Baltimore Metropolitan Council

2016 Metropolitan Report

Highlighting BMC's Regional Coordination

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2015 METROPOLITAN REPORT

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BMC BOARD OF DIRECTORS

Barry Glassman
Harford County Executive
(BMC Chair)

Allan H. Kittleman
Howard County Executive
(BMC Vice-Chair)

Steven R. Schuh
Anne Arundel County Executive

Stephanie Rawlings–Blake
Baltimore City Mayor

Kevin Kamenetz
Baltimore County Executive

Doug Howard
Carroll County Commissioner

William C. Ferguson
Maryland State Senator, D-46

Stephen W. Lafferty
Maryland State Delegate, D-42A

J. Thomas Sadowski
Economic Alliance of Greater Baltimore

Glassman: Regional cooperation will be key to our continued success

It is an honor to begin 2016 as the chairman of the Board for BMC, and I want to thank my friend and colleague Howard County Executive Allan Kittleman for serving as our vice-chair this year.

The greater Baltimore region is a dynamic and vibrant place. From burgeoning corporate centers in Columbia, Towson and Baltimore City's Inner Harbor, to the main streets of Bel Air, Westminster and Annapolis, businesses large and small are thriving.

> "When we work together toward common goals of regional economic growth, security and connectivity, there are no limits to what we can achieve."

More than 300,000 acres of farmland generate around $300 million in livestock and crop production. Military and technology hubs at Aberdeen Proving Ground and Fort Meade provide critical jobs and attract our nation's best and brightest to the protection of our country.

The Port of Baltimore supports a $53 billion freight economy that includes more than 140,000 direct and indirect jobs serving thousands of businesses and households. A network of safe and strong roadways, enhanced by growing transit options, supports families and job creators.

Our hospitals are at the cutting edge of medicine, saving and improving countless lives each day. World-renowned colleges and universities, and high-quality K-12 opportunities feed a skilled workforce.

All of these factors position the Baltimore region as a leader with incredible strengths and opportunities.

And when we work together toward common goals of regional economic growth, security and connectivity, there are no limits to what we can achieve.

Whether we make our homes on a farm in Darlington or a row house in East Baltimore, we are all connected. Our futures, as a region, are tied. I look forward to a continued partnership with each of our member jurisdictions to ensure that our region thrives for years to come.

Sincerely,

Barry Glassman

Harford County Executive

Chair, Baltimore Metropolitan Council

BMC serves as a resource for the region

Since 1956, the Baltimore Metropolitan Council (BMC) and its predecessors have served the greater Baltimore area as a resource for regional transportation and community planning.

BMC is a nonprofit organization governed under Title 13, Subtitle 3 of the Economic Development Article of the Maryland Code. We support local government by coordinating efforts in a range of policy areas including transportation, emergency preparedness, cooperative purchasing and environmental planning. In 2014, the organization's role was expanded in statute to include housing, workforce development and renewable energy.

We are proud to work with elected leadership of the Baltimore region and state appointees to identify mutual interests and develop collaborative strategies, plans and programs that help to improve the quality of life and economic vitality of metropolitan Baltimore.

BMC also hosts the Baltimore Regional Transportation Board (BRTB), the federal metropolitan planning organization (MPO) for Baltimore, which is responsible for stewardship of federal funding for regional transportation programs.

Our building permit database allows us to forecast for regional growth and accompanying infrastructure needs. While permit requests have not returned to the levels of the early 2000s, we are encouraged by a marked rise in residential development during the last six years. In particular, the uptick in permitted residential projects in Anne Arundel and Howard counties alone accounts for more than 50 percent of the entire region and suggests the need for additional transportation investments to support growing populations.

The Baltimore Regional Cooperative Purchasing Committee (BRCPC), by leveraging the collective buying power of local governments, has saved our member jurisdictions more than $117 million in energy costs since its inception in 2007. These benefits include $22.1 million in energy savings in FY2015 alone. By working together, our members have cut costs on everything from lamps and snow plow blades to painting services and generator maintenance.

Our Freight Movement Task Force (FMTF) coordinates the efforts of state and local government and industry partners to support the more than 307 million tons of freight that traverse the region's highways, rails, port, and airport facilities. By facilitating a regular dialogue, the Task Force brings together representatives from across modes to prepare greater Baltimore for a doubling of freight traffic during the next 15 years.

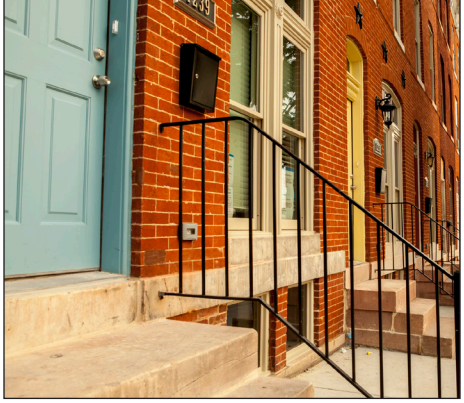
We hope you find this first edition of BMC's Metropolitan Report a useful guide to our organization's work.

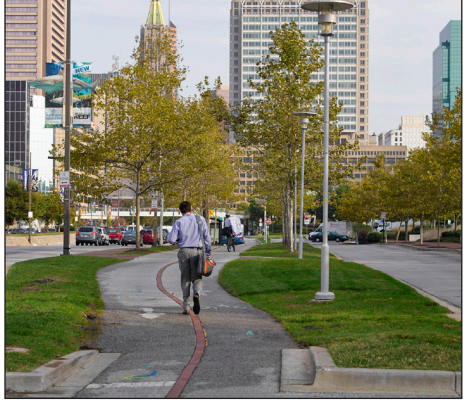
Please consider BMC a resource to all elected officials, staff and entities that serve our communities.

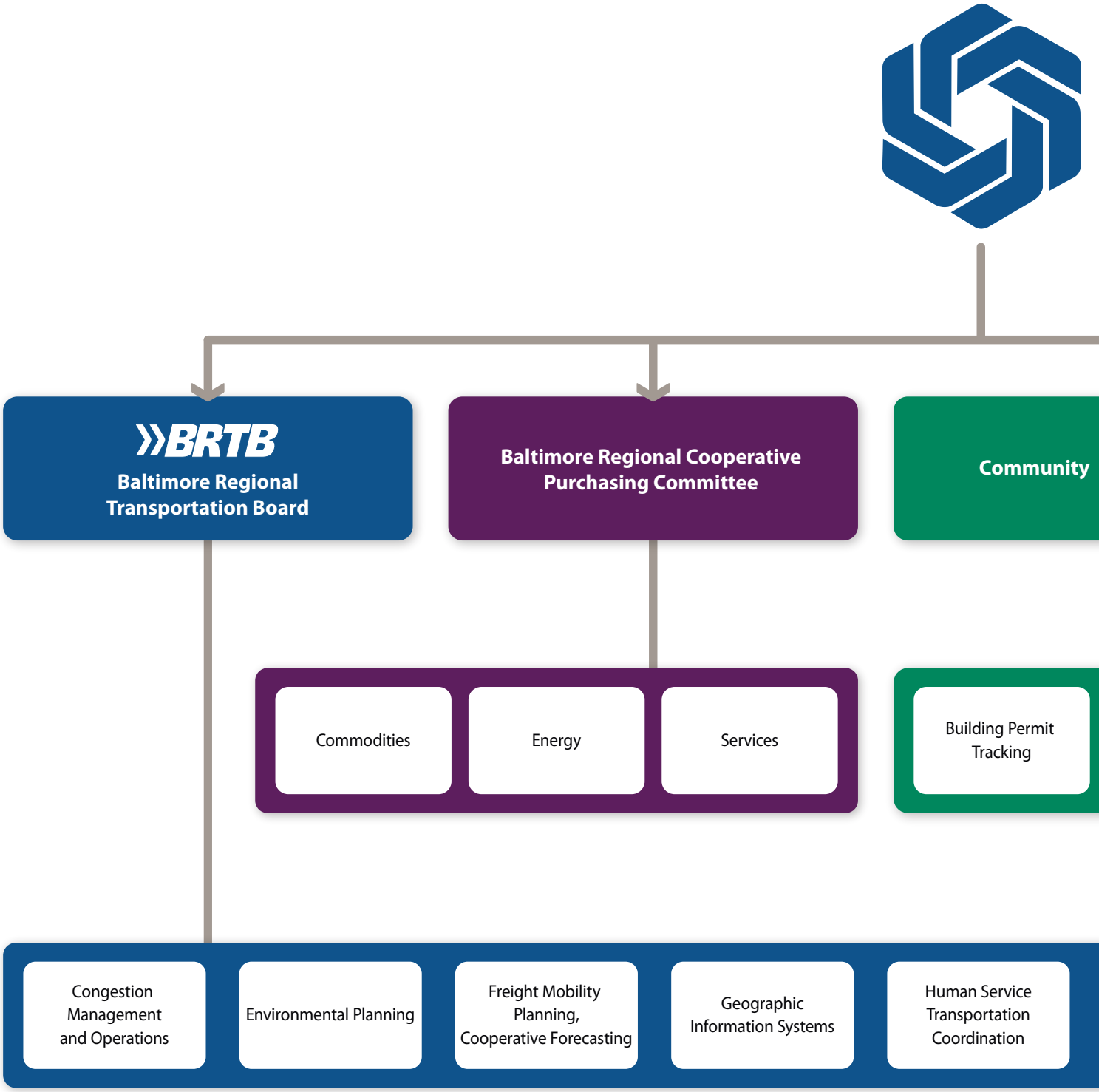
Sincerely,

Michael B. Kelly

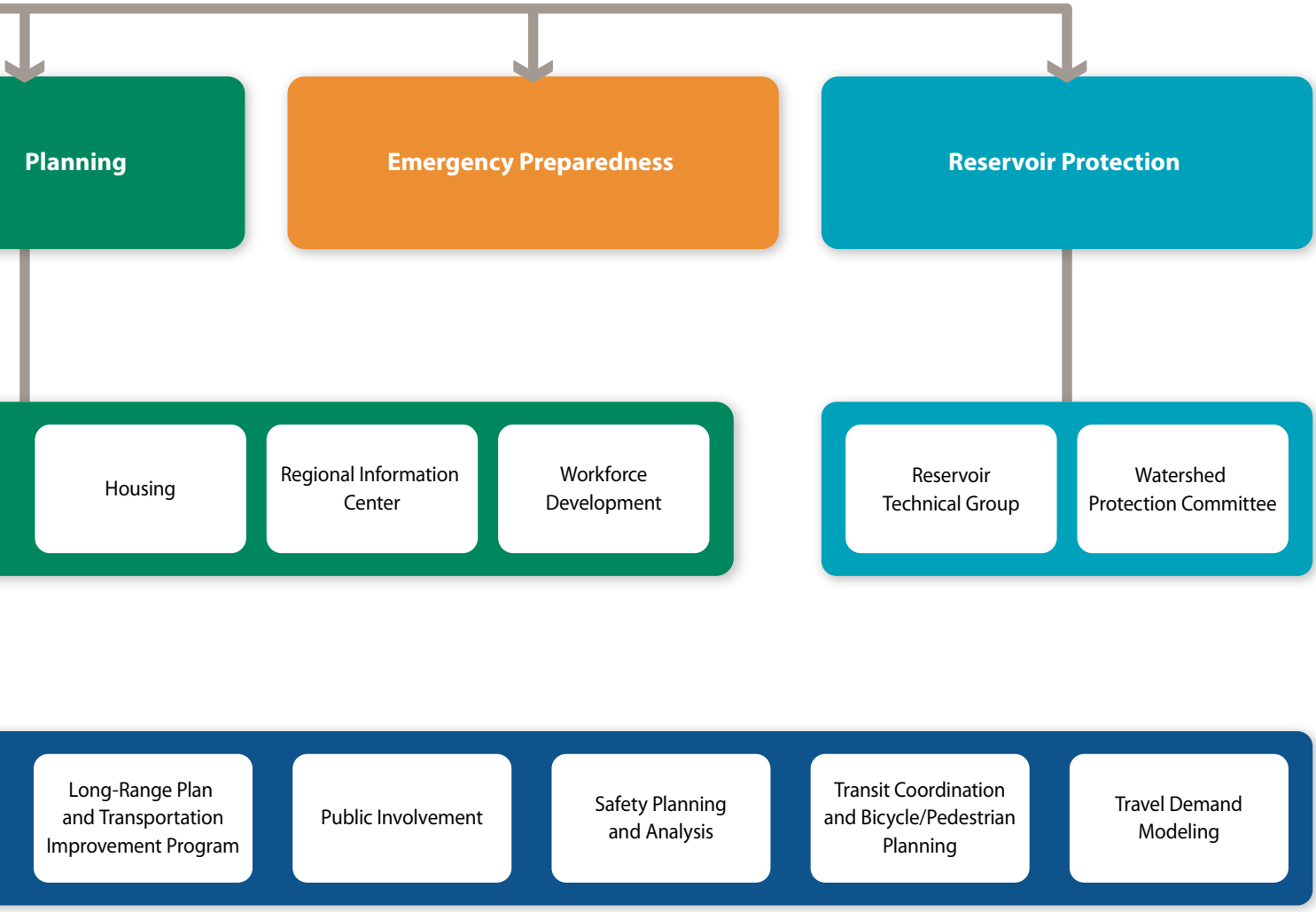
Executive Director

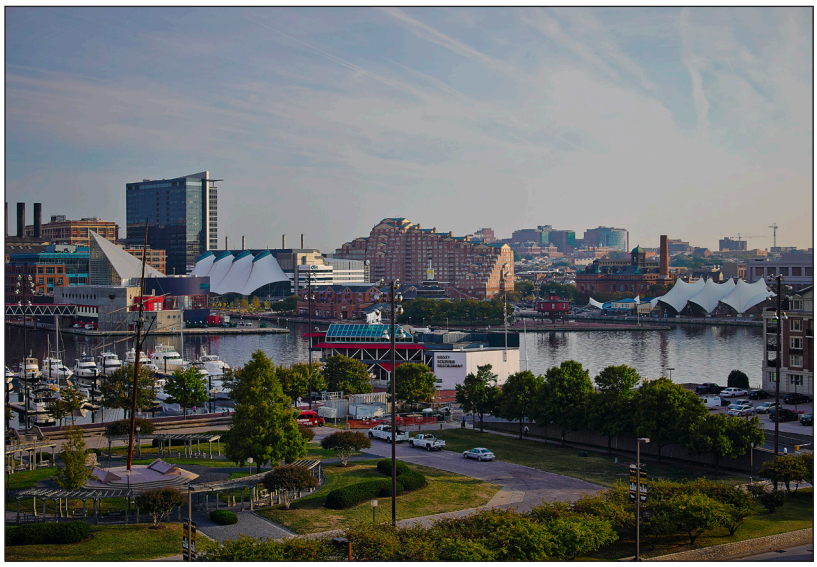





BRTB
Baltimore Regional Transportation Board
Baltimore Regional Cooperative Purchasing Committee
Community
Commodities
Energy
Services
Building Permit Tracking
Congestion Management and Operations
Environmental Planning
Freight Mobility Planning, Cooperative Forecasting
Geographic Information Systems
Human Service Transportation Coordination

