehicle parking facilities.

Working with MTA, DOT has identified 2 priority transportation hubs in the Southeast area recommended for further study in partnership with MTA: 1) Bayview MARC (transit-oriented development rail station) and 2) Canton Crossing (water transit connection)

Bayview Commuter Rail (MARC) Station

The Bayview MARC station is proposed along the existing MARC Penn Line between Penn Station and Martin State Airport. As an infill station in the Johns Hopkins Bayview Medical Center area, it would connect to the proposed Red Line and become an important transportation center on the east side of Baltimore, providing commuter and inter-city rail service improving access to Washington, D.C. and from the

northeastern suburbs of Harford and Cecil Counties. Baltimore City is construction a Transportation Hub at the Bayview MARC station. This Hub will provide parking and other amenities to connect commuters via a Park and Ride, future Red Line, MARC service and local MTA bus service.

Bus Transit Priority Corridors

The Southeast Baltimore Complete Streets Plan identified several corridors for the implementation of transit priority treatments – Fayette Street, Eastern Avenue, Highland Avenue, and Ponca Street. These corridors are illustrated in **Figure 12**. Transit priority corridors are candidates for safe, secure and attractive operational improvements including: transit signal priority, queue jumping, limited stop service, real time arrival information displays, upgraded shelters, off-board fare payment, and bus bumpouts for expedited boarding.

Water Transportation

Water transit services can provide additional peak period transportation system capacity for commutes from East Baltimore and the I-95 North Corridor to Harbor East / Harbor Point and to Downtown. A new Harbor Connector service with a park and ride parking deck should be developed along with the proposed Canton Crossing Transit Hub. The new Harbor Connector route should operate from Canton to Harbor Point and Downtown (see **Figure 13**). The park and ride parking deck should utilize the Baltimore Department of Transportation property at Boston and S. Clinton Streets and be should be developed in coordination with the Canton Crossing Phase II development. This new Harbor Connector service should be operated during peak hours (6:30 AM to 9:30 AM and 3:30 PM to 7:30 PM). Parking fees along with Harbor Connector fares should be utilized to offset a portion of the capital and operating costs. A feasibility study should be undertaken to determine the size of the park and ride parking deck, preliminary design for the proposed Canton Transit Hub, project costs, potential grants and financing

