

# Regional Parking Policy Study

An Accessibility-Based Approach to Estimating Parking at Federal Facilities in the National Capital Region

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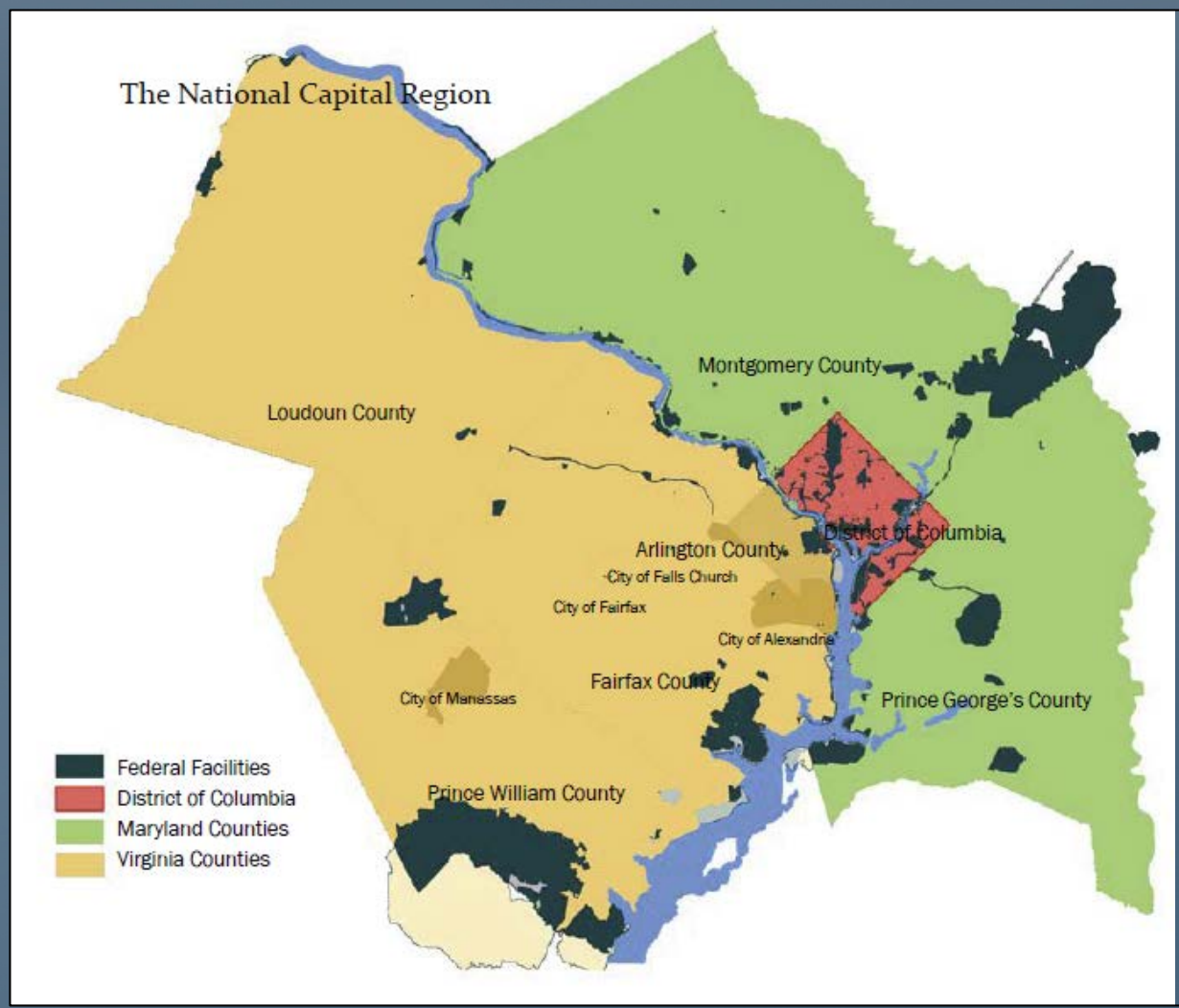
Commission Information Presentation

July 13, 2017

**Volpe**

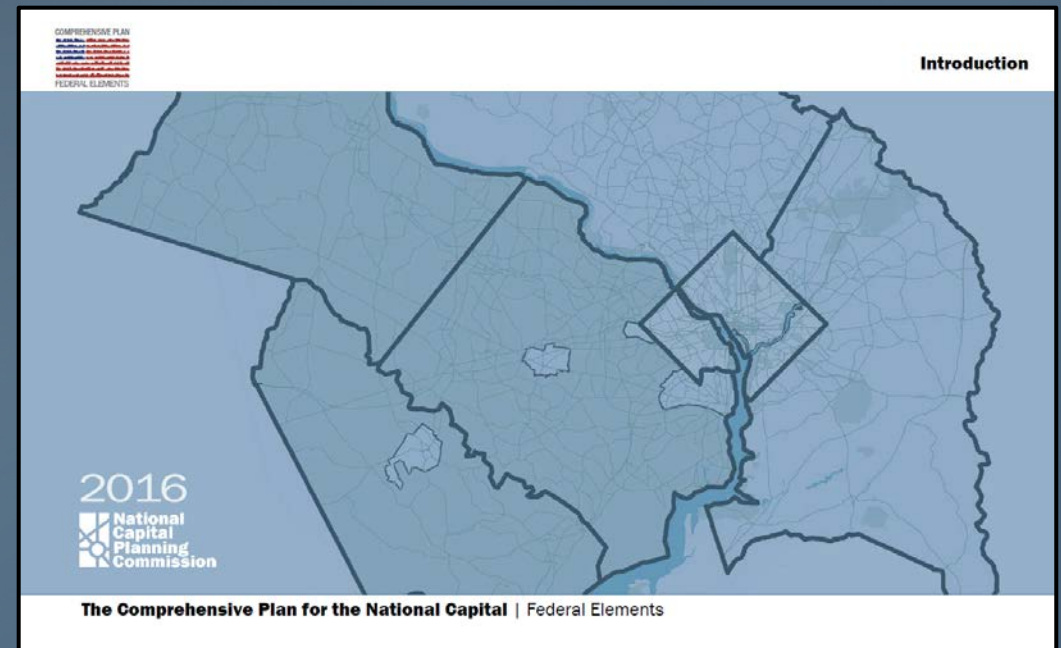
The National Transportation Systems Center

- Background
- Purpose
- Observations
  - Literature Review
  - Local Parking Comparison
  - Modeling Analysis
- Next Steps

