Environmental Justice Analysis

Updated methods for Maximize2045

October 2, 2019

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Introduction to EJ Principles

- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects on minority and low-income populations

- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process

- Prevent the denial of, reduction in, or significant delay of these protections for minority and low-income populations

Source: U.S. Department of Transportation Environmental Justice Strategy

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Introduction to EJ Populations

- Low-income: A person whose household income is at or below the U.S. Department of Health and Human Services poverty guidelines is considered low-income.

- Minorities: A person belonging to any of the following groups is considered part of a minority population:

  – Black: A person of origin in any of the black racial groups of Africa;

  – Hispanic or Latino: A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;

  – Asian: A person having origins in any of the original peoples of the Far East, Southeast Asia, Indian subcontinent, or Pacific Islands;

  – American Indian and Alaskan Native: A person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition; or

  – Native Hawaiian and Other Pacific Islander: A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

Source: Department of Transportation Environmental Justice Order 5610.2(a)

Improving the Methodology

- ## How can we improve the EJ Analysis from Max2040 to Max2045?

  – Adhere to current federal guidance for EJ populations

  – Improve discussion of demographics of the region's EJ population and methodology for all readers

  – Integrate additional measures of accessibility and mobility

  – Improved discussion of analysis both within and between scenarios

EJ Populations: Minorities

		BRTB Population		Share	
White, non Hispanic	White, non Hispanic	1,605,111	1,605,111	57.5%	57.5%
Minorities	Black, non Hispanic	1,186,939	801,713	42.5%	28.7%
	American Indian and Alaska Native, non Hispanic		5,327		0.2%
	Asian, non Hispanic		148,872		5.3%
	Native Hawaiian and Pacific Islander, non Hispanic		1,069		0.0%
	Some other race, non Hispanic		7,496		0.3%
	Two or more races, non Hispanic		69,896		2.5%
	Hispanic - all races		152,566		5.5%
Total		2,792,050	2,792,050	100.0%	100.0%

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-year Estimates

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EJ Populations: Households in Poverty

Jurisdiction	Total Households	Below Poverty Line	
		Households	**Share**
Anne Arundel	205,395	11,818	5.8%
Baltimore City	239,791	49,940	20.8%
Baltimore County	312,859	27,209	8.7%
Carroll	60,432	3,174	5.3%
Harford	92,895	7,539	8.1%
Howard	111,337	5,385	4.8%
Queen Anne's	17,995	1,079	6.0%
BRTB Region Total	1,040,704	106,144	10.2%

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-year Estimates

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EJ Areas in the Baltimore Region

- **Transportation Analysis Zones (TAZs) serve as the geographic basis for EJ analysis**
  - TAZs are basis of analysis in the current travel demand model
  - A TAZ is identified as an EJ area if it has a concentration of households in poverty (10.2%) or minorities (42.5%) at or greater than the regional average
  - Shortcomings of TAZ thresholds: Small pockets of EJ populations can be excluded

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EJ Areas in the Baltimore Region

	Number of TAZs	BRTB Region Totals		EJ Populations			
		Pop	HH	Minority Pop	Minority %	HH in Poverty	HH in Poverty %
EJ TAZs	661	1,470,791	550,963	946,573	79.7%	85,090	80.2%
• **Minority > 42.5%**	212	535,585	192,685	350,579	29.5%	9,919	9.3%
• **Poverty HH > 10.2%**	142	265,318	104,293	65,060	5.5%	16,126	15.2%
• **Both Minority & Poverty**	307	669,888	253,985	530,934	44.7%	59,045	55.6%
Non-EJ TAZs	731	1,321,259	489,742	240,366	20.3%	21,054	19.8%
Total	1392	2,792,050	1,040,705	1,186,939	100%	106,144	100%