Figure 12. Proposed Bicycle Facility Improvements

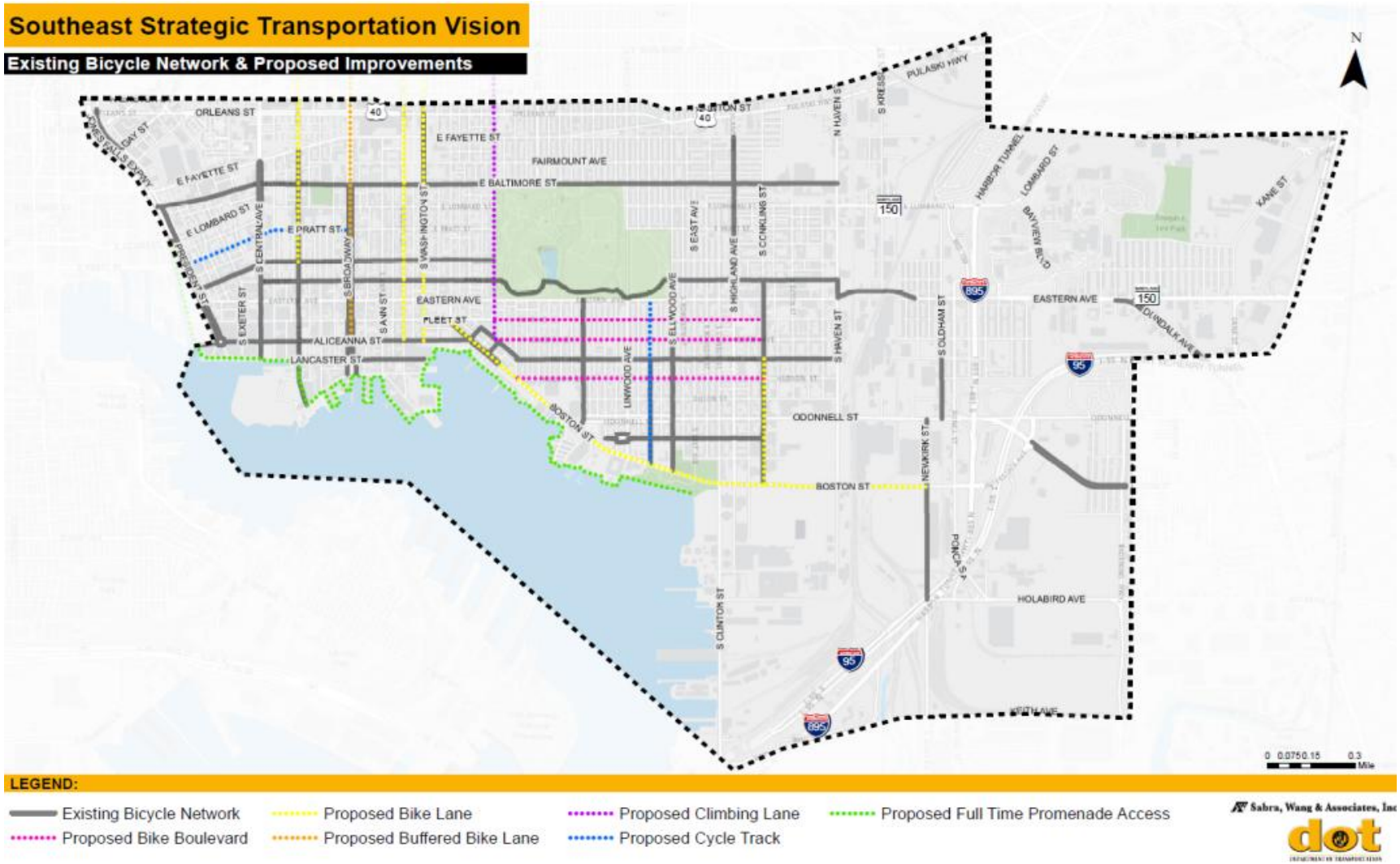


Figure 13. Recommended Priority Bus Corridors and Planned Transit Improvements.