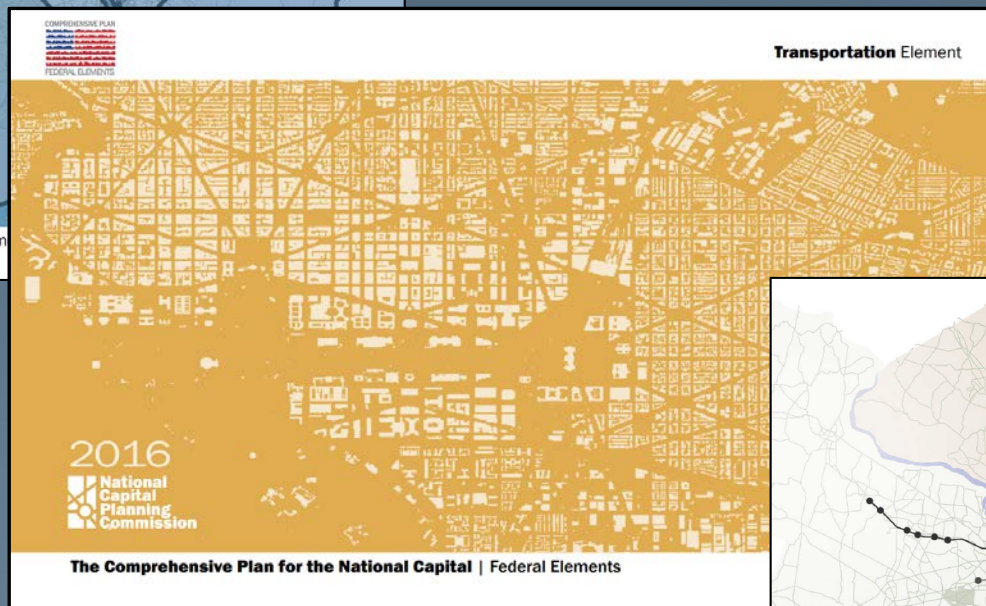
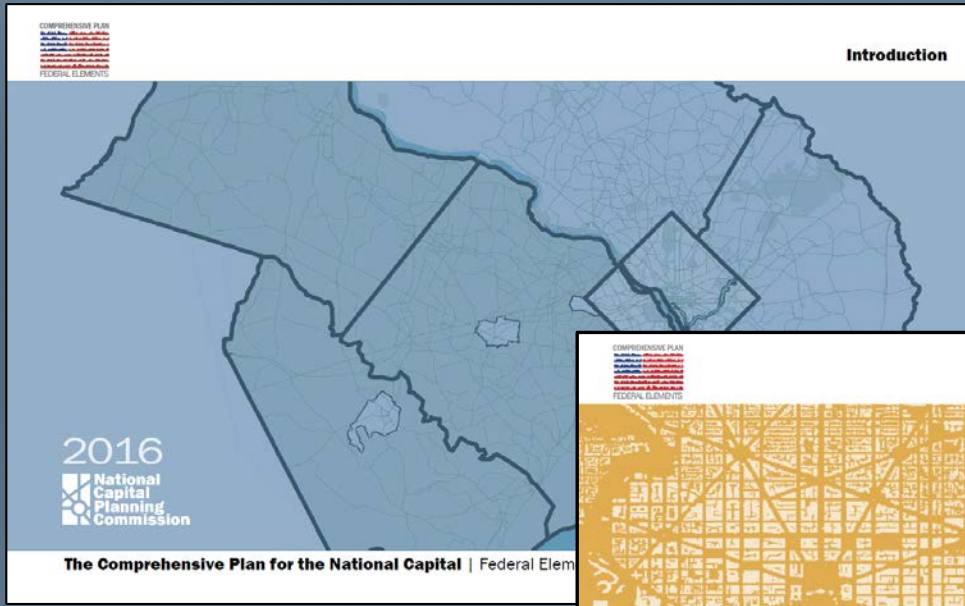


## Core Comprehensive Plan Principles:

1. Accommodate Federal and National Capital Activities
2. Reinforce Smart Growth and Sustainable Development Planning Principles
3. Support Local and Regional Planning and Development Objectives



## Parking Ratio Policy Context



**1:5 Central Employment Area (CEA): One parking space for every five employees (1:5)**

The CEA, as defined in the Federal Workplace Element, is characterized by a wide variety of travel options, with a high concentration of transit services; bicycle infrastructure; a walkable, active street network; and a relative abundance of commercial parking. Within the CEA, the majority of federal facilities are situated within a quarter mile (1,320 feet) of a Metrorail station, and are connected to the station by a network of walkable streets. With the continued expansion of multimodal transportation options the CEA can better support the use of alternative transportation methods by federal commuters, reducing the need for the federal government to provide parking spaces.

**1:4 Historic District of Columbia Boundaries: One parking space for every four employees (1:4)**

The Historic District of Columbia boundary includes the entire District of Columbia outside of the CEA, all of Arlington County, and a portion of the city of Alexandria that lies within the original District of Columbia borders. This area is well-served by transit, but federal facilities here tend to be somewhat further from Metrorail stations than in the CEA (between a quarter mile and a half mile). These areas now support higher transit use than in the past because of additional Metrorail stations and a significant amount of transit-oriented development. Commercial parking is generally available. However, there is a wide range of accessibility within the area. Examples include the Pentagon, with direct access to Metrorail and numerous bus routes, and the Patent and Trademark Office with its proximity to the King St-Old Town station.

**1:3 Suburban areas within 2,000 feet of Metrorail: One parking space for every three employees (1:3)**

Because suburban areas in the region tend to be less well-served by transit, commuters must often drive and park to utilize Metrorail and bus transit services. These are suburban areas within 2,000 feet of Metrorail and outside of the historic District of Columbia boundaries. Offices may be located near Metrorail, but ridership to these offices is expected to be lower than in more urban parts of the region. Working conditions typically disfavor with distance from Metrorail stations, and there are fewer commercial parking facilities than in the more urban parts of the region.

Federal facilities that fall into this category include the Suitland Federal Center and the National Institutes of Health. Special consideration of other factors will be given for federal facilities near Metrorail stations at, or near the end of, the line.

**1:1.5 1:2 Suburban areas beyond 2,000 feet of Metrorail: Phased approach linked to planned improvements over time (1:1.5, 1:2)**

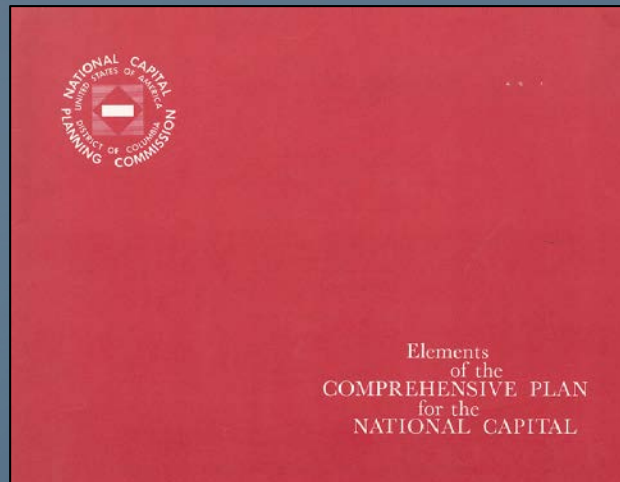
Some federal facilities in the NCR lie beyond the effective reach of the regional transit system, with few travel alternatives available other than driving. Although the goal of one parking space for every 1.5 employees (1:1.5) may be challenging for some of these facilities to attain, the goal encourages federal agencies to implement innovative and effective strategies to reduce the overall impact of federal activities on the region. For this reason, the base parking ratio of 1:1.5 has remained the same since the 1983 Federal Elements.

The Commission considers parking ratios for all federal facilities within the context of the *Continued Long Range Plan*,<sup>18</sup> a 25-year regional transportation plan that ties air quality and transportation improvements to available funding sources. Existing federal facilities located near new transportation infrastructure, such as Metrorail stations, are expected to adjust their parking ratio goals as they become operational. Federal facilities that are served by HOV lanes today or in the future will be expected to achieve a parking ratio of one space for every two employees (1:2).