Baltimore Metropolitan Council





STOP
WAIT
GO SLOW

AVERY DENNISON
Products
CA 92821

About the Metropolitan Report

The Metropolitan Report is a snapshot of how BMC staff supports the work of our member jurisdictions and other partners. The report highlights the efforts of BMC committees, work groups and internal teams, which focus on issues ranging from traffic congestion to energy procurement. For more information on BMC and the work discussed in this report, please contact our staff and leadership team.

About the Baltimore Metropolitan Council

The Baltimore Metropolitan Council (BMC) works collaboratively with the chief elected officials in the region to create initiatives to improve the quality of life and economic vitality. BMC, as the Baltimore region's council of governments (COG), hosts the Baltimore Regional Transportation Board (BRTB), the federal metropolitan planning organization (MPO), and supports local government by coordinating efforts in a range of policy areas including emergency preparedness, housing, cooperative purchasing, environmental planning and workforce development.

BMC's Board of Directors includes the executives of Anne Arundel, Baltimore, Harford and Howard counties, the mayor of the City of Baltimore, a member of the Carroll County Board of Commissioners, a member of the Maryland State Senate, a member of the Maryland House of Delegates, and a gubernatorial appointee from the private sector.

BMC promotes cooperation among local governments in the Baltimore metropolitan area by sharing information, collecting and analyzing data, and developing solutions to regional challenges. BMC also tracks demographic and economic trends and anticipates future needs in infrastructure, the environment, and economic development.■

TRANSPORTATION PLANNING PROCESS

The BRTB, as the Baltimore region's metropolitan planning organization (MPO), produces three federally-mandated transportation planning documents for projects requesting federal funding:

Unified Planning Work Program (UPWP)

- An annual budget and work program funding the transportation planning process within the region. The UPWP includes all transportation studies, outreach, analysis, modeling and other initiatives to be performed during each fiscal year; as well as costs and sources of funding. The UPWP is developed every two years.

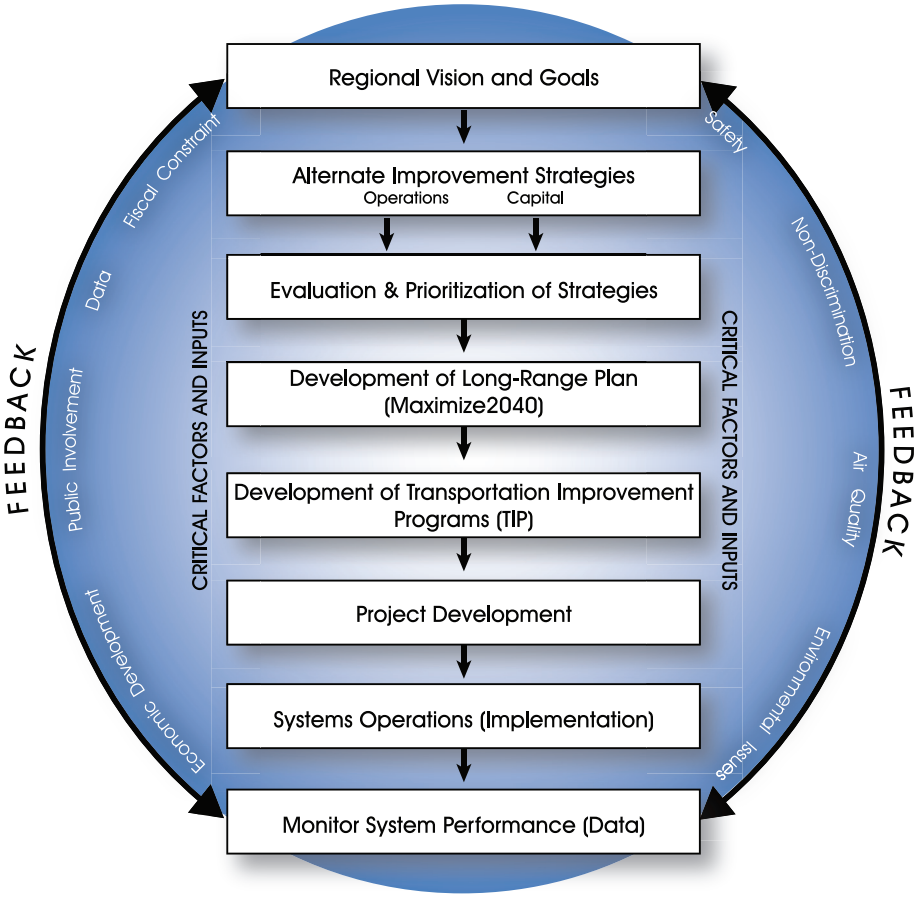
Transportation Improvement Program (TIP)

- A prioritized list of regional transportation projects that includes proposed federal, state and local money to be used for highway, transit, bicycle and pedestrian projects during a four-year period. The TIP is produced annually and updated on an ongoing basis, several times a year.

Long-Range Transportation Plan (*Maximize2040*)

- A policy and vision document developed through collaboration of regional and state partners, which anticipates and budgets for regional transportation needs during the next 25 years. The Baltimore region's plan is known as *Maximize2040*. The long-range plan is updated every four years.

UPWP PLANNING PROCESS

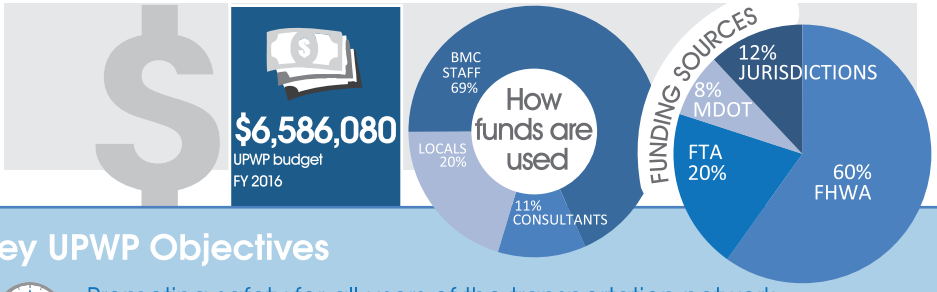


3-C Transportation Planning Process Is:

- **CONTINUING** – Planning must be maintained as an ongoing activity and should address both short-term needs and the long-term vision for the region;
- **COOPERATIVE** – The process must involve a wide variety of interested parties through a public participation process; and
- **COMPREHENSIVE** – The process must cover all transportation modes and be consistent with regional and local land-use and economic-development plans.

HOW THE UPWP WORKS

UNIFIED PLANNING WORK PROGRAM Annual Budget & Work Plan



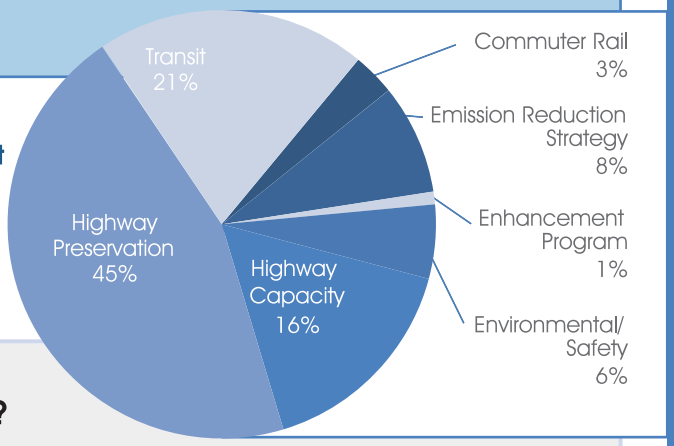
Key UPWP Objectives

- Promoting safety for all users of the transportation network, especially pedestrians and bicyclists.
- Enhancing and maintaining the region's travel demand model, a computer modeling program used to estimate future travel behavior and demand.
- Testing the statewide supply chain to better understand regional freight movement.

Transportation Improvement Program (TIP)

Funding by Category

FY 2016-2019



What does the TIP fund?

EMISSION REDUCTION STRATEGY
Ridesharing, park and ride lots, bicycle/pedestrian facilities, traffic engineering, fleet improvement, system expansion, ITS

HIGHWAY CAPACITY
New and widened roadways, new and widened bridges, new and widened interchange ramps

TRANSIT
New bus facilities, fleet improvement, operating assistance, support equipment, preservation, rehabilitation

HIGHWAY PRESERVATION
Road resurfacing and reconstruction, bridge repair, bridge inspections

ENVIRONMENTAL SAFETY
Noise barriers, lighting, signs, wetland mitigation, scenic beautification, reforestation

COMMUTER RAIL
Operating assistance, support equipment, fleet improvement, preservation, rehabilitation of facilities, new rail facilities

Out of 141 projects in the 2016 TIP, 76 are highway preservation.

BMC'S LONG-RANGE PLAN

maximize2040

- Establishes the region's broad transportation goals and performance measures, which will guide the region in planning and completing projects.
- Considers funding levels through 2040, and future trends and demographics.

The projects:

- Promote transportation safety,
- Improve accessibility and mobility,
- Encourage investments in existing communities, &
- Maintain or improve air and water quality.

- **$54.4 billion** for roadway and transit projects and programs.
- **$42 billion** (an estimated 77 percent of this) will go toward operating and maintaining the region's roadway and transit systems.

BMC staffs the Interagency Consultation Group of the BRTB, which supports environmental planning for the Baltimore region. As the federally-designated metropolitan planning organization (MPO), BRTB aids in improving air quality by ensuring planned transportation improvements do not hinder the region's ability to meet U.S. Environmental Protection Agency (EPA) air quality standards.

The Baltimore region has been designated a "nonattainment" area by the EPA, meaning that ground-level ozone exceeds a healthy threshold, as measured by the National Ambient Air Quality Standard (NAAQS).

Because the Baltimore region is a "nonattainment" area, the ICG is responsible for demonstrating that vehicle emissions resulting from transportation plans, programs, and federally-funded projects do not exceed certain limits. This evaluation, referred to as "conformity," will continue to occur until our region achieves EPA standards.

Research links ground-level ozone pollution to cardiovascular problems, including heart attacks, and aggravation of respiratory problems such as asthma.

Ground-level ozone pollution is created when nitrogen oxides (NOx) and volatile organic compounds (VOCs) combine in the presence of heat and sunlight in the atmosphere. The volume of these gases can be attributed primarily to vehicle exhaust and power plants. For example, on-road mobile sources were responsible for approximately 40 percent of daily NOx emissions in 2012.

In 1997, the EPA set the NAAQS for ground-level ozone at 0.080 parts per million (ppm). In 2008, the standard was strengthened to 0.075 ppm. Last year, it was tightened again to 0.070 ppm.

The Baltimore region has experienced a significant reduction in ozone levels during the last 10 years. The number of unhealthy days for ground-level ozone between 2005 and 2015 reduced by more than 80 percent. In June 2015, the EPA determined that the Baltimore region achieved the NAAQS adopted in 2008.

However, the region will need to continue to work to address the newest 2015 ozone standard and to reduce ozone-forming emissions. By supporting smart, environmentally responsible transportation planning, BMC continues to help ensure that air pollution emissions from the transportation network do not affect the region's ability to meet these important standards.