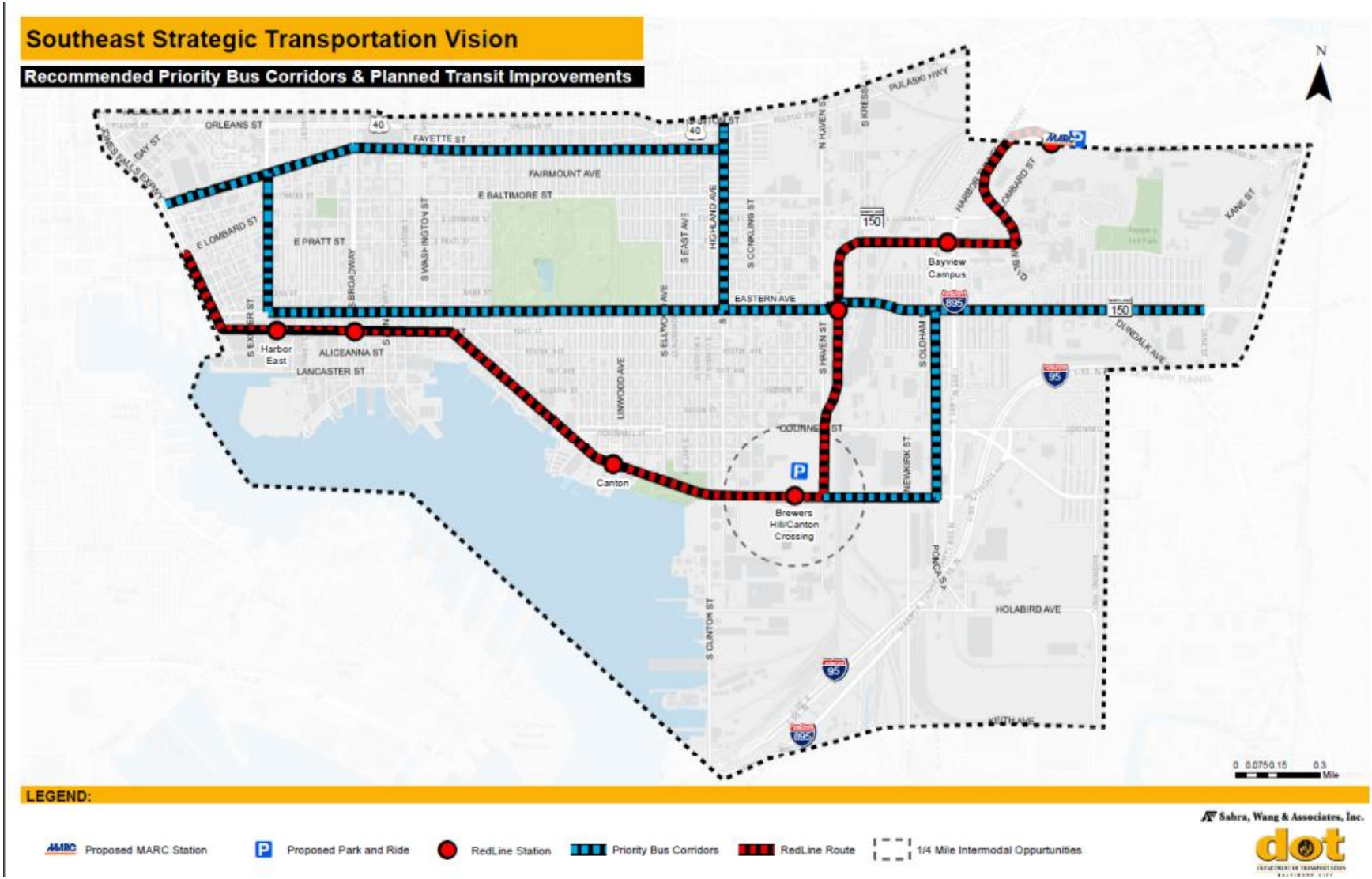


Figure 14. Recommended Water Transit Improvements.

C. Roadway Improvements

In addition to recommended bike and transit improvements, multiple roadway improvements and traffic management should be further evaluated:

East-West Corridor Improvements

The 2007 Southeast Transportation Study proposed the creation of a one-way pair with Aliceanna Street eastbound and Fleet Street westbound. This configuration would allow for a more efficient flow of vehicles between President Street and Boston Street by providing additional capacity and improving intersection levels of service, and may provide an opportunity to enhance bus, bike and pedestrian access in the corridor.

In order to implement these multi-modal recommendations on a corridor level, and establish modal priorities within each corridor, it is recommended that strategies for **Fleet Street, Aliceanna Street and Eastern Avenue** be analyzed in more detail and reconfigurations to accommodate designated bus lanes or bike lanes be considered.

Central Avenue Extension

The new 4-lane bridge to Harbor Point will enhance the capacity of Central Avenue by providing a critical new street connection as development continues along the waterfront. The bridge is currently under design, and is expected to be constructed and operating within the period covered by this study.

North South Connector – Brewers Hill

A new street connection is recommended east of Conkling and west of Ponca to provide additional north-south capacity in Brewer's Hill and encourage separation of freight and private automobile traffic, as well as provide alternative routing when through traffic on Boston Street is blocked at rail crossings.

North-South Connector O'Donnell Heights-Canton Industrial Area

Improvements to provide new roadway capacity from the O'Donnell Street/Interstate Avenue area to industrial parcels west of Broening Highway and south of Boston Street are recommended to avoid impact to existing and planned residential neighborhoods. A feasibility study of traffic, environmental, and alignment impacts should be performed.