The Comprehensive Plan for the National Capital: Federal Elements | Transportation Element | 7

## Previous NCPC Parking Ratio Policy

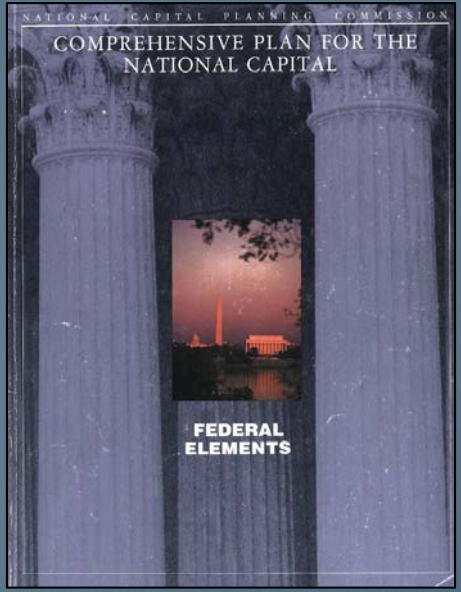
- Automobile must be controlled.
- Advanced a comprehensive mass transit program (Metrorail); major freeway expansion program; and major street improvements for express/local bus service improvements and to form an integrated circulation network.
- Established:
  - *Basic Plan Policies: Central Area Parking,*
  - *Basic Plan Policies: Fringe and Uptown Center Parking*
  - *Specific Program Objectives (the Objectives specified amounts parking that should be provided in certain locations).*



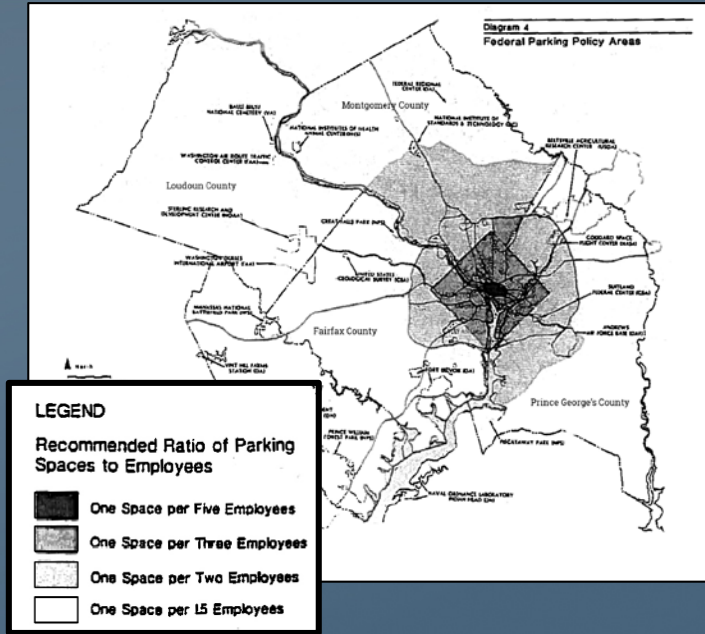
1969

## Previous NCPC Parking Ratio Policy

- Central Employment Area: *1 space / 5 federal employees (1:5)*
- District of Columbia (outside CEA), Arlington, Alexandria, Montgomery County (Silver Spring): *1 space / 3 federal employees (1:3)*
- Portions of Montgomery, Prince George's, Fairfax Counties and Alexandria: *1 space / 2 federal employees (1:2)*
- Remainder of the Region: *1 space / 1.5 federal employees (1:1.5)*

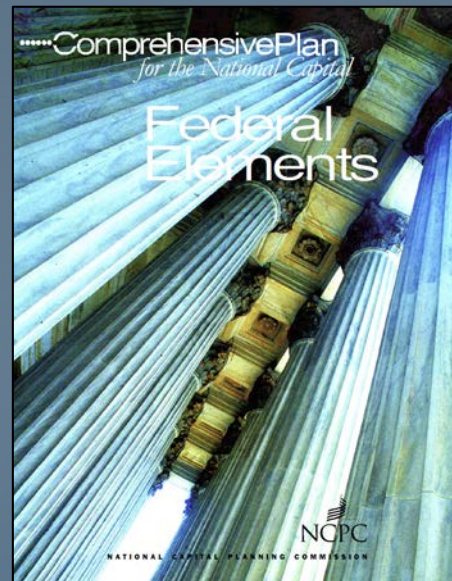


1989

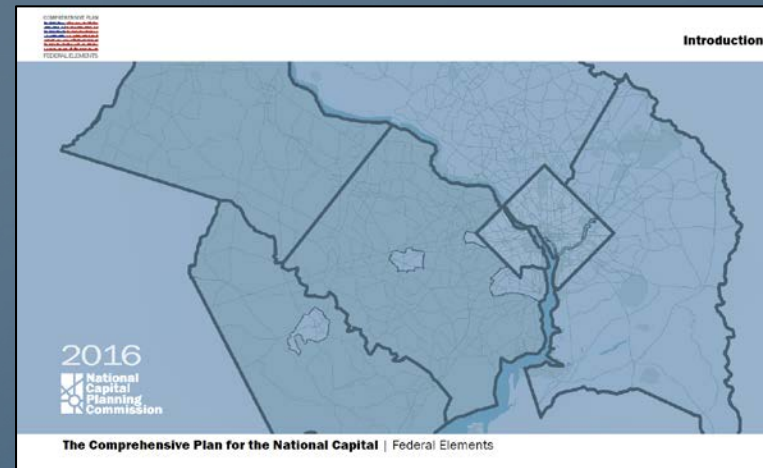


## Current NCPC Parking Ratio Policy

- Central Employment Area: *1 space / 5 federal employees (1:5)*
- Historic DC Boundary: *1 space / 4 federal employees (1:4)*
- Proximate to Metrorail Station: *1 space / 3 federal employees (1:3)*
- Served by High Occupant Vehicle Lanes (HOV): *1 space / 2 federal employees (1:2)*
- Suburban Areas Beyond Metrorail: *1.5 -2.0 spaces / federal employees (1:1.5 – 1:2)*

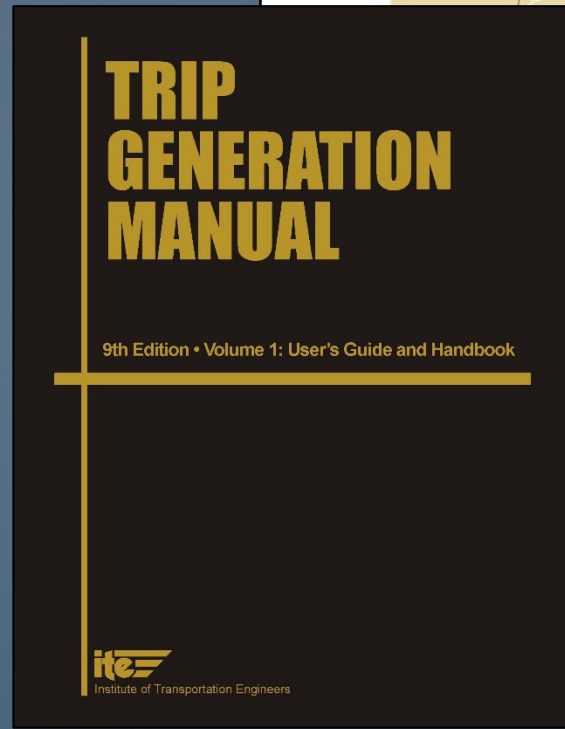
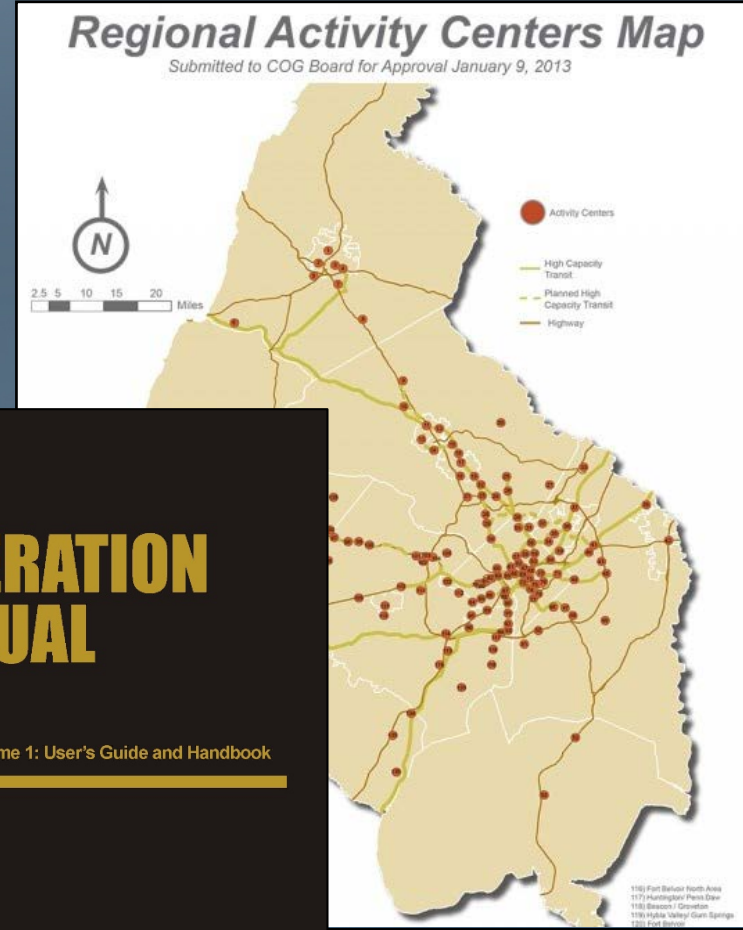