EJ TAZs

LEGEND

TAZs
- Non-EJ
- Minority above 42.5%
- Poverty above 10.2%
- Minority & Poverty

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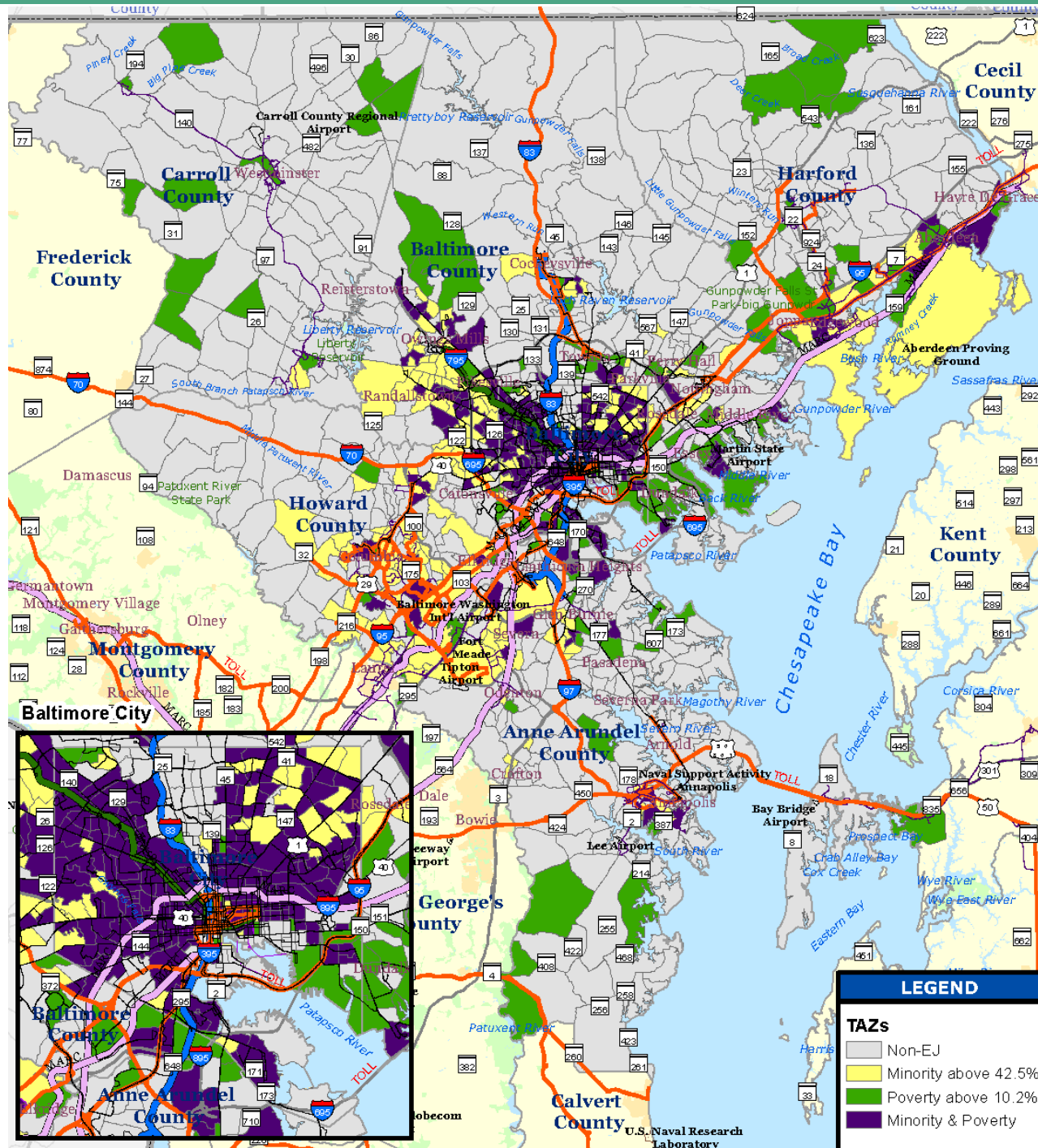
Measures used for *Max2045* Analysis

- **Accessibility Measures**
  - Average number of jobs accessible by both auto (30) & transit (60)
  - Average number of shopping opportunities accessible by both auto (30) & transit (60)