For more information:

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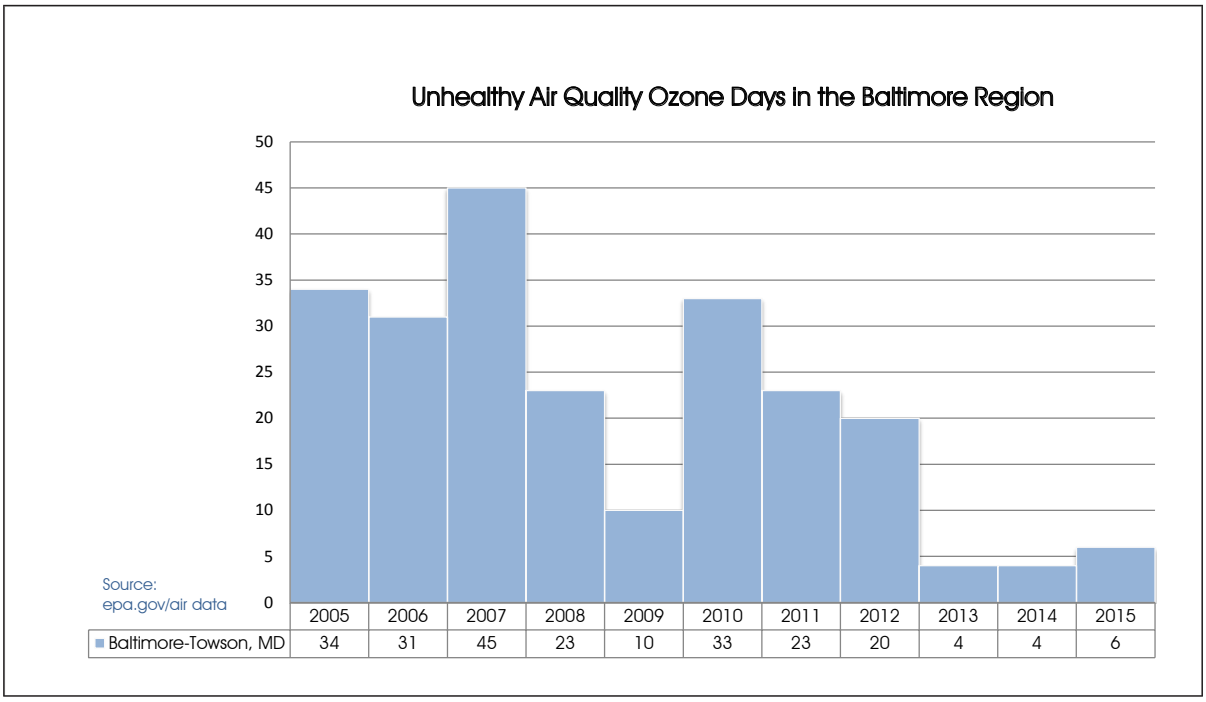
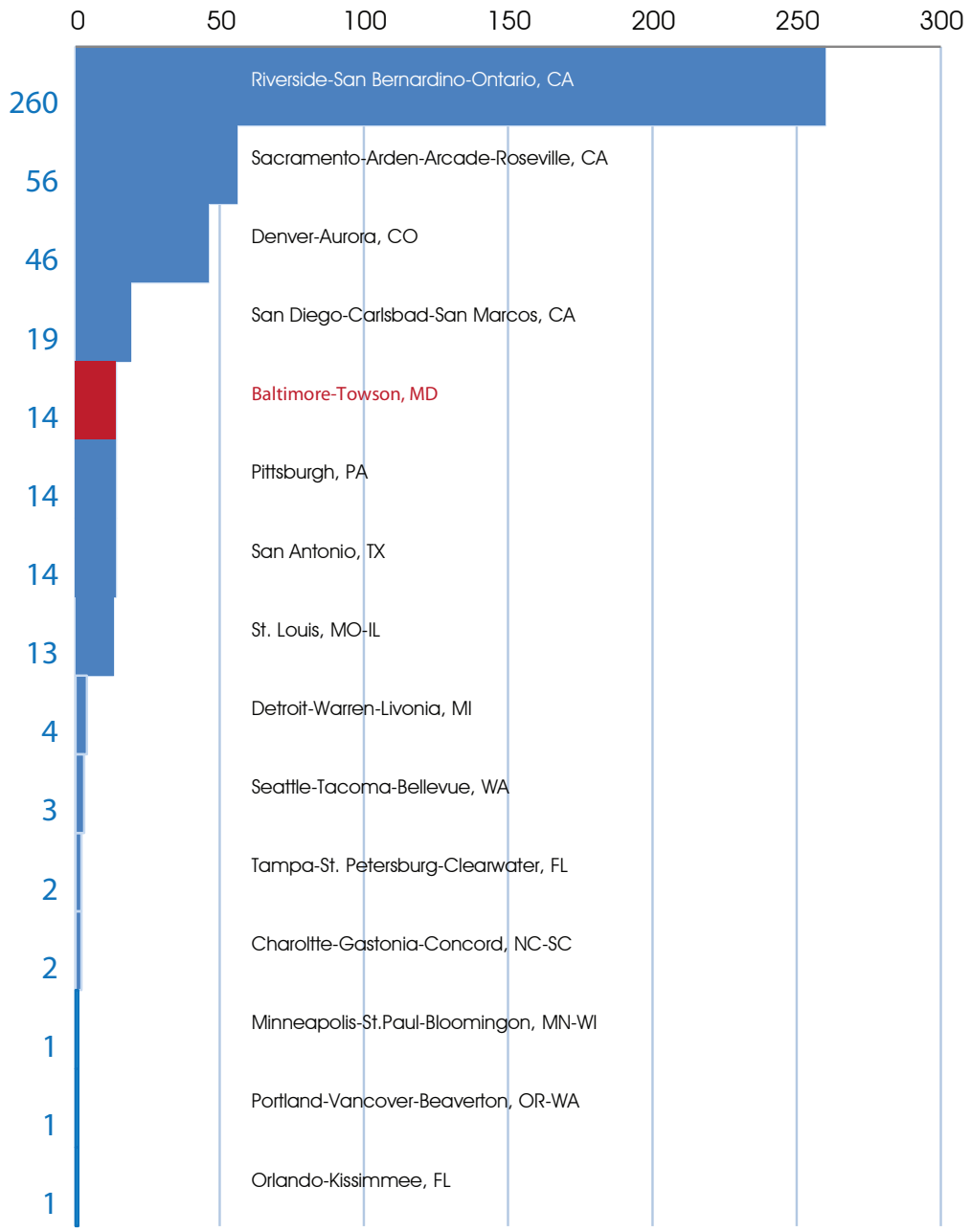


TOTAL NUMBER OF UNHEALTHY OZONE DAYS 2013-2015 by Region

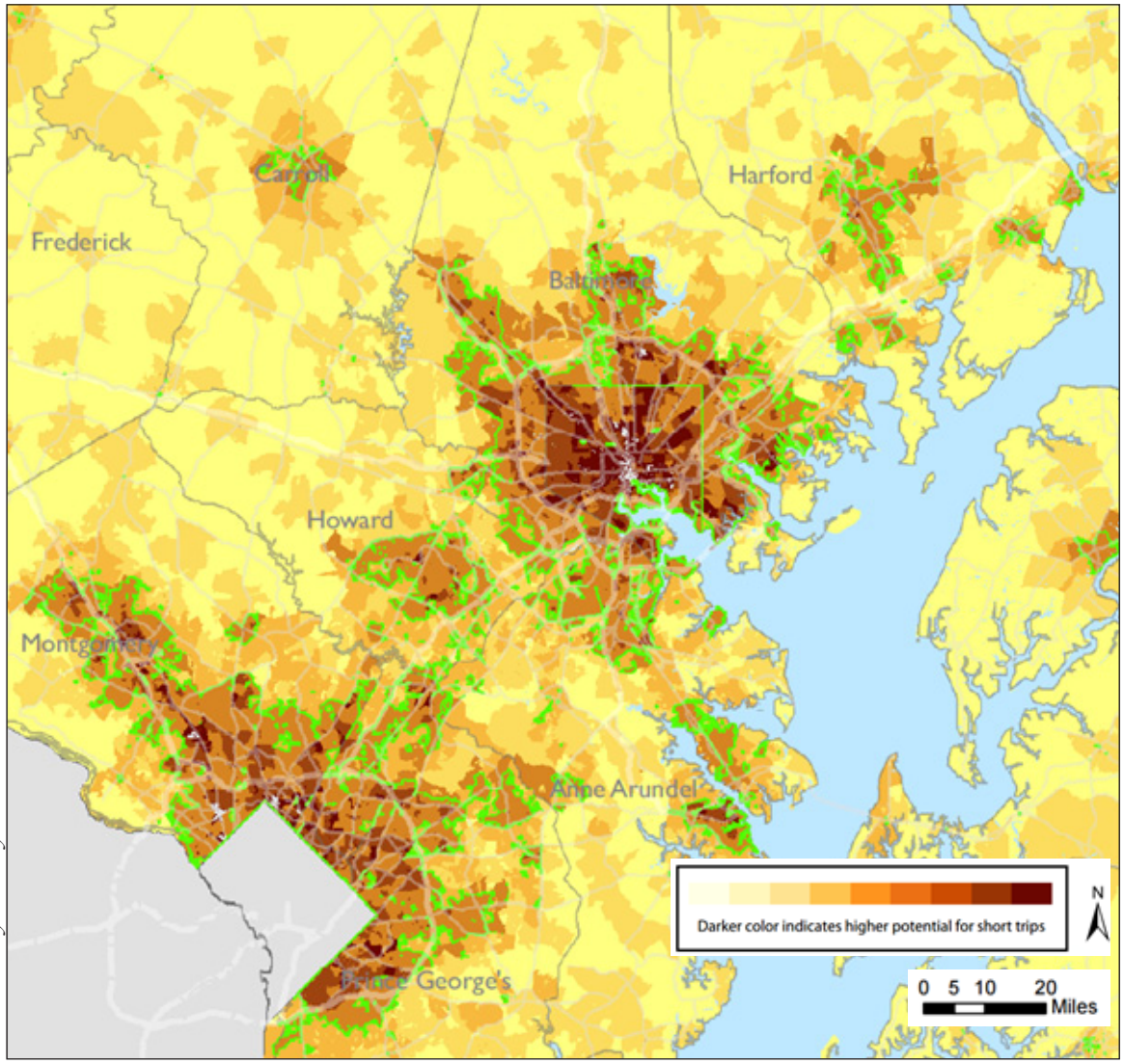


Source: Environmental Protection Agency website, "Air Data" www3.epa.gov/airdata/.

Bike-n-Ride

The Big Bean

Bicycle/Pedestrian "Short Trip Opportunities"



Source: Maryland Bicycle and Pedestrian Master Plan.

From West Baltimore to Westminster, the Bike and Pedestrian Advisory Group works to make the Baltimore region great for biking and walking. The BRTB serves as a forum for planners and engineers to share information and coordinate programs around bike/ped routes. Through thoughtful planning, we support a growing network of safe cycling and pedestrian opportunities across our region.

Adopted in 2014, Maryland's Bicycle and Pedestrian Master Plan (BPMP) identified and published a map of "short trip opportunity areas" from an analysis of existing land uses across Maryland.

The darker areas of this map indicate places with high potential for short trips that could be accomplished by walking or biking. The BPMP analysis depicts bicycle and pedestrian opportunity by analyzing the density of households, jobs, schools and transit stops throughout the state and region. It also includes the density of households without access to a vehicle, since these households must accomplish their daily needs using other transportation modes.

The areas with the greatest potential for bicyclists and pedestrians are outlined in green and comprise approximately 8 percent of the state and a large part of the Baltimore region. Perhaps not surprisingly, these same green highlighted zones are also the areas in which more than 80 percent of Maryland's bicycle and pedestrian crashes were reported between 2006 and 2011.

As we look to the future, these short trip opportunity areas provide planners and decision-makers a means to focus strategies and investments to aid in strengthening the Baltimore region's bike/ped network. These efforts may include safety improvements that encourage more residents to walk or cycle, such as dedicated bike lanes and sidewalks on highly traveled roadways.

For more information:

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Transportation Planner
Bike and Pedestrian Advisory Group
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BMC's Travel Analysis Group produces quarterly Congestion Analysis Reports that illustrate the top 10 worst traffic bottlenecks in the region. Using real-time regional traffic flow data, BMC works to understand why bottlenecks occur and develops strategies to alleviate congestion.

Bottlenecks occur for a wide variety of reasons: construction zones, weather, crashes or high vehicle volume. Bottleneck conditions are determined by comparing the reported speed to the posted speed limit for each segment of road.

In the Baltimore region, reference speed is a maximum of 65 miles per hour. If the reported speed falls below 60 percent of the reference, the road segment is flagged as a potential bottleneck. Then, if the reported speed remains below the posted speed for more than five minutes, the segment is confirmed as a bottleneck location.

Traffic speed is determined from analysis of cellular phone signals from vehicle passengers - the same type of information employed by popular smart phone map applications many of us use daily to navigate from one end of town to another.

BMC monitors the locations, distance, duration and frequency of bottlenecks. Topping the most recent list of worst bottlenecks is the interchange at I-95 North and MD-100, with an average distance of nearly 7 miles of delays for two hours on 234 instances between April and June of 2015. Coming in second is MD-295 North (Baltimore-Washington Parkway) at I-195 near Baltimore Washington International Thurgood Marshall Airport. This bottleneck averages 10.96 miles of delays for 2 hours and 48 minutes at 89 different times during the second quarter of last year.