2004



2016

To assess NCPC's parking policies in light of industry best practices and available data.

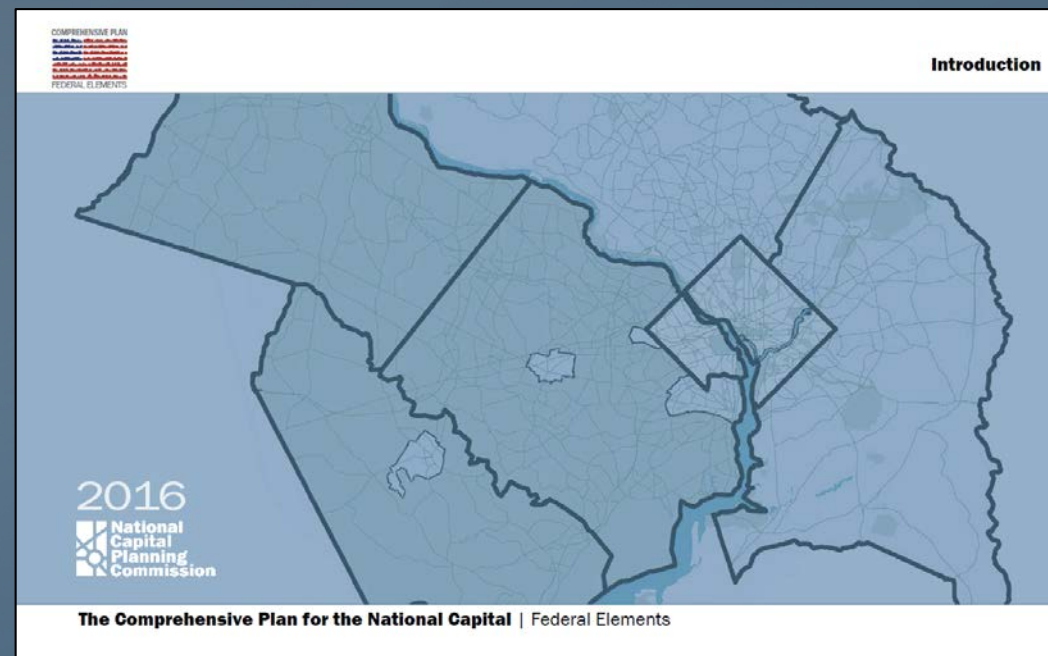


## Study Timeline:

Summer: Finalize Volpe Study / Recommendations

Fall: Final Commission Presentation

Winter: Potential Amendments to NCPC Policies



# U.S. DOT Volpe National Transportation Systems Center

- Part of the U.S. DOT Office of the Secretary
- Objective, third-party transportation technical resource
- 100% fee-for-service federal agency
- Multi-modal, cross-disciplinary expertise
  - Transportation/Land Use Planning
  - Policy Analysis
  - Modeling
- Project team
  - David Daddio (Project Manager)
  - Stephen Zitzow-Childs (Engineer)
  - Jessica Baas (Planner)
  - Dr. Scott Smith (Modeling Advisor)



*The National Transportation Systems Center*

## Study Approach

### Literature Review

Assess the transportation literature and industry best practices

### Local Parking Comparison

Consider local approaches to parking policy

### Modeling Analysis

Assess NCPC policies in light of the regional transportation model (2016 and 2030)

## Study Approach

### Literature Review

Assess the transportation literature and industry best practices

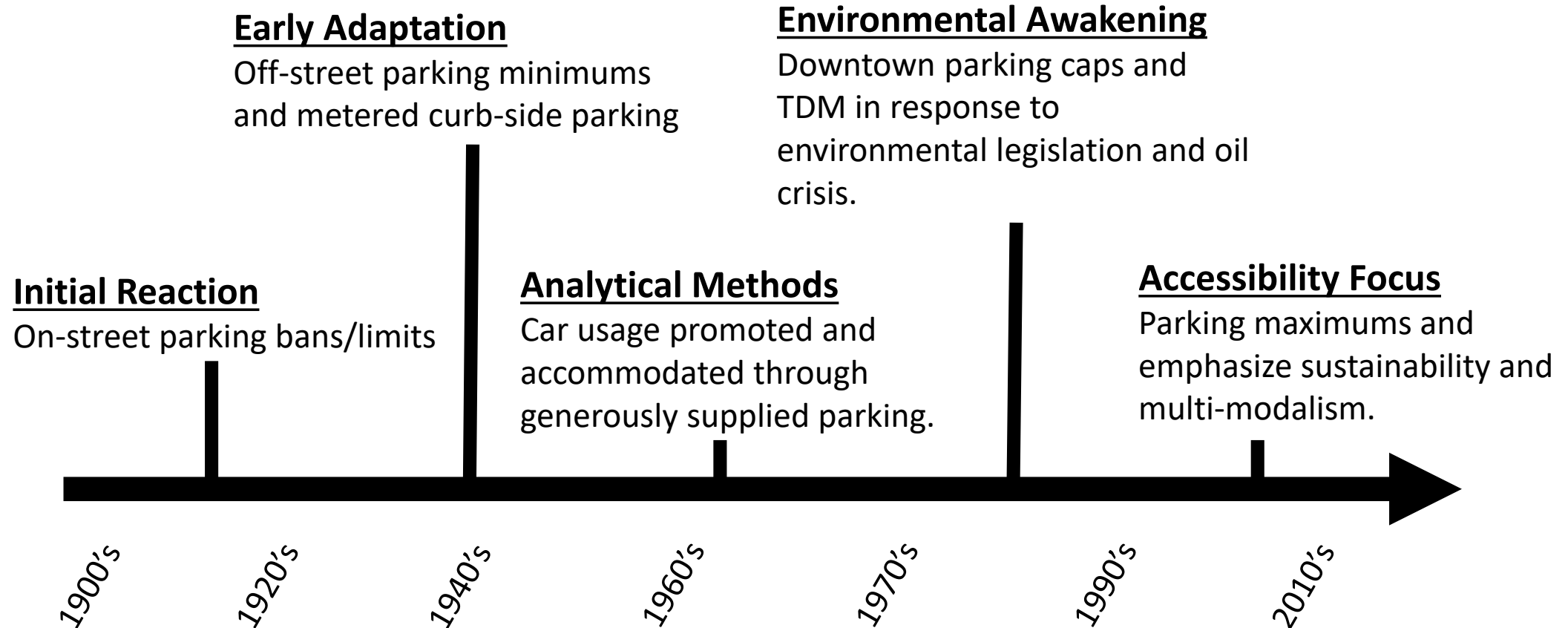
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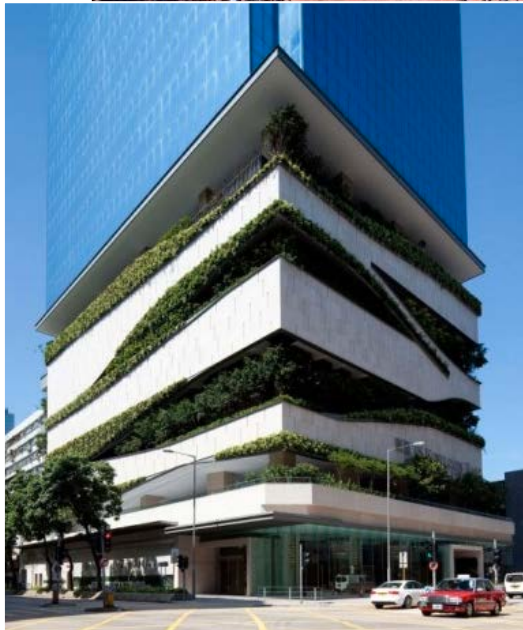
### Modeling Analysis