- **Mobility Measures**
  - Average commute time by both auto & transit
  - Average travel time for shopping purposes by both auto & transit
  - Average travel time to closest hospital by both auto & transit
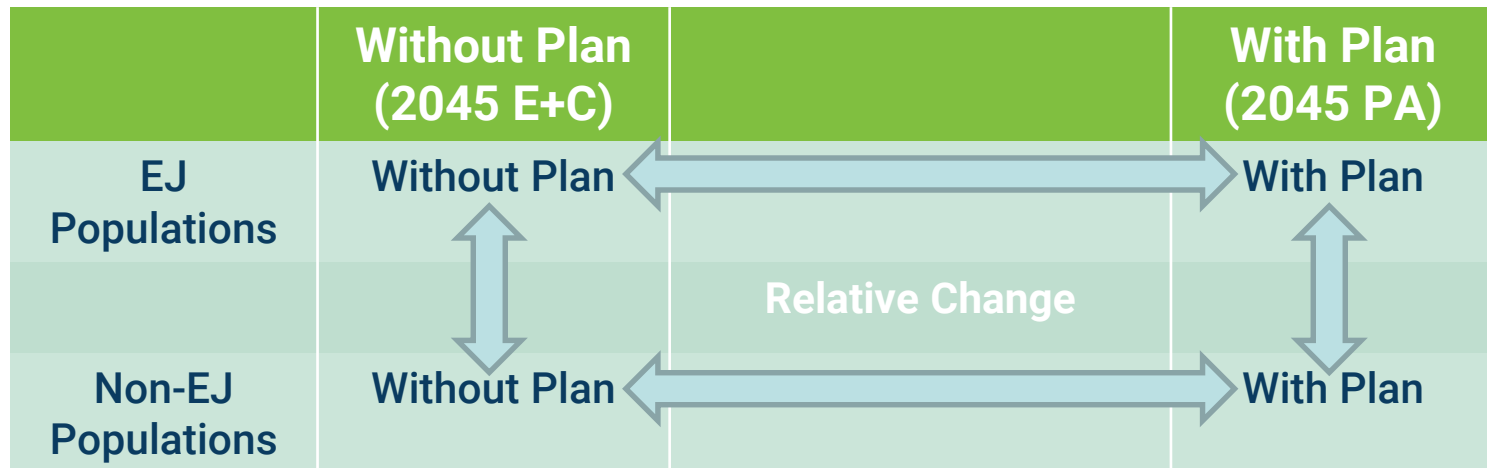
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Measures used for *Max2045* Analysis

- **Proximity to important destinations and services**
  - Percent of population close to a college or university by both auto & transit
  - Percent of population close to a hospital by both auto & transit
  - Percent of population close to a supermarket or public market by both auto & transit

Scenarios Analyzed

- ## 2045 Existing and Committed (2045 E+C):
  - All projects that are either already in place or are committed
  - Assumes no new capacity adding infrastructure projects between now and 2045 beyond what is programmed as of FY 2023.

- ## 2045 Preferred Alternative (2045 PA):
  - All projects in the 2045 E+C scenario as well as all projects in the preferred alternative of *Maximize2045*.

	Without Plan (2045 E+C)		With Plan (2045 PA)
EJ Populations	Without Plan		With Plan
		Relative Change	
Non-EJ Populations	Without Plan		With Plan

Conclusions

- ## Access to jobs and shopping opportunities
  - On average, EJ TAZs have access to a larger number of jobs and shopping opportunities as compared to non-EJ TAZs
  - This result holds for both scenarios
  - All TAZs see increases in accessibility with the implementation of Maximize2045.
  - Percent increases between scenarios are larger for EJ TAZs with the exception of average shopping opportunities by auto

- ## Average Travel Times
  - Average travel times are lower for EJ TAZs across nearly all measures and scenarios with the exception of average travel time for shopping purposes by auto
  - Implementation of the preferred alternative does not have much of an impact on travel times − Average travel times change by 2.5% or less in either direction from the E+C to the PA scenario.

Conclusions

- ## Proximity to supermarkets, hospitals, and higher ed institutions

  – Auto access is quite good throughout the Baltimore region across all TAZs

  o >90% of the population lives within a 30-minute auto trip of all of these important destinations

  – EJ TAZs see higher percentages in close proximity to these destinations as compared to non-EJ TAZs.

  – Implementation of the preferred alternative yields only small changes in the percentage of the population close to these destinations.