BMC's bottleneck analysis is used by engineers and planners to help inform recommendations on strategies aimed at reducing roadway congestion. These strategies may include car/vanpooling incentives, alternative work schedules, or transit enhancements to reduce automobile volume at peak times; and, in some cases, lane additions to accommodate traffic.

For more information:

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Travel Analysis Group
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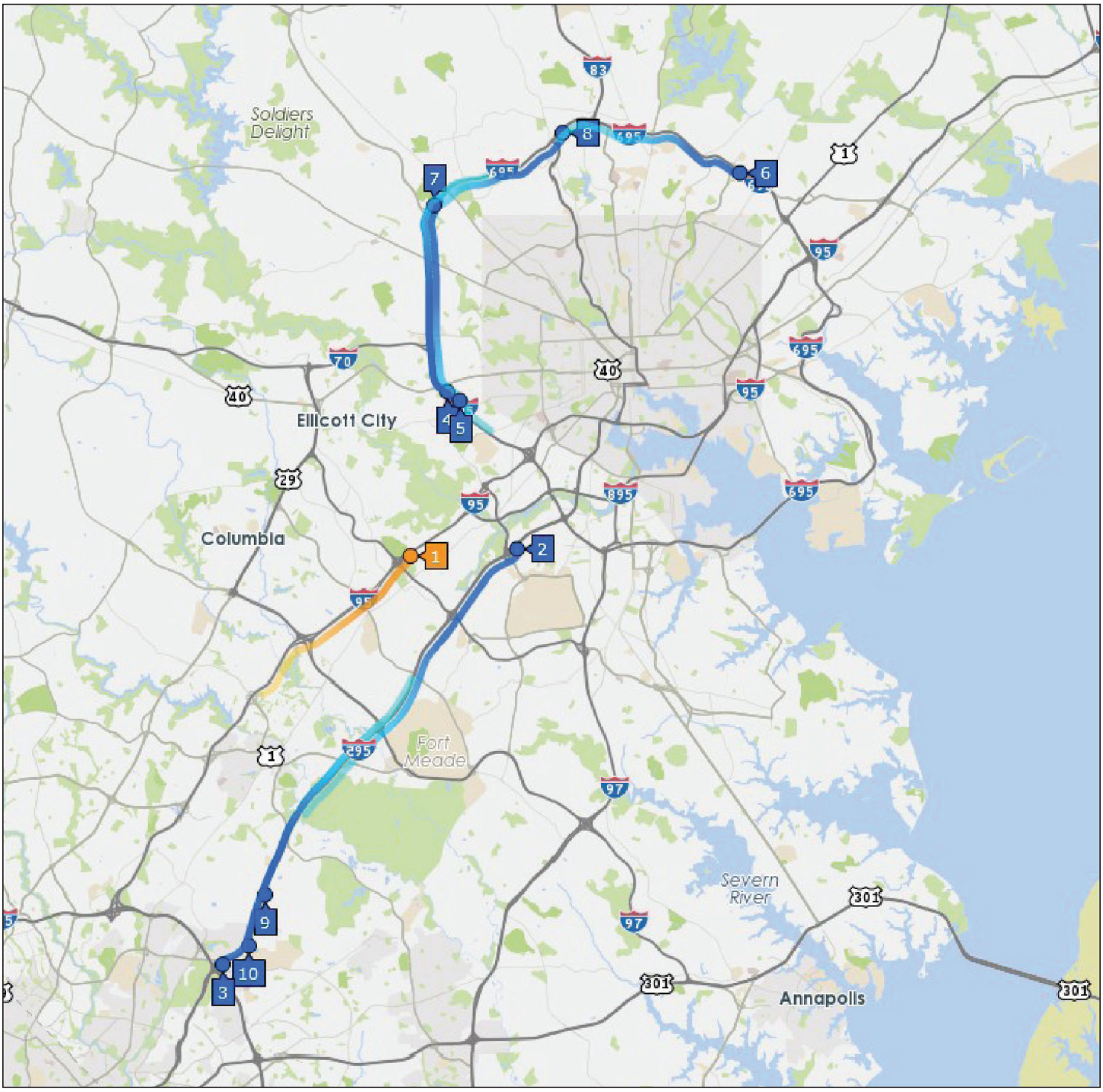
Regional Congestion Analysis (April-June 2015)

	Location	Average Duration	Average max length (miles)	Occurrences	Number of Incidents/ Events	Impact Factor
1	I-95 N @ MD-100/EXIT 43	2 h	6.98	234	117	196,087
2	MD-295 N @ I-195	2 h 48 m	10.96	89	169	163,871
3	MD-295 S @ MD-193	3 h 21 m	12.07	66	115	160,058
4	I-695 CCW @ US-40/EXIT 15	1 h 40 m	8.31	184	227	152,837
5	I-695 CCW @ EDMONDSON AVE/EXIT 14	2 h 36 m	9.4	103	269	151,099
6	I-695 CW @ MD-41/PERRING PKWY/EXIT 30	2 h 5 m	6.26	174	209	136,097
7	I-695 CW @ I-795/EXIT 19	2 h 35 m	9.05	86	358	120,622
8	I-695 CW @ I-83/MD-25/EXIT 23	1 h 39 m	6.95	154	231	105,980
9	MD-295 S @ POWDER MILL RD	2 h 41 m	6.4	102	82	105,134
10	MD-295 S @ GODDARD RD	2 h 35 m	9.14	59	112	83,585

CW = Clockwise *CCW = Counterclockwise*

By Impact Factor: Number of Occurrances x Average Duration in Minutes x Average Length.

Top 10 Regional Bottlenecks



Source: Baltimore Metropolitan Council's Quarterly Congestion Analysis Report for the Baltimore Region: Top 10 Bottleneck Locations.

The Freight Movement Task Force (FMTF) serves as an advisory committee of the BRTB. The FMTF's main function is to provide the public and the freight movement community a voice in the regional transportation planning process.

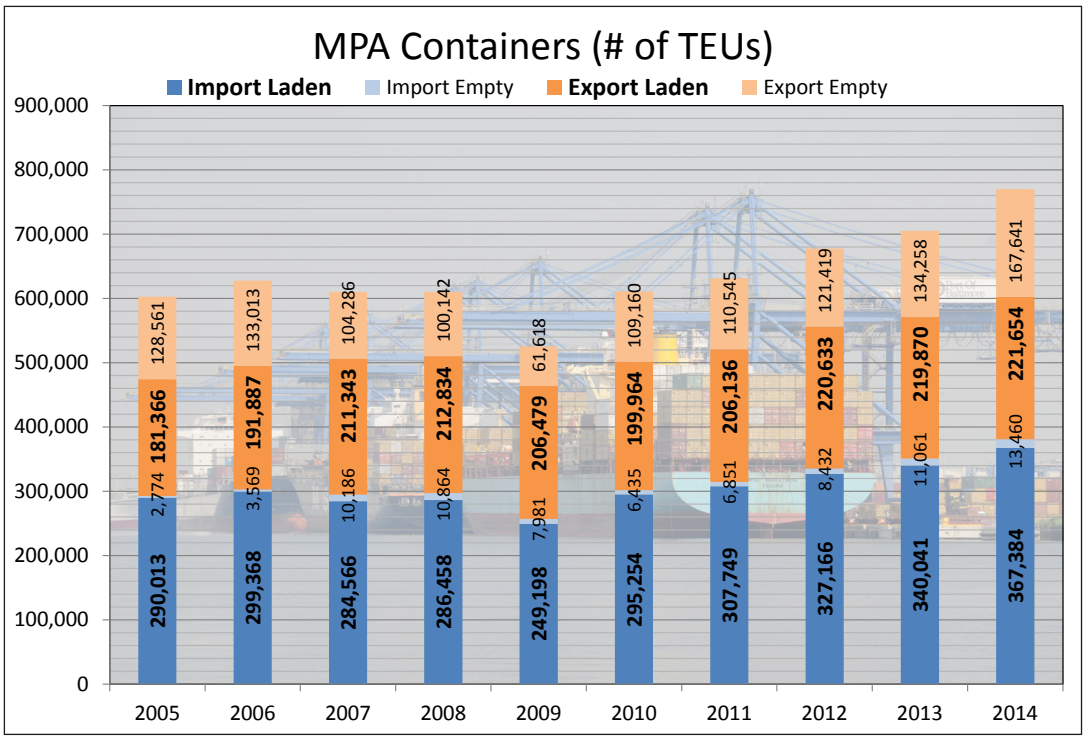
The efficient movement of freight, both within and through a region, as well as between modes, is a vital element of every local economy. Many businesses maintain small inventories and rely on "just-in-time" deliveries of materials and goods. Increasingly, consumers expect the convenience of rapid shipping, particularly when shopping online. A well-connected transportation system ensures businesses and consumers have what they need when they need it, which keeps the wheels of our marketplace in motion.

The Baltimore region is Maryland's leading goods movement center. Each year, more than 307 million tons of freight valued at nearly $1 trillion move over Baltimore's highway, rail, port, and airport facilities, serving domestic and international demand for a wide range of goods.

By 2030, freight on the region's transportation system is projected to nearly double, with significant percentage increases across the modes and the largest volume increase in truck tonnage. The growth in freight demand, combined with the predicted growth in private vehicle travel, commuter or intercity rail, and passenger air services, will stress the capacity of the region's transportation system.

Members of the FMTF include representatives from organizations with freight concerns from across the modes, including: railroad operators; port operators; trucking firms; airport operators; freight shippers and receivers; economic development organizations; and academics. The FMTF also includes staff from the Maryland Department of Transportation (MDOT) and local government representatives. It is a forum for Baltimore's regional freight stakeholders to share information and discuss motor truck, rail, air and waterway concerns.

In 2015, the Helen Delich Bentley Port of Baltimore set records at its public marine terminals. A record 86,149 Twenty-Foot Equivalent Units (TEU) crossed through the port in August, passing the previous single-month record of 79,644 TEU containers, set just two months prior



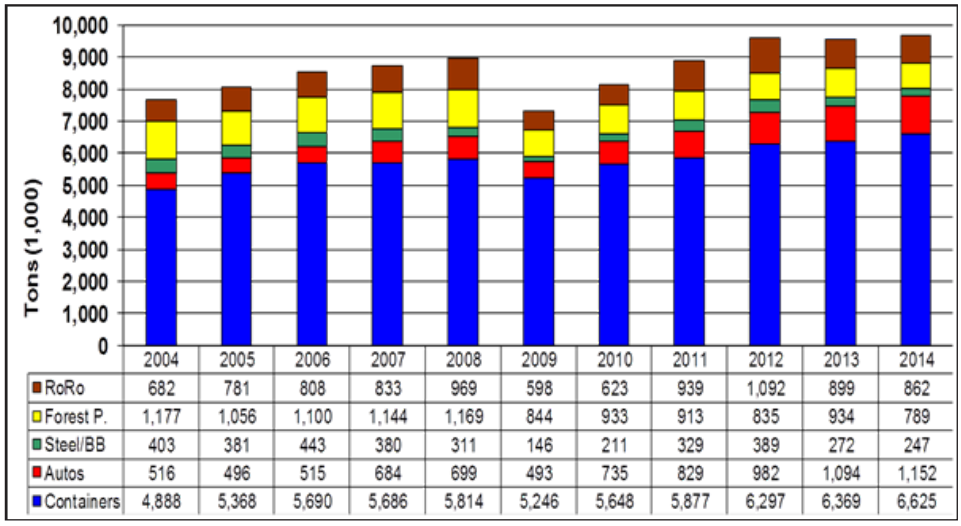
Source: Maryland Port Authority data.

in June. Container shipping at the Port was up nearly 13 percent last year, as compared to 2014.

The Port of Baltimore's public marine terminals also had a record year in 2014. Overall, the port's public and private marine terminals saw 29.5 million tons of international cargo cross its docks at a value of nearly $53 billion. Baltimore is ranked No. 1 among all U.S. ports for handling autos and light trucks, farm and construction machinery, imported forest products, imported sugar and imported aluminum.

Baltimore is ranked ninth for the total dollar value of cargo and 13th for cargo tonnage for all U.S. ports. Business at the Port of Baltimore generates about 13,650 direct jobs, while about 127,600 jobs in Maryland are linked to port activities. The port is responsible for nearly $3 billion in personal wages and salary and more than $300 million in state and local tax revenues.

Port Cargo Tonnage by Type



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
RoRo	682	781	808	833	969	598	623	939	1,092	899	862
Forest P.	1,177	1,056	1,100	1,144	1,169	844	933	913	835	934	789
Steel/BB	403	381	443	380	311	146	211	329	389	272	247
Autos	516	496	515	684	699	493	735	829	982	1,094	1,152
Containers	4,888	5,368	5,690	5,686	5,814	5,246	5,648	5,877	6,297	6,369	6,625

Recently, the Port of Baltimore was named as the top U.S. port for container berth productivity by a leading industry media company. The Seagirt Marine Terminal, the Port of Baltimore's primary container facility, includes 11 cranes, four of which are super Post-Panamax - capable of handling the biggest ships in the world.

Through the FMTF, BMC will continue to support the growth the Port of Baltimore and the freight industry that is so critical to our region.