Assess NCPC policies in light of the regional transportation model (2016 and 2030)

# Literature Review



# Literature Review



## **New Accessibility Paradigm**

Shift in focus from moving vehicles (mobility-based approach) to getting people to destinations (accessibility-based approach). Key emphasis is land use and transportation policies encouraging proximity and choice.

## **Changing Analytical Tools**

Analytical tools are still catching up to the new accessibility paradigm. Industry-accepted tools are designed for suburban settings where the goal is to ensure auto access.

## **Time and Costs Explain Individual Mode Choice Decisions**

Parking is an important determinant of travel choice. Travel decisions (personal vehicle vs. carpool vs. transit vs. bike/pedestrian trip) are primarily a function of time and out-of-pocket costs. This concept is critical to understanding transportation planning and modeling.

# What is Accessibility?

- ❑ General term describing the proximity of housing, jobs, and other destinations.
- ❑ During rush hour, consider the # of households within a commutable distance of...

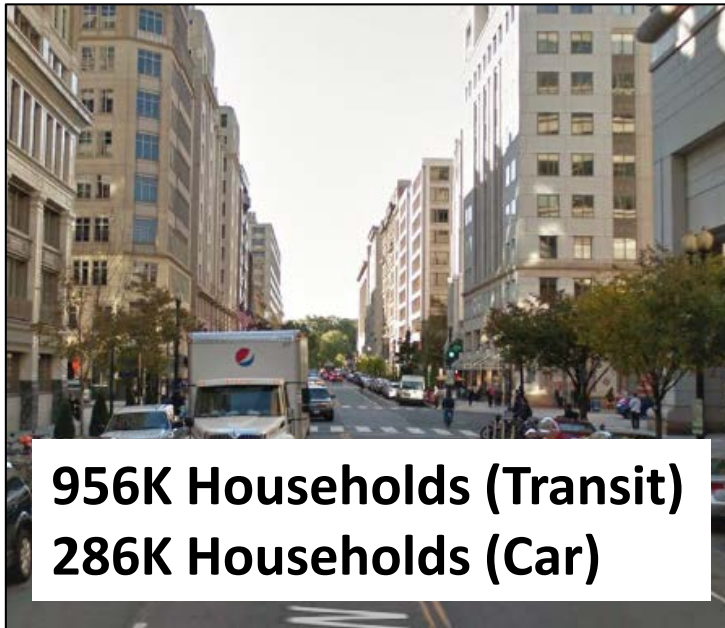
**Metro Center**

vs.

**Takoma**

vs.

**Gaithersburg**



## Study Approach

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Assess NCPC policies in light of the regional transportation model (2016 and 2030)

## Local Parking Comparison

- NCPC has different review tools and authorities than local jurisdictions.
- Local jurisdictions increasingly encourage transit and more efficient land use patterns. To achieve this, they are:
  - **Limiting/Eliminating parking requirements:** Shifting from parking minimums to maximums (i.e., DC).
  - **Allowing flexibility:** Streamlined and transparent variance policies (i.e., Arlington Co.).
  - **Implementing ongoing Transportation Demand Management (TDM) Monitoring:** Setting mode share goals and annually monitoring (i.e., Montgomery Co.).
  - **Pricing/Sharing parking:** Particularly where transportation alternatives are available (i.e., Fairfax Co.).

## Study Approach

### Literature Review

Assess the transportation literature and industry best practices

### Local Parking Comparison

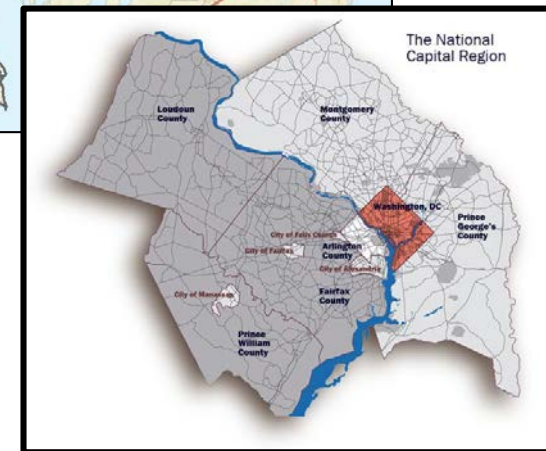
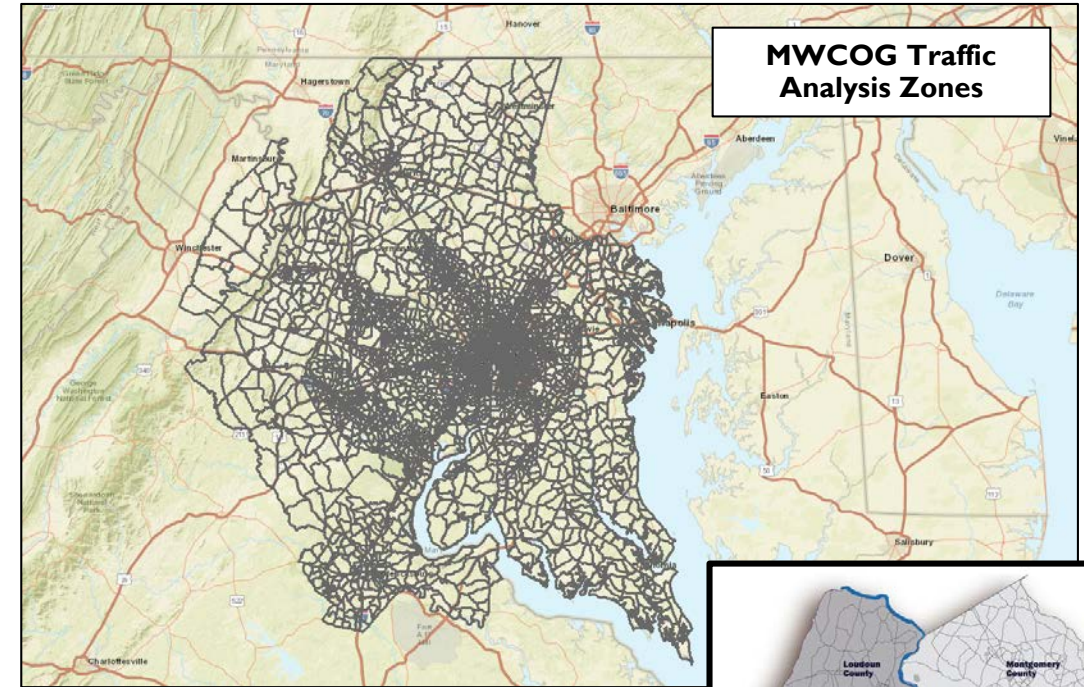
Consider local approaches to parking policy