  – Transit access is significantly less than that for auto.

  o This is a trend that emerges across all measures

Potential Areas for Expansion of EJ Analysis

- **Additional measures**
  - Jobs accessible by premium public transportation within multiple time thresholds (PAC suggestion)
  - Jobs accessible by walking and other non SOV/non-driving methods of travel (PAC suggestion)
- **Subsets of EJ TAZs such as those that exceed only one threshold or those that exceed both**
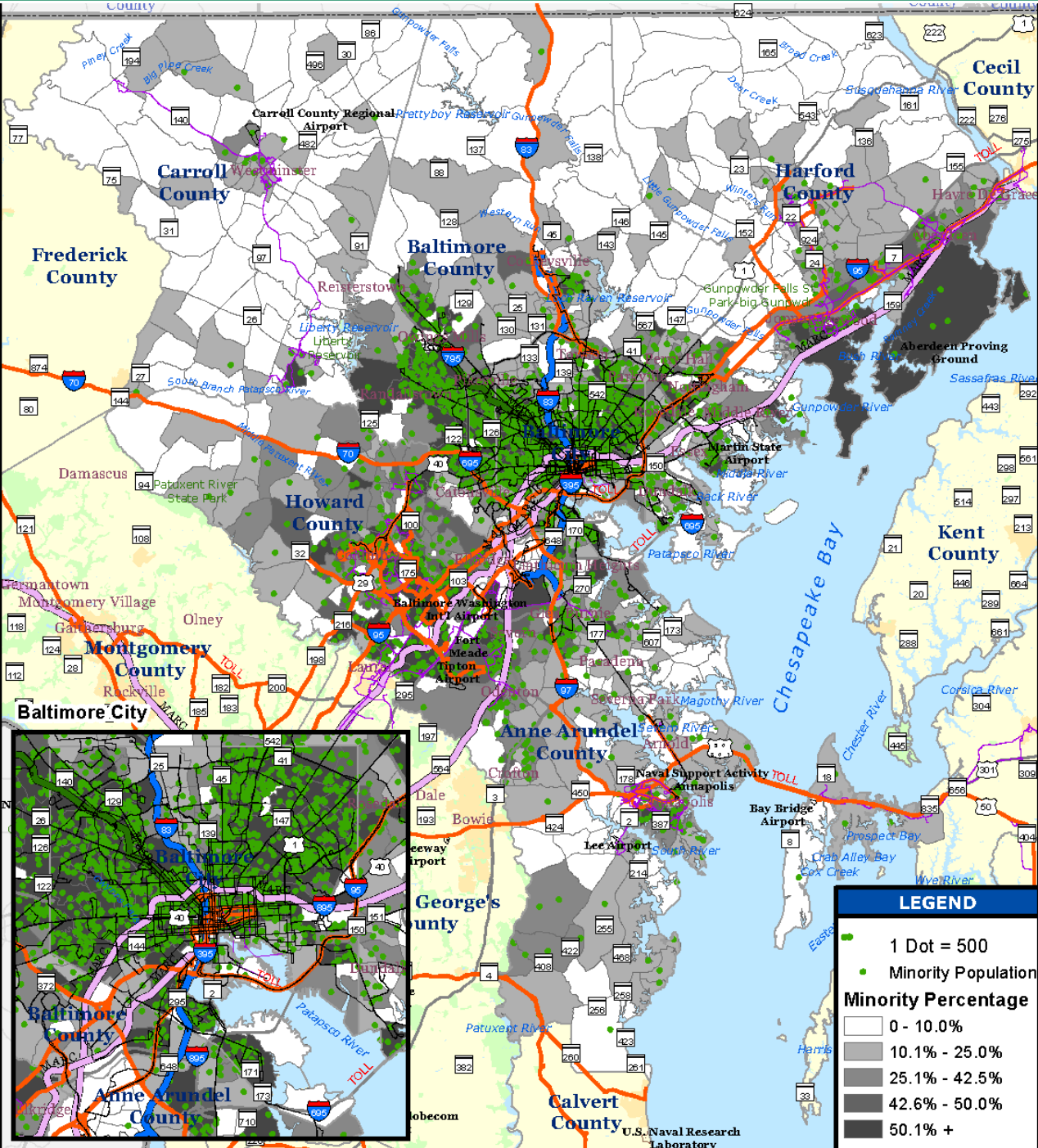- **Jurisdiction level analysis**