D. Traffic Management

In order to help better manage existing and future travel demand in the Southeast area, A Transportation Management Association (TMA) is recommended for engaging private stakeholders including major employers, employment centers and institutions in transportation outreach and education in Southeast Baltimore. A TMA is a non-profit agency typically composed of local businesses, and local jurisdictions funded by a public-private partnership. The TMA can provide information, encouragement and incentives to help people know about and use all their transportation options to optimize all modes in the system – and to counterbalance the incentives to drive. This is critical not just to accommodate growth and economic development in the area but temporary congestion anticipated during the construction of major transportation improvement such as Central Avenue extension and the Red Line. Example TMA functions may include:

- *On-site Transportation Fairs and commuter related events*
- *Administration and analysis of commuter surveys*

- *Commuter mobility plans and transportation resource guide based on survey and zip code data.*
- *Construction and traffic advisories*
- *Employee car and home insurance*
- *Signage for carpool, vanpool and bike parking*
- *Employer subsidized transit*

The Waterfront Partnership of Baltimore currently comprises a number of stakeholders that previously have united to guide and advocate for transportation improvements in the area through the "A Smarter Way to Get There" initiative. The TMA should focus on a variety of policies and programs such as:

- *Mobility services (car shares, bike shares)*
- *Ridesharing services (carpools, van pools, taxi, shuttle connections to satellite parking /park and ride)*
- *Guaranteed Ride Home*
- *Parking Management (priority parking for carpools, performance and graduated parking, shared valet, shared parking agreements)*
- *Flex hours/ telecommuting*
- *Employer subsidies (parking cash out and transit passes)*
- *City subsidies (tax credits for live near your work programs)*

It is recommended to establish a TMA for Downtown, Hopkins Hospital and Harbor East, as these areas have primary job estimates of 54,759, 28,000 and 13,000 according to recent census data.

IX. Cost Estimates

Planning-level construction and operating costs for the current 5-year plan were developed. Sources include the Maryland State Highway Construction Cost Estimating Manual, Maryland Transit Administration, and Federal Highway Administration.

Item	Quantity	Total Construction/ Operating Cost
Access to Transit Improvements	7 Red Line stations @ ¼ mile radius	$13,000,000
Bike Share Stations	11 stations	$440,000
Transportation Centers	3 Centers/ Garages	$30,000,000
Bike Network Installation	10 lane miles	$2,100,000
Transit Priority Treatments	9 lane miles	$400,000
Curbside Management	2 miles	$61,000
Central Avenue Extension	4-lane bridge	$4,500,000
North-South Connection Brewers Hill	0.75 miles	$4,200,000
North-South Connection O'Donnell Heights	0.5 miles	$2,500,000
Circulator (3 routes)	5 years	$7,500,000
Harbor Connector Water Taxi	5 years	$7,500,000
Grant Total		**$70,000,000**

1 – excludes Bayview MARC station and Red Line cost

X. Summary

Since the first Southeast Transportation Plan in 2007, which then forecasted 10 million square feet of new development resulting in over 20,000 new vehicles on the roadways during rush hour, the City has invested over $15 million and completed over a dozen transportation improvements, to alleviate projected worsened congestion throughout the study area.

While the recent economic downturn slowed some of the market absorption of the previous projections, the development forecasts remain robust in Southeast. **This current Plan identifies over 35 individual development projects in various planning or permitting stages, adding 12.5 million square feet of new development, and potentially yielding over 20,000 new vehicles to roadways in the Southeast area during rush hour.**

Several corridors in the study area currently experience severe traffic congestion during rush hour, with multiple failing intersections, including: President Street, Eastern Avenue, Boston Street, Central Avenue, Fayette Street and Aliceanna Street.

The existing roadway network as currently configured will not be able to fully accommodate future development-generated vehicle traffic volumes. Although the Southeast area provides an extensive walking, biking and transit network including bus, rail, and water taxi, more improvements are needed to fully leverage non-driving modes.

Recommendations developed in this report include targeted capacity enhancements for walking, biking, transit, passenger vehicles and freight; traffic operations strategies to better manage traffic flow; improved inter-modal connections and policy initiatives to increase the existing and future travel share by modes other than private passenger vehicle. By investing in these strategies the City will be able to successfully attract new residents, visitors and workers, and provide seamless and reliable travel options that do not depend on owning a car.