For more information:

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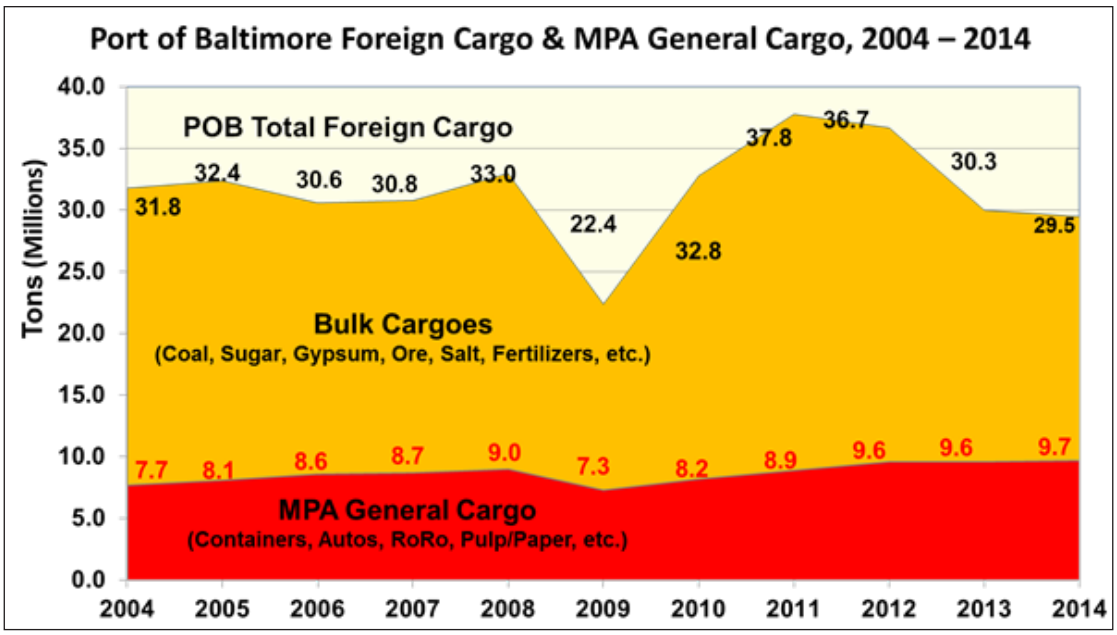


Source: Maryland Port Authority data.

The BRTB's Regional Safety Subcommittee has played an active role in the development and implementation of the 2006-2010 and 2011-2015 Strategic Highway Safety Plans (SHSP), and the development of the 2016-2020 SHSP. BMC staff coordinates and participates on several SHSP emphasis area teams.

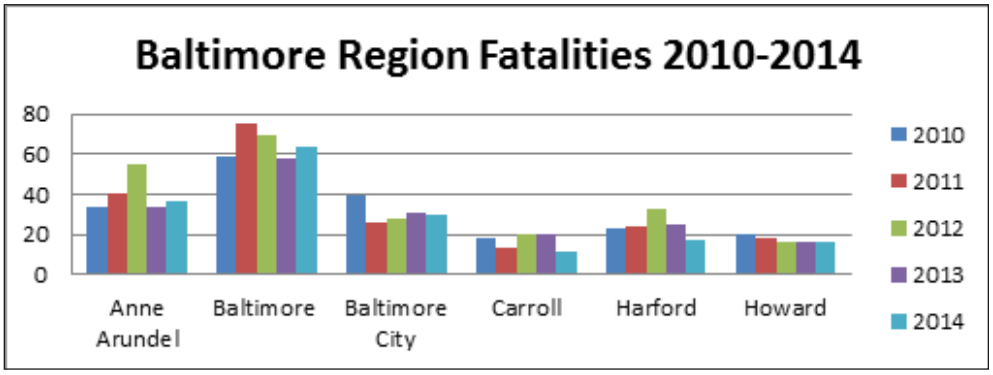
The 2016-2020 SHSP continues the legacy of previous safety action plans with a detailed framework for the next chapter of transportation safety in Maryland. The plan is developed around performance measures and effective strategies to achieve long-term goals. The 2016-2020 SHSP was designed to cut roadway fatalities in half by 2030, with a long-term goal of ending traffic fatalities and serious injuries on our roadways.

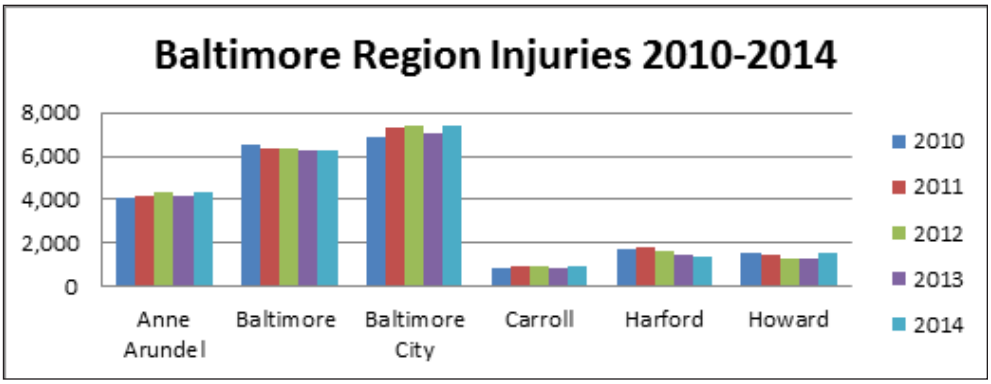
In 2014, Maryland reduced the number of traffic fatalities to 443, which is the lowest number since 1948. The Baltimore region accounts for 175 - or 40 percent - of these fatalities, a number and percentage that has remained roughly the same during the past five years. In 2012, both the state and region saw a spike in overall highway fatalities (511 and 221, respectively).

Within the region, Baltimore County accounts for the largest number of fatalities on the highway network, followed by Anne Arundel County and Baltimore City. The accompanying chart shows the trends in highway fatalities across BMC's six member jurisdictions from 2010-2014.

The region also accounts for roughly 50 percent of statewide injuries from 2010-2014, with about 21,900 in 2014 (statewide about 44,100). As seen in the accompanying chart, Baltimore City accounts for the largest number of injuries followed by Baltimore and Anne Arundel Counties. Carroll County, by comparison, has the lowest number of injuries in the region.

Since 2009, BMC has partnered with the Maryland Highway Safety Office (MHSO) to bring the pedestrian and bicyclist safety campaign, Street Smart, to the Baltimore region. On average, the





Baltimore region accounts for 47 percent of the statewide pedestrian fatalities (100 statewide in 2014, 48 in the region) and 55 percent of the statewide pedestrian injuries (3,400 statewide in 2014, 1,920 in the region).

Achieving the goals outlined in the SHSP will require a sustained and steadfast commitment from state and local agencies and key safety partners. SHSP stakeholders are crucial to improving roadway safety in Maryland through implementation of the strategies and action steps related to the four Es of safety - engineering, enforcement, education and emergency medical services. In addition, developing new partnerships will be a vital part of our strategy to address emerging roadway safety issues, such as vehicle connective technologies and traffic safety culture.■

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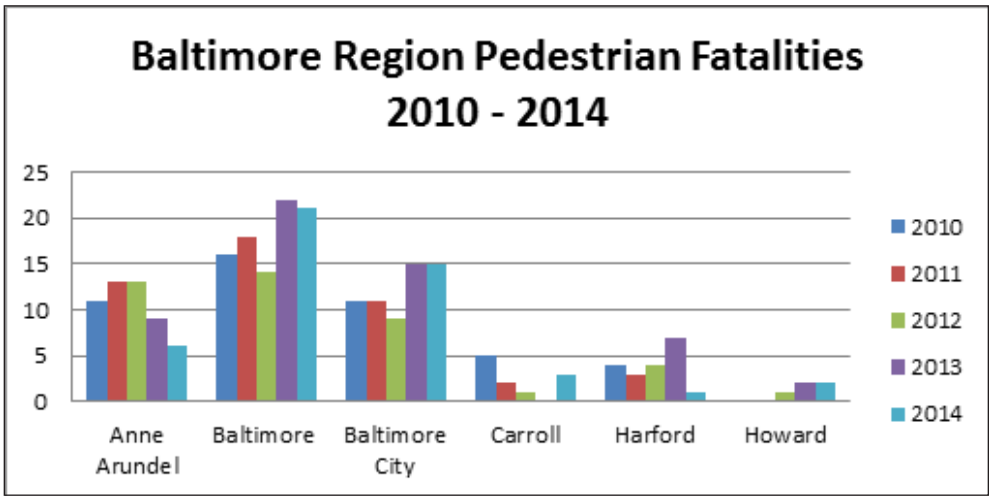

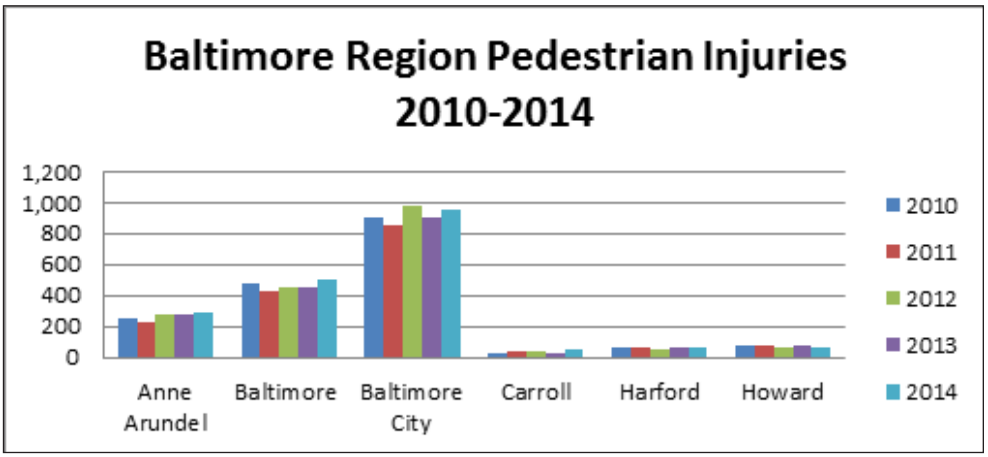

2014 crash data is preliminary and subject to change. Data are derived from the State Highway Administration, based on reports submitted and processed by the Maryland State Police Central Records Division (MSP CRD). Includes reports submitted through the new Automated Crash Reporting System (ACRS). Pedestrian includes both persons on foot and bicyclists.

At the request of the Board of Directors, BMC developed the Baltimore Regional Transit Needs Assessment in the fall of 2015. This document, meant to be a resource for BMC's members, is a comprehensive assessment of the Baltimore region's multimodal transit network and makes recommendations for a transit system that reflects local priorities and supports economic growth.

The Baltimore area has a complex regional transit system providing services across multiple modes. Peer comparisons are a useful way to get a sense of where a system's performance stacks up relative to similar agencies. However, each system is built around the unique geographic, cultural, economic and demographic factors present in the region. As such, comparisons are always approximate.

Peer agencies were identified by reviewing similarly ranked systems within the 2014 American Public Transit Association (APTA) Fact Book, a generally accepted publication of reference within the industry. Relative to the Maryland Transit Administration (MTA), BMC selected the next highest and next lowest ranked transit agency by mode. Staff identified agencies that experience a similar volume of vehicles operated during peak hours and number of unique passenger trips aboard public transit.

BMC also sought out comparable regions demographically, which include Cleveland, Denver-Aurora, Minneapolis-St. Paul, Pittsburgh, and St. Louis. It should be noted that transit agencies serving these urbanized areas don't provide service across all of the modes.

The accompanying charts compare our modes to national peers across a set of operating measures utilized by transit professionals for three modes: commuter rail, light rail, and bus.

MTA's MARC provides commuter rail service in the Baltimore region. MARC ranks in the top 10 nationwide in terms of service provision and ridership in 2012. Compared to peers, MARC has one of the older fleets as measured by average fleet age, though these statistics do not incorporate recent and planned procurement of new MARC coaches.

MTA operates one of the smaller light rail systems nationwide, ranking 14th and 16th among 22 nationwide in vehicles operated in maximum service and unique - or "unlinked" - passenger trips, respectively. MTA also operated the fourth oldest fleet of light rail vehicles nationwide in 2012.

Each year MTA is required to submit to the General Assembly a comparison report of peer agencies operating bus service, and BMC included these peers for purposes of this chart. Including more peer agencies for bus service is useful since this mode figures so prominently in the Baltimore region. MTA operates one of the largest bus services in the country as of 2012, ranking 14th out of more than 600 bus service agencies nationwide. Among peers, MTA ranked 4th out of 16 in average bus fleet age. This does not include forty-one 40-foot hybrid diesel-electric buses that were scheduled to be delivered to MTA in FY 2015.