For More Information

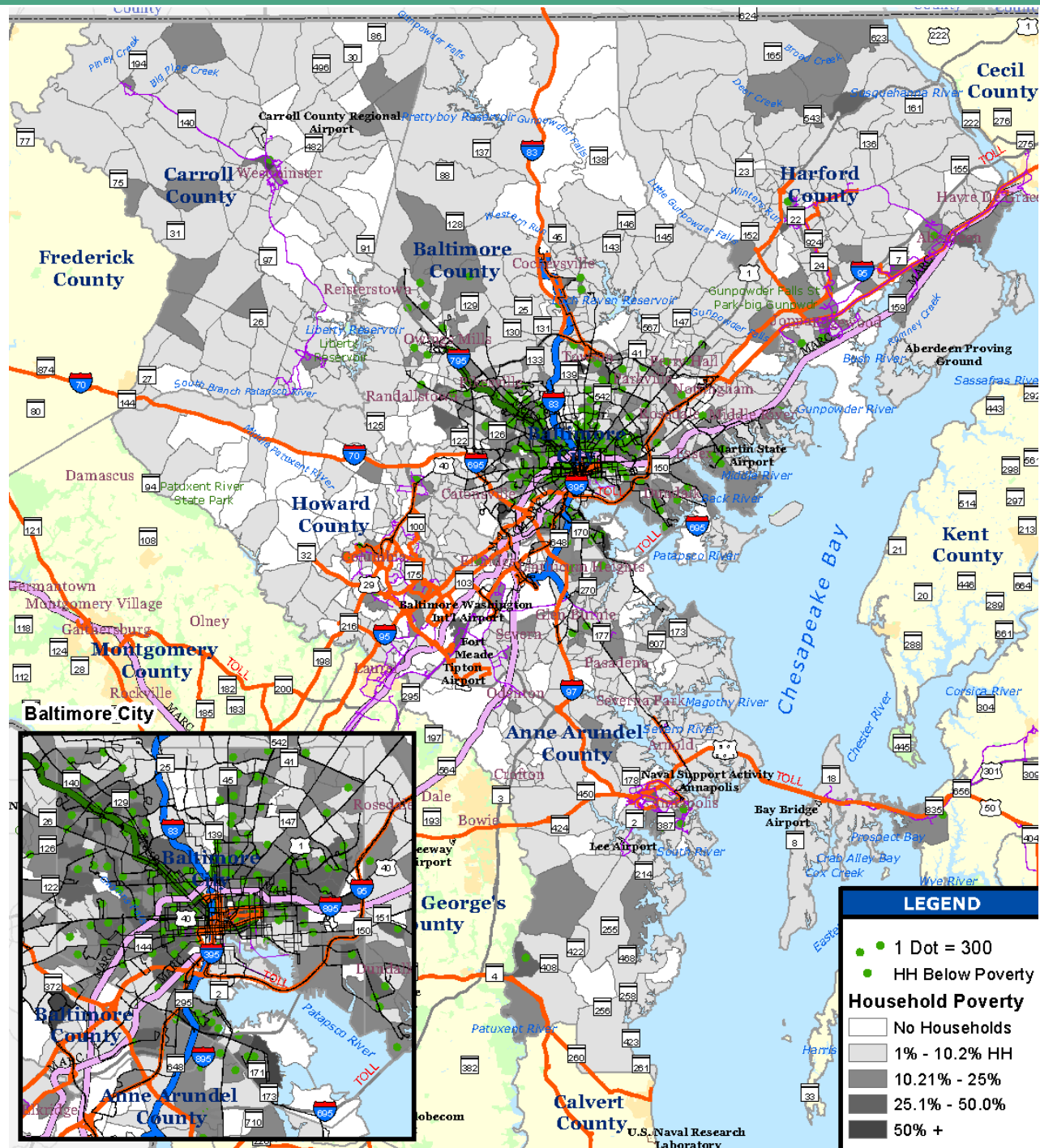## Zach Kaufman | Transportation Planner

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Identifying EJ Populations: Minorities