### Modeling Analysis

Assess NCPC policies in light of the regional transportation model (2016 and 2030)

# Modeling Analysis – MWCOCG's Regional Transportation Model

- ❑ Metropolitan Washington Council of Governments (MWCOCG) maintains a regional transportation model covering approximately 6,800 square miles.
- ❑ Intended for long-range transportation planning and forecasting.
- ❑ Describes current (2016) and future-year conditions (2030) of the transportation system using:
  - Land use (household and job locations provided by each jurisdiction)
  - Transportation (highway and transit)

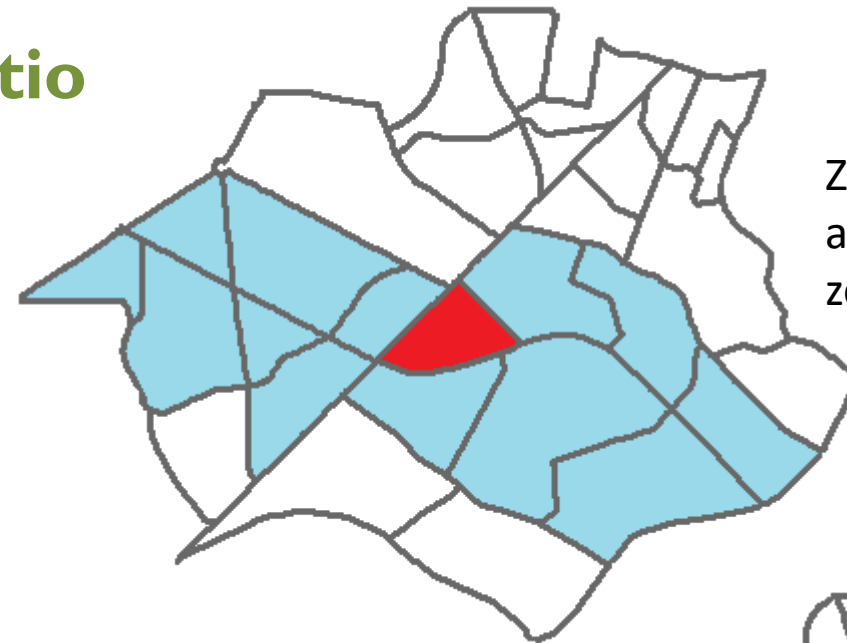


# Modeling Analysis - Accessibility Ratio

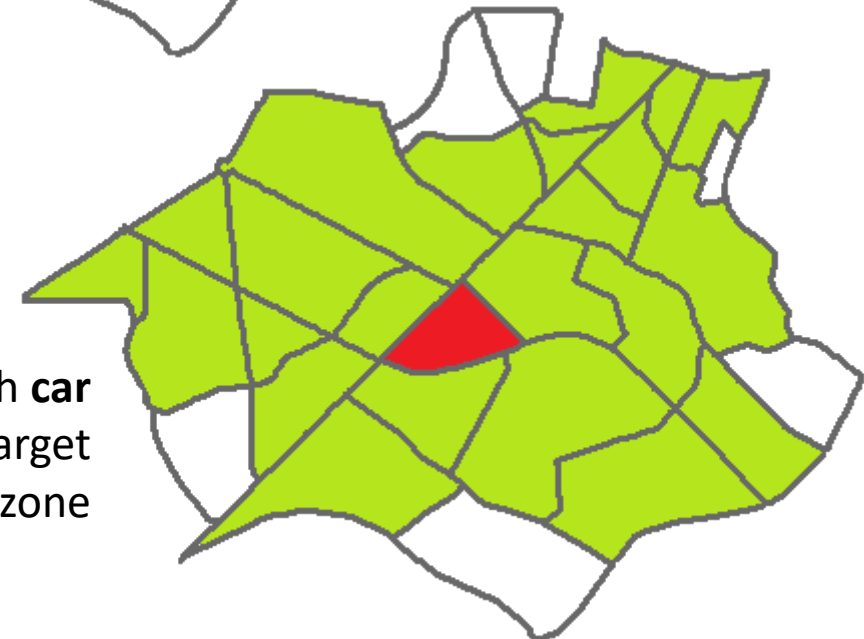
- ❑ Tradeoff between transit choices and drive-alone, so we consider the ratio

$$\text{Accessibility Ratio} = \frac{\text{HH accessible by transit}}{\text{HH accessible by car}}$$

- ❑ **During Peak Travel Times:**
  - **Ratio under 1:** more homes can reach a particular location by car than by taking transit
  - **Ratio over 1:** transit provides access to more homes than driving
  - Can be thought of as “transit-shed” and “drive-shed” of a facility or zone



Zones with **transit** access to target zone



Zones with **car** access to target zone

# Modeling Analysis – Accessibility Ratio

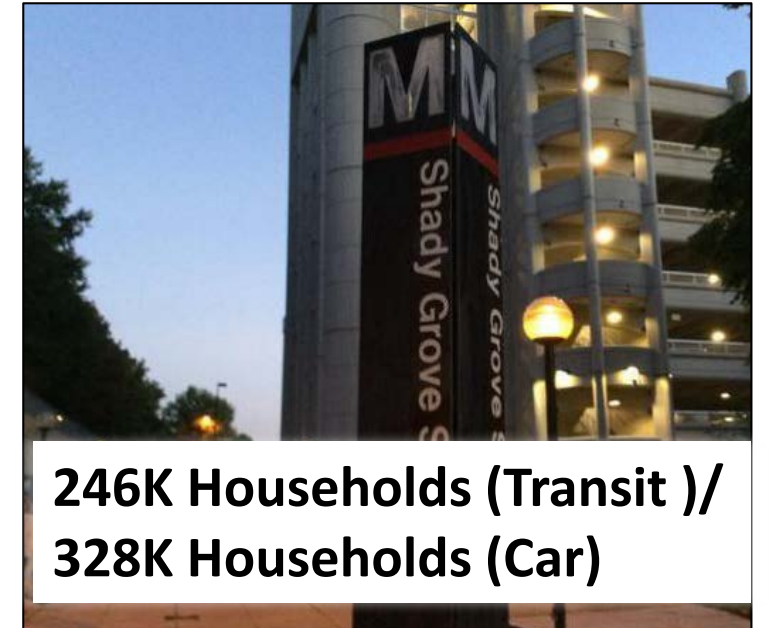
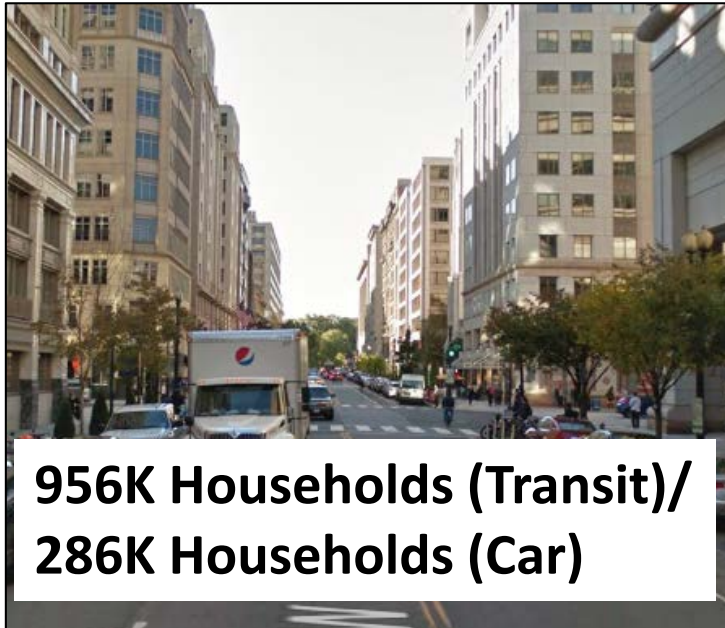
**Metro Center**