BMC will continue to serve as a resource to its board and MTA as each considers ways to support and improve the transit system for the Baltimore region.■

Commuter Rail

Agency	Urbanized Area (UZA) Name	Service Area Population	Operating Expenses	Average Fleet Age in Years	2012 Vehicles Operated Maximum Service		2012 Unlinked Passenger Trips	
					Amount	Rank	Amount (Thousands)	Rank
APTA Peers								
Maryland Transit Administration	Baltimore	2,203,663 (2,203,663)	$97,050,916	17	132	8	8,532.20	9
Peninsula Corridor Joint Powers Board	San Francisco-Oakland	3,281,212 (3,690,367)	$97,555,152	20.7	100	9	12,999.30	8
Southern California Regional Rail Authority	**Los Angeles-Long Beach-Anaheim**	**12,150,996 (8,341,002)**	**$171,572,964**	**10.8**	**172**	**7**	**13,155.80**	**7**
Virginia Railway Express	Washington, DC-VA-MD	4,586,770 (680,400)	$61,552,829	12.8	87	10	4,702.20	10
Demographic Peers								
Metro Transit	Minneapolis-St. Paul, MN-WI	2,650,890 (1,805,940)	$16,419,740	3.2	22	19	700.30	19

Light Rail

Agency	Urbanized Area (UZA) Name	Service Area Population	Operating Expenses	Average Fleet Age in Years	2012 Vehicles Operated Maximum		2012 Unlinked Passenger Trips	
					Amount	Rank	Amount (Thousands)	Rank
APTA Peers								
Central Puget Sound Regional Transit Authority	Seattle, WA	3,059,393 (2,781,740)	$51,370,132	4.3	26	16t	8,701.10	17
Maryland Transit Administration	Baltimore, MD	2,203,663 (2,203,663)	$43,345,659	18.3	38	14	8,796.30	16
Metro Transit	Minneapolis-St. Paul, MN-WI	2,650,890 (1,805,940)	$27,886,232	7.7	27	15	10,498.20	14
Santa Clara Valley Transportation Authority	San Jose, CA	1,664,496 (1,880,876)	$61,685,649	10.7	55	13	10,372.90	15
Demographic Peers								
Bi-State Development Agency of the Missouri-Illinois Metropolitan District	St. Louis, MO-IL	2,150,706 (1,540,000)	$62,122,401	13.3	58	10	17,000.00	10
Denver Regional Transportation District	Denver-Aurora, CO	2,374,203 (2,619,000)	$68,454,319	6.7	102	5	20,639.10	7
Port Authority of Allegheny County	Pittsburgh, PA	1,733,853 (1,415,244)	$52,043,343	20.4	56	11t	7,130.40	18
The Greater Cleveland Regional Transit Authority	Cleveland, OH	1,780,673 (1,412,140)	$12,339,684	31	13	21	2,856.40	21

Bus

Agency	Urbanized Area (UZA)	Service Area Population	Operating Expense	Average Fleet Age in Years	2012 Vehicles Operated Maximum		2012 Unlinked Passenger Trips	
					Amount	Rank	Amount (Thousands)	Rank
APTA Peers								
City and County of Honolulu Department of Transportation Services	Urban Honolulu, HI	802,459 (953,207)	$178,871,978	10.9	434	25	76,296.60	13
Maryland Transit Administration	Baltimore, MD	2,203,663 (2,203,663)	$297,374,548	7.1	599	14	73,574.80	14
Metro Transit	Minneapolis-St. Paul, MN-WI	2,650,890 (1,805,940)	$248,515,225	5	747	12	69,855.00	15
Miami-Dade Transit	Miami, FL	5,502,379 (2,496,435)	$304,832,932	8.5	693	13	77,859.00	11
Pace - Suburban Bus Division	Chicago, IL-IN	8,608,208 (5,630,238)	$160,555,855	7.7	584	15	32,191.00	33
MTA Report Peers								
Dallas Area Rapid Transit	Dallas, TX	5,121,892 (2,423,480)	$242,592,248	12.2	509	17	38,378.90	26
King County Department of Transportation	Seattle, WA	3,059,393 (1,957,000)	$430,144,035	7.8	909	8	95,592.10	10
Metropolitan Atlanta Rapid Transit Authority	Atlanta, GA	4,515,419 (1,574,600)	$211,539,134	7.6	443	24	61,596.70	16
Metropolitan Transit Authority of Harris County	Houston, TX	4,944,332 (3,527,625)	$289,899,026	8.2	769	11	58,100.00	19
Port Authority of Allegheny County	Pittsburgh, PA	1,733,853 (1,415,244)	$282,746,282	7.8	572	16	55,704.70	20
Santa Clara Valley Transportation Authority	San Jose, CA	1,664,496 (1,880,876)	$218,163,621	8.4	357	28	32,338.40	32
Utah Transit Authority	Salt Lake City-West Valley City, UT	1,021,243 (2,165,290)	$106,822,500	5.4	503	18	20,151.40	45
Washington Metropolitan Area Transit Authority	Washington, DC-VA-MD	4,586,770 (3,719,567)	$565,803,610	6.6	1,327	5	136,795.30	6
Demographic Peers								
Bi-State Development Agency of the Missouri-Illinois Metropolitan District	St. Louis, MO-IL	2,150,706 (1,540,000)	$139,581,933	7.9	313	32t	29,120.50	36
Denver Regional Transportation District	Denver-Aurora, CO	2,374,203 (2,619,000)	$301,669,047	9.7	822	9	76,717.00	12
The Greater Cleveland Regional Transit Authority	Cleveland, OH	1,780,673 (1,412,140)	$142,998,626	8.3	303	34	33,858.00	29

Source: Baltimore Metropolitan Council's Baltimore Regional Transit Needs Assessment, October 2015.

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COOPERATIVE PURCHASING

BMC houses the Baltimore Regional Cooperative Purchasing Committee (BRCPC), which helps members leverage their collective buying power to achieve the most value for taxpayer dollars. By managing procurement opportunities and sharing information and best practices, BRCPC also alleviates the administrative burden of the purchasing process.

Since 2009, BRCPC and the Metropolitan Washington Council of Governments (MWCOG) have worked together through the Mid-Atlantic Purchasing Team (MAPT) to achieve even more savings on goods and services used regularly by local governments.

HOW THE PROCUREMENT PROCESS WORKS

IDENTIFY NEED
The BRCPC membership identifies regional and multi-regional procurement opportunities based on current and emerging needs. A lead jurisdiction is selected and given the responsibility to conduct the bid and contract award on behalf of membership.

DEVELOP SPECS
Specifications for a cooperative procurement are developed jointly between the lead buyer and other regional buyers with expertise in that commodity or service. This can also include consultation with operational and industry experts.

AWARD CONTRACT
The contract award is carried out in accordance with the lead jurisdiction's laws and procedures. Jurisdictions that ride this contract award enter into their own contract with the awardee under the standard terms of the lead jurisdictions contract.

PURCHASE
Individual purchases can now be made based on the needs of membership. On a practical level, these contracts can draw nationwide use by public and nonprofit entities whose legislation and procedures allow them to do so.

AN OVERVIEW OF BRCPC BUSINESS

47 BRCPC contracts

11 Mid-Atlantic Purchasing Team contracts

4 Subcommittees
identify bidding opportunities;
Energy Board · Education · Technology · Public Works

SINGLE BIGGEST SAVINGS/COST AVOIDANCE

Energy Board
23 municipalities participating

$117 Million+
saved since program inception
$22.1 Million FY 2015 savings
benefit compared to BGE PoLR fixed-rate alternative

Planning Ahead
80-85: Percent of expected energy usage purchased at fixed rate
15-20: Percent purchased on spot market

Combined Spending Power: $106.1 million electricity • $13 million natural gas • *cost for FY 2015, excludes BGE distribution costs*

CONTRACT SPOTLIGHT

Furniture – Led by Howard County Government, this procurement has the farthest reach with participants in CA, TX, UT, MO, NC, and all over the Mid-Atlantic region. It accounts for **$10 million** in total spending a year.

Office Supplies – Led by Anne Arundel County Public Schools, this procurement started with an estimated volume of $4.5 million and within 2.5 years is valued at more than $11 million. **Savings per municipality up to 14 percent** of total (participant) purchases or more than $1.5 million annually.

BID DAY SAVINGS SPOTLIGHT

8%	Art/Classroom Supplies	Wicomico Co. Schools
3-41%	Generator Maintenance	Harford Co. Gov.
31%	Ice Melter	Metro. Washington COG
44%	Large & Specialty Lamps	Anne Arundel Co.
37%	Painting Services:	Baltimore County Gov.
20%	Sign Blanks	Anne Arundel County Gov.
19%	Snow Plow Blades	Carroll County Gov.

(Above) The Baltimore Metropolitan Council (BMC) and Baltimore County hosted the seventh annual Meet the Primes networking event, which connects small and minority-owned businesses with prime contract bidders, on Wednesday, October 14, 2015, at the Maryland State Fairgrounds. Photo: BMC

(Right) The Metropolitan Washington Council of Governments (MWCOG) honored the BMC with the Regional Partnership Award for its cooperative purchasing work on Wednesday, December 9, 2015, at MWCOG's annual membership meeting and awards luncheon.

Mayor Muriel Bowser, District of Columbia, presented the award to Baltimore County Executive Kevin Kamenetz, chair of BMC's 2015 Board of Directors. Photo courtesy of MWCOG

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The Traffic Incident Management (TIM) committee assists in regional emergency preparedness and response planning by providing communication, cooperation and coordination between agencies, jurisdictions and other stakeholders.

BMC works with the Maryland State Highway Administration (SHA), Maryland Department of Transportation (MDOT), Maryland Transportation Authority (MDTA), and the Maryland State Police (MSP) to help build relationships with the region's jurisdictions and provide support for the Coordinated Highways Action Response Team (CHART) traffic patrols.

Motorist assistance activities include changing tires, providing gas to get a vehicle to the nearest fueling station, and pushing a broken down vehicle off the road. At incidents, CHART patrols perform traffic and scene management, scene clean up, and assist other responders as needed.

In 2013, the General Assembly funded a significant expansion of CHART traffic patrols, which became fully operational in July 2014. The map below illustrates CHART patrol routes.

The patrol expansion is enabling the CHART program to assist more travelers, improving traveler safety by getting roads cleared more quickly, and reducing congestion and delay. In 2013 alone, incidents were cleared 30 percent faster with CHART patrols on-scene.

Today, roving traffic patrols operate around the clock in the most congested areas of Maryland, as opposed to limiting routes to peak periods. Patrols were also added to highways in western Maryland.

Statewide, patrol drivers aid a motorist with a disabled vehicle every 14 minutes and assist at an incident every 22 minutes. As a result of the expansion, CHART patrols provided 35 percent more motorist assists and 45 percent more incident assists in the Baltimore region in the second half of 2014.

Once analysis of last year's data is complete, we are confident CHART will have provided even more benefits to Maryland travelers in 2015.

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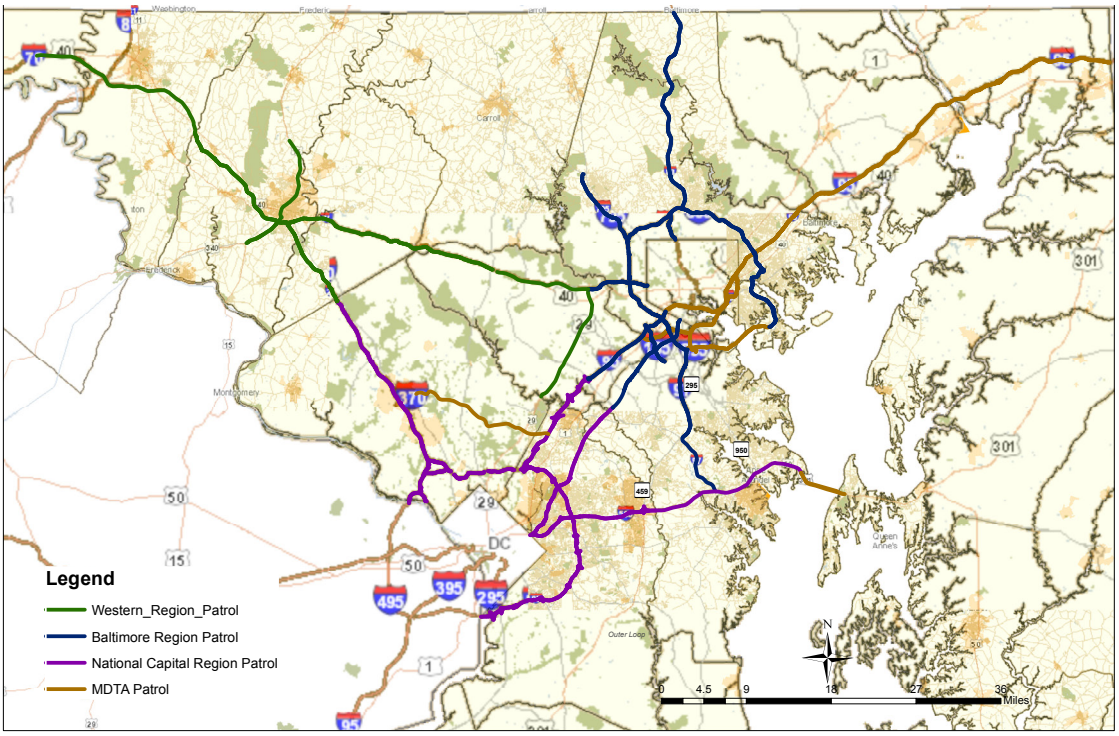
CHART
Statewide Patrol Routes



(Left) Source: Maryland State Highway Administration, July 21, 2015.