Jurisdiction	Minority Population	White, non Hispanic Population	Minority Share	White, non Hispanic Share
Anne Arundel	171,461	393,139	30.4%	69.6%
Baltimore City	448,880	170,916	72.4%	27.6%
Baltimore Co	341,945	486,692	41.3%	58.7%
Carroll	17,022	150,297	10.2%	89.8%
Harford	57,623	192,509	23.0%	77.0%
Howard	143,426	169,069	45.9%	54.1%
Queen Anne's	6,582	42,489	13.4%	86.6%
BRTB Region Total	**1,186,939**	**1,605,111**	**42.5%**	**57.5%**

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-year Estimates

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TAZs by Minority Percentage

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1 Dot = 500
● Minority Population

Minority Percentage
- 0 - 10.0%
- 10.1% - 25.0%
- 25.1% - 42.5%
- 42.6% - 50.0%
- 50.1% +

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TAZs by Households in Poverty

LEGEND

1 Dot = 300
HH Below Poverty

Household Poverty

	No Households
	1% - 10.2% HH
	10.21% - 25%
	25.1% - 50.0%
	50% +

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Transit Projects in Maximize2045

Jurisdiction	Project	Description	YOE Capital Cost
Anne Arundel County	U.S. 50 BRT	Bus Rapid Transit between New Carrollton MARC/Metro station and Parole along U.S. 50	$712,000,000
Harford County	Aberdeen MARC Station	Transit Oriented Development (TOD); new train station, additional parking, U.S. 40 "Green Boulevard," and Station Square Plaza - new pedestrian underpass and green, terraced plaza/amphitheater	$70,000,000
Harford County	MARC Service	Fill the Northeast Corridor Commuter Rail Gap by providing Commuter Rail Service to Delaware. In addition, provide additional service to Harford County, including reverse commute, late evening service, and weekend service	$21,000,000
Harford County	Transit Signal Priority	Construct queue jump lanes along MD 22 and MD 924 and install equipment on the buses that syncs with traffic signals along these corridors	$4,000,000
Harford County	MTA Commuter Bus Service	Additional MTA Commuter Bus Service from Harford County to Downtown Baltimore, to Harbor East, and a reverse commute route from Baltimore that will serve Aberdeen Proving Ground. Project will also include installing shelters and extending the U.S. 40 Commuter service to connect with Harford Transit	$2,000,000
Howard County	Bus Rapid Transit - U.S. 29 Corridor	Bus Rapid Transit (BRT) Ellicott City / Downtown Columbia Transit Center Location (Mall Ring Road) to MD 198 in Montgomery County; Grade-separated facilities in median of U.S. 29.	$735,000,000
Howard County	Bus Rapid Transit to BWI	New bus rapid transit service: Dorsey MARC station to Arundel Mills to BWI consolidated rental car facility to BWI light rail station	$449,000,000

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Transit Projects in Maximize2045

Jurisdiction	Project	Description	YOE Capital Cost
Howard County	Bus Rapid Transit - U.S. 1 Corridor	Bus Rapid Transit will emulate light rail operations at a lower cost, and is designed to link Howard County commuters from Dorsey MARC to Laurel MARC Station and Laurel and to College Park and Purple Line Light Rail.	$184,000,000
MTA	West Baltimore MARC Station Relocation	Relocate existing West Baltimore MARC Station farther south. This will be consistent with the construction of the new B&P Tunnel and much needed ADA accessibility improvements.	$91,000,000
MTA	BaltimoreLink Bus Expansion Program - Phase 2	Purchase of buses to meet increasing ridership demands (beyond replacement needs), 2035-2045	$90,000,000
MTA	BaltimoreLink Bus Expansion Program - Phase 1	Purchase of buses to meet increasing ridership demands (beyond replacement needs), 2024-2034	$67,000,000
MTA	Penn-Camden Connector	Provide access to Riverside Yard from Penn Line for locomotive repair and maintenance	$62,000,000
MTA	New MARC Storage and Maintenance Facility	Alternate location to store MARC Penn Line trains following the implementation of Amtrak's Penn Station Re-development plans which do not accommodate the current storage and maintenance at Penn Station	$62,000,000