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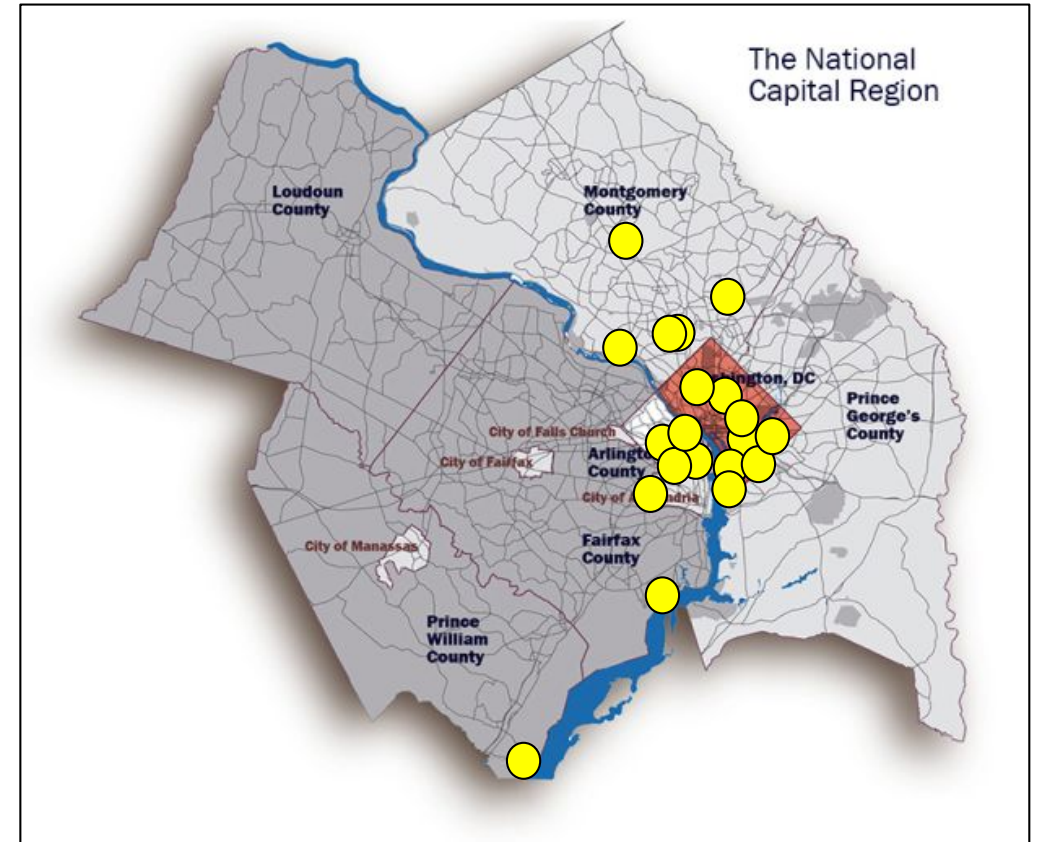
Accessibility  
Ratio: **3.34**

**0.87**

**0.75**

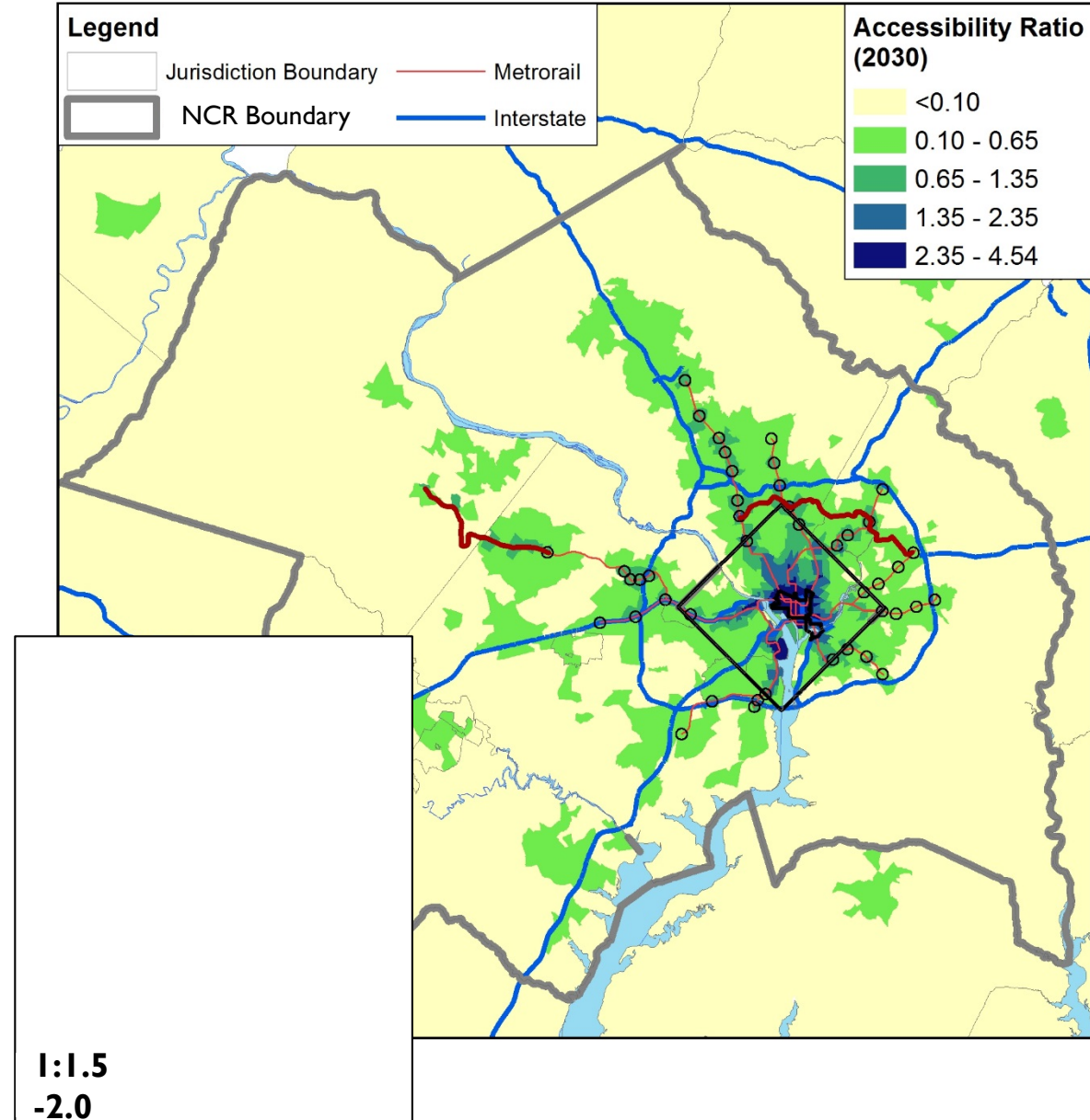
# Modeling Analysis – Sampling Federal Facilities

- ❑ NCPC staff selected 20 facilities to compare parking inventories to ratio goals.
- ❑ All facilities had recent master plans and transportation management plans (TMPs).
- ❑ Locations reflect a broad array of conditions: urban, suburban, near metro, different applicant agencies.