These high level strategies may include:

- Improving street network connectivity through new links including the Central Avenue bridge extension, Brewer's Hill north-south connecter and the O'Donnell Heights-Canton Industrial Area connector
- Employ traffic management strategies on key corridors including Fleet Street, Aliceanna Street, and Eastern Avenue
- Establishing Bus Transit Priority Corridors through transit signal timing priority, queue jumps, limited stop service, and off-board fare payment along Fayette Street, Eastern Avenue, Central Avenue and Broadway
- Expand the bicycle network through protected lane treatments along Wolfe, Washington, East, and the Promenade
- Establish transportation hubs in Harbor East, Johns Hopkins Hospital, Highlandtown and Canton where improved bus, water taxi, bicycle and park and ride connections can be established

- Establish formal Transportation Management Associations to facilitate employer/ employee programs and incentives including ride shares, subsidized transit passes, parking and ride shuttles, guaranteed ride home

In order to implement these multi-modal recommendations on a corridor level, and establish modal priorities within each corridor, it is recommended that strategies for **Fleet Street, Aliceanna Street and Eastern Avenue** be analyzed in more detail and reconfigurations to accommodate designated bus lanes or bike lanes be considered.

I. Recommendations and Priority Projects

The following are priority recommendations for the South East Traffic Mitigation Zone which can quickly advance into policy changes or detailed analysis, design and implementation. The projects are summarized into three categories Capacity, Operations, and Mode shift.

A. Operations:

- **Improve signalization by securing ITS communications hardware and software to integrate with the TMC (Traffic Management Center) -** Link the traffic signal network in the South East Zone through wireless signal monitoring and allow remote signal monitoring at the TMC.
- **Central Ave –** Identify Central Ave to Orleans St as a preferred commuter connection route to I-95.
- **Update truck route signage within the South East Zone** – Direct truck drivers how to enter, exit, and travel through the Traffic Mitigation Zone using designated truck routes.
- **Pedestrian Signal Timing** – Evaluate increased WALK and FLASHING DON'T WALK intervals at high-pedestrian traffic locations along President Street.
- **Aliceanna Street at Boston Street –** Provide 2nd right turn lane during PM peak hours (4-7 pm) by allowing PM peak hour restricted on street parking on Aliceanna Street between Boston and Chester Streets.
- **Reconstruct traffic signals at Key Locations:**
  - East Pratt Street at Washington Street
  - East Fayette and Broadway
  - Ponca Street at Boston Street
  - Boston Street at Hudson Street and Montford Ave
- **Fleet Street and South Ann Street, Aliceanna Street and South Ann Street, South Wolfe and Fleet Street, and South Wolfe Street and Aliceanna Street** – Restrict eastbound and westbound peak hour left turns.
- **Pratt Street at President Street** – Remove one of two right turn lanes and install wayfinding signage to encourage vehicles to travel further east to access Fells Point and Canton via Central Avenue and Broadway

- **Holabird Avenue between Broening Highway and Boston Street and Boston Street to Interstate I-95 –** Improve curve radius and clearance under the I-895 Viaduct to improve freight routing efficiency and separate freight movement from residential neighborhoods of Medfield and Graceland.

B. Capacity:

- **South Broadway and Eastern** and **South Broadway and Fleet** - create a left turn lane/movement and a through lane on the eastbound and westbound approach
- **Wolfe Street and Washington Street –** Install bike lanes from Pratt Street to Aliceanna Street **Broadway –** Install a buffered bike lane northbound and southbound between East Monument and Aliceanna Street
- **Caroline Street –** Continue bike lane between Bank Street and East Madison Street
- **Pratt Street –** Cycle Track between President Street and Broadway
- **Foster, Fleet and Hudson –** Implement bicycle boulevards (Hudson Street is obligated for FY16 implementation)
- **Potomac Street between Boston and Eastern Avenue –** Implement Cycle Track
- **Boston Street –** Implement Bike lanes each bound and westbound
- **Patterson Park Avenue -** Implement a climbing Lane for bicycles

C. Mode Shift:

Promenade – Remove bicycle restrictions to allow bicycles to use the Promenade trail at all times.

MARC Bayview Parking Lot (5600 Lombard Street) – Construct parking lot and create a transit hub to facilitate park and ride mode shifts for employment, retail, and recreation.

Implement a Transportation Management Association (TMA) for the South East Traffic Mitigation Zone.

Support the launch and implementation of the bike share program – Provide access improvements between pedestrian, transit, and commuter modes.