(Above and right) In 2011, the Baltimore Urban Area Homeland Security Work Group allocated funds for both the Anne Arundel County Fire Department and the Howard County Department of Fire and Rescue Services to purchase Medical Ambulance Buses (MAB) to be available for use as a regional resource. The MABs are specially-equipped buses that can be used as emergency medical vehicles. They can be configured to carry 14 patients on stretchers, 24 "walking wounded," eight wheelchair patients, or a combination of these. The MABs can also carry six medical personnel who can administer care en-route to the hospital.

Photo courtesy of the Baltimore Urban Area Homeland Security Work Group

(Opposite page, bottom) BMC, as a member of the Baltimore Urban Area Security Initiative (UASI), works with the region's emergency management departments to conduct outreach. The "Ready? Set? Good!" emergency preparedness campaign urges residents to ready their homes before a situation occurs. Photo: BMC

BMC's Workforce Development Committee is comprised of the region's workforce investment agencies, which focus on employment and educational issues throughout the metropolitan area. BMC's work includes labor market analysis, project implementation and workforce development planning. BMC is focused on implementing recommendations from the Baltimore Region Workforce Development Plan (RPSD), released in March 2015.

A critical component of the regional labor market research is the identification and analysis of emerging career opportunities. Central to this analysis are middle-skill jobs; positions whose entry points require some level of education beyond a high school diploma, but less than a four-year college degree.

Middle-skill jobs are important to our region for two key reasons. First, as shown in the chart below, these positions pay an average hourly wage of $20.32 - roughly a family supporting wage for a single parent with one child in Baltimore City. Second, while the job titles have changed, these positions represent the segment of the labor market that has traditionally been the backbone of the middle class.

Through market analysis, BMC has identified six employment sectors that are likely to make the most middle-skill hires in the coming years: healthcare; construction; IT/cybersecurity; transportation/logistics; business services; and manufacturing. Preparing current and future workers to fill these positions will require planning and cooperation between the state, local governments, adult educators and employers in the region.

Through the Workforce Development Committee, BMC aims to play a central role in strengthening the pipeline of qualified workers and securing the region's share of the middle-skill labor market. ■

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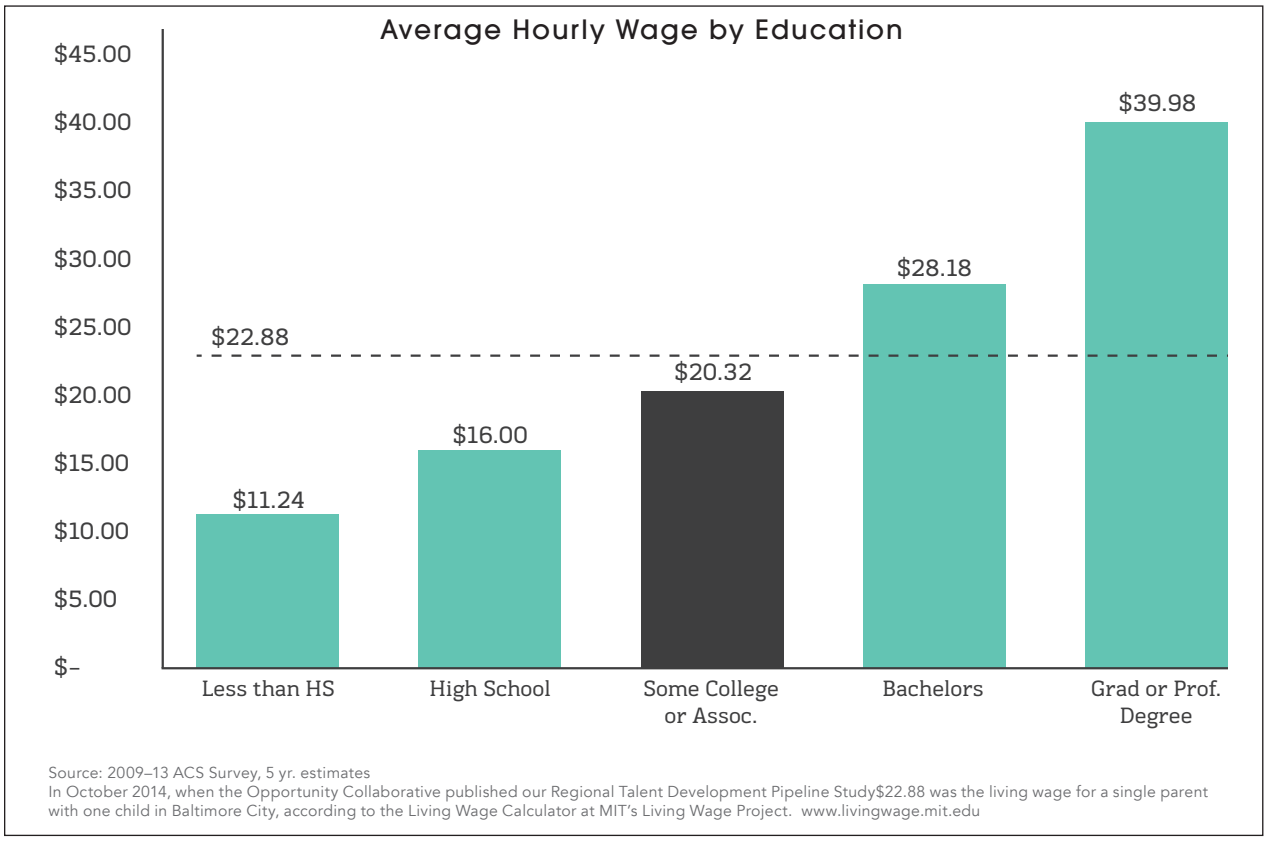

Source: 2009–13 ACS Survey, 5 yr. estimates
In October 2014, when the Opportunity Collaborative published our Regional Talent Development Pipeline Study$22.88 was the living wage for a single parent with one child in Baltimore City, according to the Living Wage Calculator at MIT's Living Wage Project. www.livingwage.mit.edu

(Lower left) Delegate Stephen Lafferty, speaks during the release of the Baltimore Regional Workforce Development Strategic Plan on Tuesday, March 24, 2015, in Annapolis. Photo: BMC

BMC staffs two committees focused on regional housing issues. The Baltimore Regional Fair Housing Group, comprised of local housing staff, develops and implements cooperative government strategies to address fair housing needs. BMC's Housing Committee is a broader forum that provides government and nonprofit stakeholders with updates on housing policy and a venue to discuss regional housing issues.

In 2014, the region released Strong Communities, *Strong Region: The Baltimore Regional Housing Plan and Fair Housing & Equity Assessment (FHEA)*. *Strong Communities, Strong Region* was a data driven analysis of the region's housing market, supply and challenges. Central to this analysis is an understanding the region's residents' housing needs.

More than 70,000 renter households in the Baltimore metropolitan area spend more than 50 percent of their income on housing, making them severely cost burdened, meaning the resources they have for food, transportation and other basic costs of living are highly constrained. The federal standard for cost burden has long been 30 percent of household income, so the higher 50 percent threshold indicates acute stress on household finances.

The accompanying table shows that this burden is especially focused at the lowest income levels. For example: families surviving on disability benefits or supported by a service worker, such as a food prep worker or retail salesperson. Of the roughly 90,000 renting households in the region at that income level, more than half are severely cost burdened.

However, not all of the region's cost burdened households fall into the lowest income brackets. Depending on the local rental market, some families at relatively high incomes are severely cost burdened as well. Many of these households are supported by essential public service professions. As the housing market continues to rebound from the Recession, the region will need to monitor its rental market so that teachers, first responders and other government employees are able to live in the jurisdictions in which they work.

Through its committees, BMC aims to support all of the stakeholders working to ensure a robust stock of quality, affordable rental housing across the Baltimore region.■

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Severely Cost Burdened Households in the Region

INCOME LEVEL – HUD NAME	% MEDIAN FAMILY INCOME (MFI)	4-PERSON HOUSEHOLD INCOME	NUMBER OF HOUSEHOLDS	EXAMPLES	SEVERELY COST BURDENED
EXTREMELY LOW-INCOME	Below 30%	Under $26,000	Approx. 90,000 (26% of renters)	• Single person on disability ($8,500/yr.) • Food prep worker with two dependents ($22,900/yr.) • Retail Salesperson with three dependents ($24,900/yr.)	51,000 households
VERY LOW-INCOME	30-50%	$26,000-$43,000	Approx. 60,000 (17% of renters)	• Single teacher's assistant ($28,700/yr.) • Substitute teacher with two dependents ($35,000/yr.) • Cashier and carpenter's helper with three dependents $45,600/yr.)	17,000 households
LOW INCOME	50-80%	$43,000-$68,000	Approx. 66,000 (19% of renters)	• Single massage therapist ($39,070/yr.) • Home health aide and janitor, no dependents ($48,770/yr.) • Firefighter with two dependents ($57,320)	4,300 households

Source: Opportunity Collaborative's Baltimore Regional Plan for Sustainable Development, Figure 2-H, page 22.

Tyvek
HomeWrap

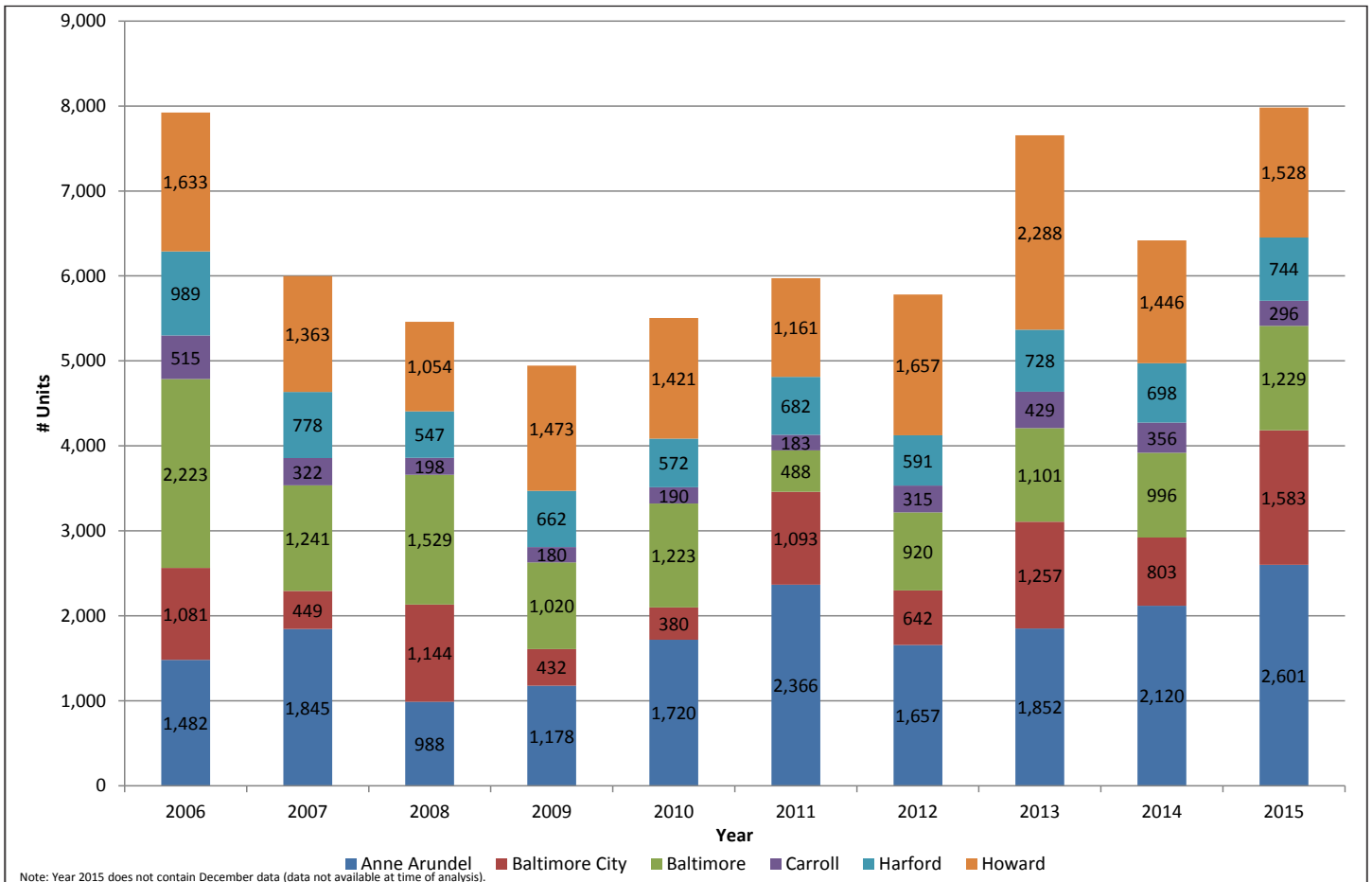
BMC's Cooperative Forecasting Group compiles, formats and analyzes the region's building permit information. With this information, BMC is able to track the growth of residential and non-residential development over space and time, which informs infrastructure planning as populations change.

Development tracking is important to the transportation planning process as it helps to determine the placement of household and employment growth, which in turn affect the demands on the region's transportation network. BMC prepares monthly, quarterly and annual building permit reports that summarize building permit data provided by each individual jurisdiction.

Permit activity for new residential units has varied substantially during the course of the past decade. The effects of the burst of the housing bubble in 2006 were reflected in the region's residential building permit activity - depicted in the diagram below. The decline was marked as the number of residential units permitted annually fell from 7,923 units in 2006 to 4,945 in 2009, a decrease of 37.6 percent. While the number of permitted residential units has not returned to the levels of the early to mid-2000s, there has been pronounced growth in the past six years, as the annual number of units permitted increased 61.4 percent from 2009 to 2015.

From 2006 to 2015, Anne Arundel County and Howard County combined

Permitted New Residential Units by Year & Jurisdiction, 2006-2015



Note: Year 2015 does not contain December data (data not available at time of analysis).
Source: Baltimore Metropolitan Council, Building Permit Data System; Local jurisdictions.

to account for more than half of all units permitted in the region, with 28 and 23.6 percent, respectively. Baltimore County and Baltimore City followed with 18.8 and 13.9 percent, respectively.

As illustrated in the diagram below, the Baltimore region has averaged nearly $2.3 billion per year in permitted non-residential construction investment during the last 10 years. This figure is calculated by compiling the projected construction costs reported in permit applications for all new construction as well as additions, alterations and repairs to existing buildings.

Non-residential permit activity suffered a set-back shortly after the recession hit in 2008, about two years after the beginning of the housing market correction. Permitted non-residential value decreased 43.3 percent from the high of $3.2 billion in 2008 to $1.8 billion in 2010. Since 2010, non-residential permit activity has stabilized, averaging just under $2 billion during the past five years.

Baltimore City accounted for the largest single share of non-residential permitted value with 35.4 percent of the regional total, followed by Baltimore County (19.2 percent), Anne Arundel County (18.1 percent), and Howard County (17.1 percent), during the 10-year period.

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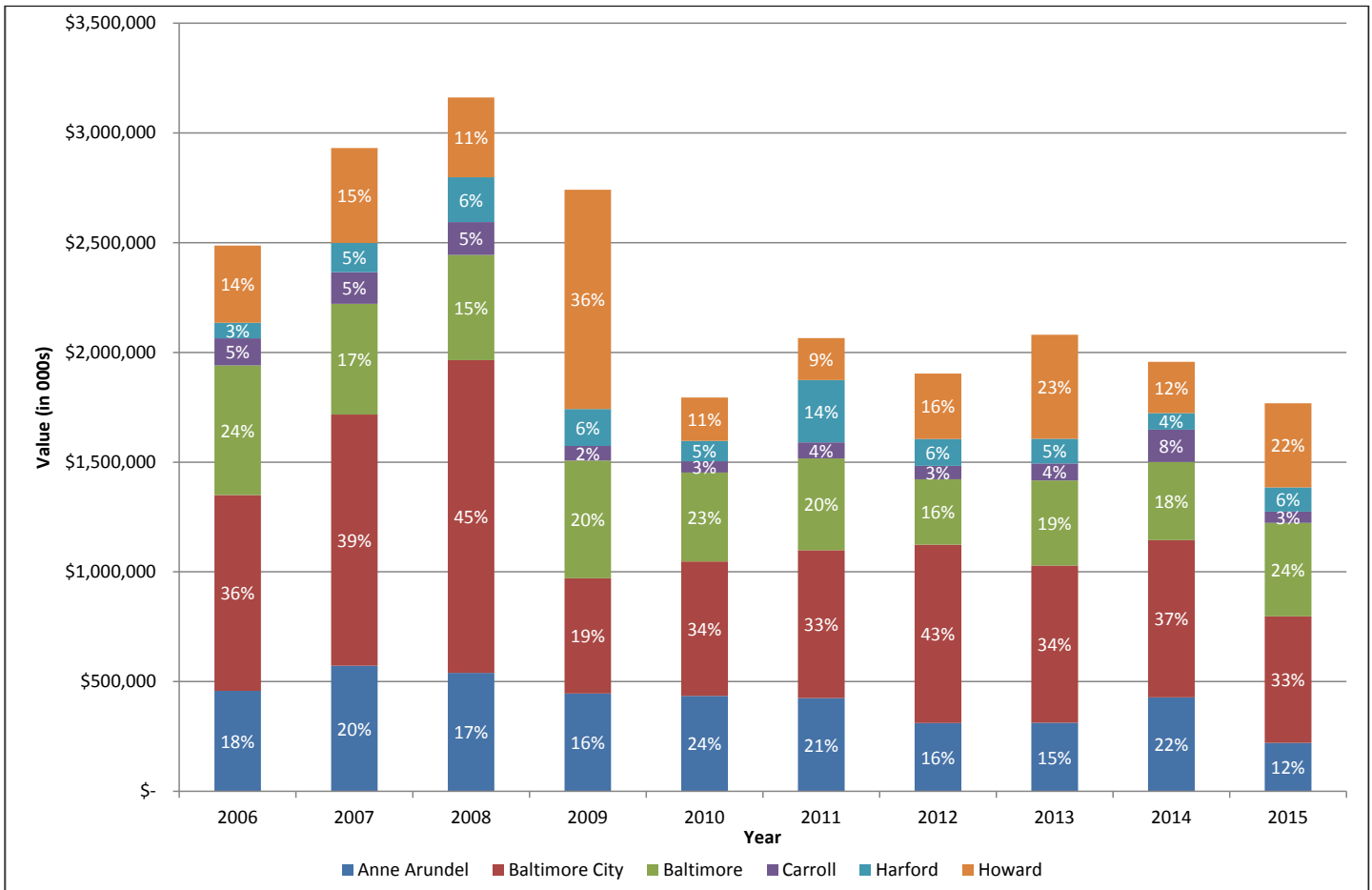
Estimated Costs of Permitted Non-Residential Construction



Note: Year 2015 does not contain December data (data not available at time of analysis).
Source: Baltimore Metropolitan Council, Building Permit Data System; Local jurisdictions.

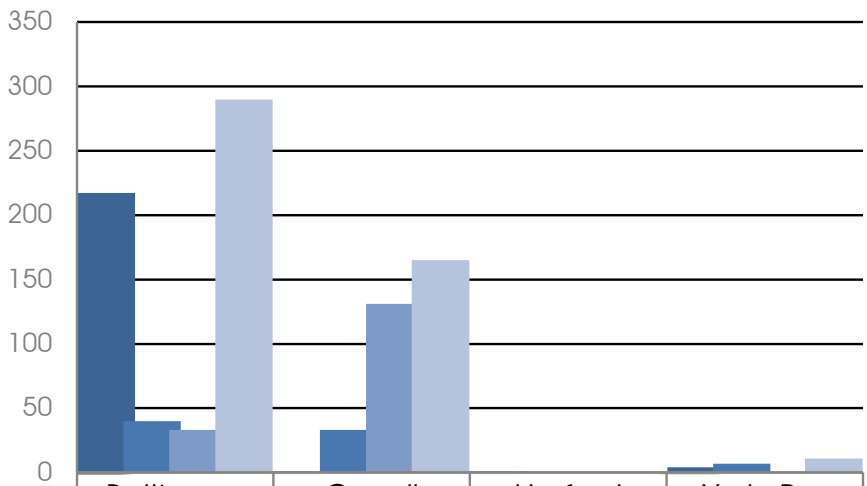
BMC convenes and provides staff support to the Reservoir Watershed Protection Committee (WPC) and Reservoir Technical Group (RTG), which promotes water quality for the three reservoirs that serve the Baltimore regional water supply. These committees advise member jurisdictions on land use and land management strategies within the watershed areas, which aim to ensure a sustainable supply of healthy water for years to come.

The Loch Raven, Prettyboy and Liberty reservoirs provide drinking water to approximately 1.8 million people in the Baltimore region. The areas from which waters that feed each reservoir originate - also known as watersheds - are located within Baltimore, Carroll and Harford counties. As depicted in the chart below, the lion's share of the watershed lies in Baltimore County and Carroll counties, with smaller parts of the Loch Raven and Prettyboy watersheds touching Harford County and York County, Pennsylvania.

Adopted in 1979 in response to deteriorating water quality, the Reservoir Watershed Management Agreement was and remains a voluntary compact of Baltimore and Carroll counties, Baltimore City, Baltimore County Soil Conservation District, Carroll Soil Conservation District, the Maryland Departments of Agriculture and the Environment, and BMC. This agreement established the Baltimore Reservoir Watershed Management Program, a cooperative effort to combat negative water-quality trends and protect the future of the reservoir system.

Updated in 2005, the agreement charges the WPC and the RTG with implementing certain action strategies around watershed protection. The RTG and WPC also include representatives from Anne Arundel, Howard and Harford counties, whose residents rely on water from the reservoir.

The RTG meets regularly to evaluate challenges and proposed actions in the watershed, including reviewing land-use



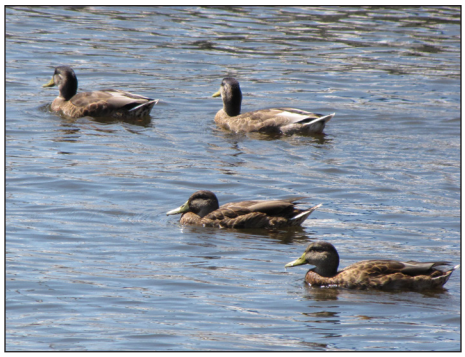
	Baltimore	Carroll	Harford	York, Pa.
Loch Raven	217	1	1	4
Prettyboy	40	33		7
Liberty	33	131		
Total	290	165	1	11

Source: Baltimore Metropolitan Council, "Reservoir Watershed Management Agreement of 2005 with the 2005 Action Strategy" 2006

plans, rezoning proposals and revisions to water and sewerage plans. The RTG often provides technical advice with regard to deforestation and impervious surface development, such as parking lots; as well as agricultural management practices, like manure management. The WPC provides program oversight and guidance, reviewing and commenting upon proposed actions and draft publications of the RTG.

Among the action strategies, the RTG and WPC are responsible for is improved monitoring of the reservoirs and the watershed. The RTG is developing a Watershed Monitoring Plan. The Plan will outline where and how each participating jurisdiction will conduct soil and water sampling and share their results. The goal is to establish comparable data sets across jurisdictions in order to better understand the state of the watershed.

Once the plan is complete, the project will move to the second phase, which includes implementation of a unified monitoring program supported by a watershed management consultant. By working together, these efforts will ensure a more transparent and effective approach to delivering healthy drinking water to the next generation.■



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BMC SENIOR STAFF DIRECTORY

Baltimore Metropolitan Council

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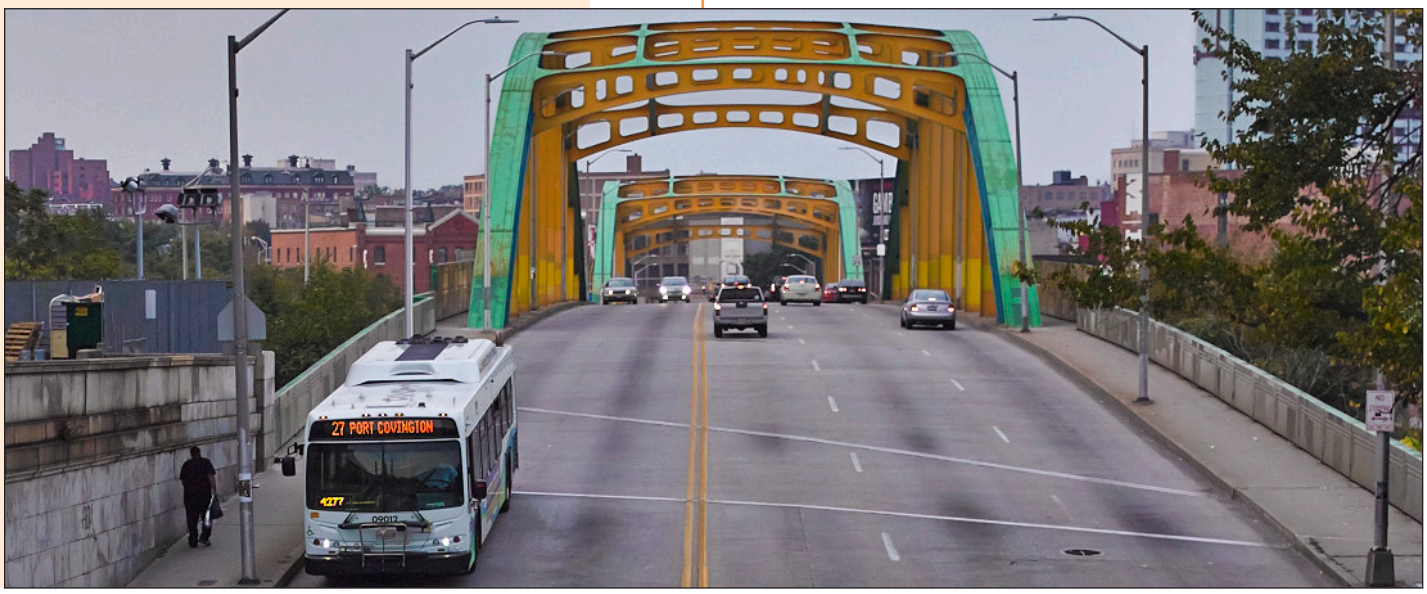

Baltimore
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