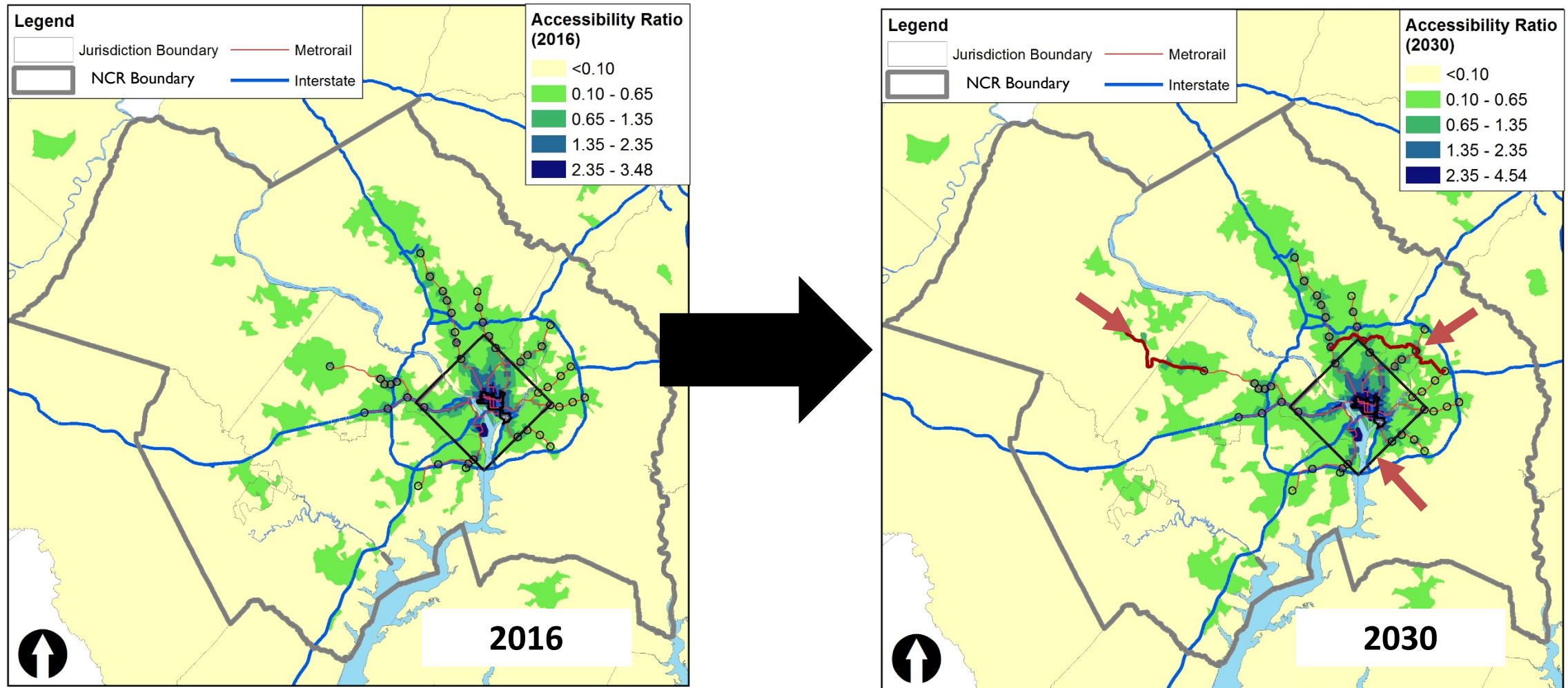


# Modeling Analysis Observations

1. **A Changing Core:** Accessibility will change significantly in the core of the region by 2030.
2. **Accessibility Predicts Parking:** Accessibility ratio is a strong predictor of parking supply at sampled facilities.
3. **Variability within the Historic DC Boundary:** Accessibility varies widely within the Historic DC boundary (1:4).

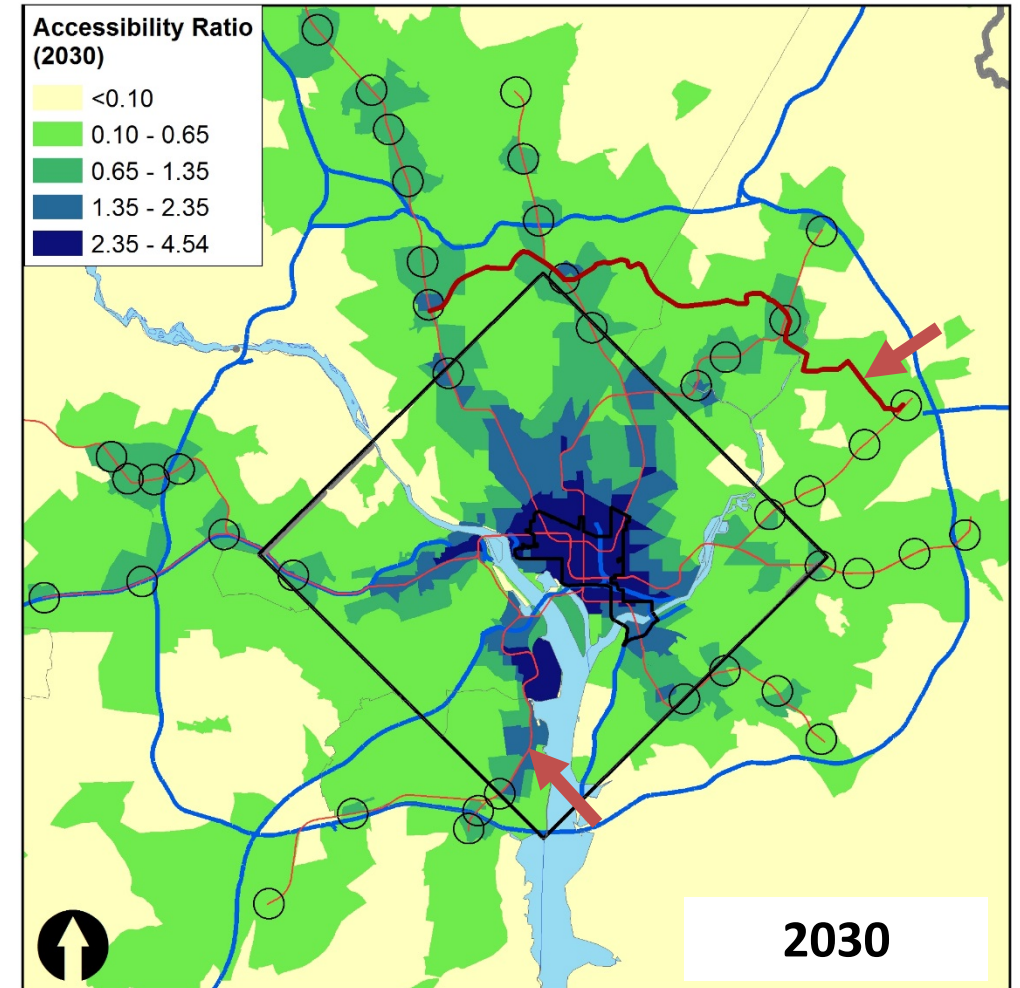
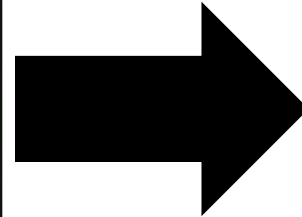
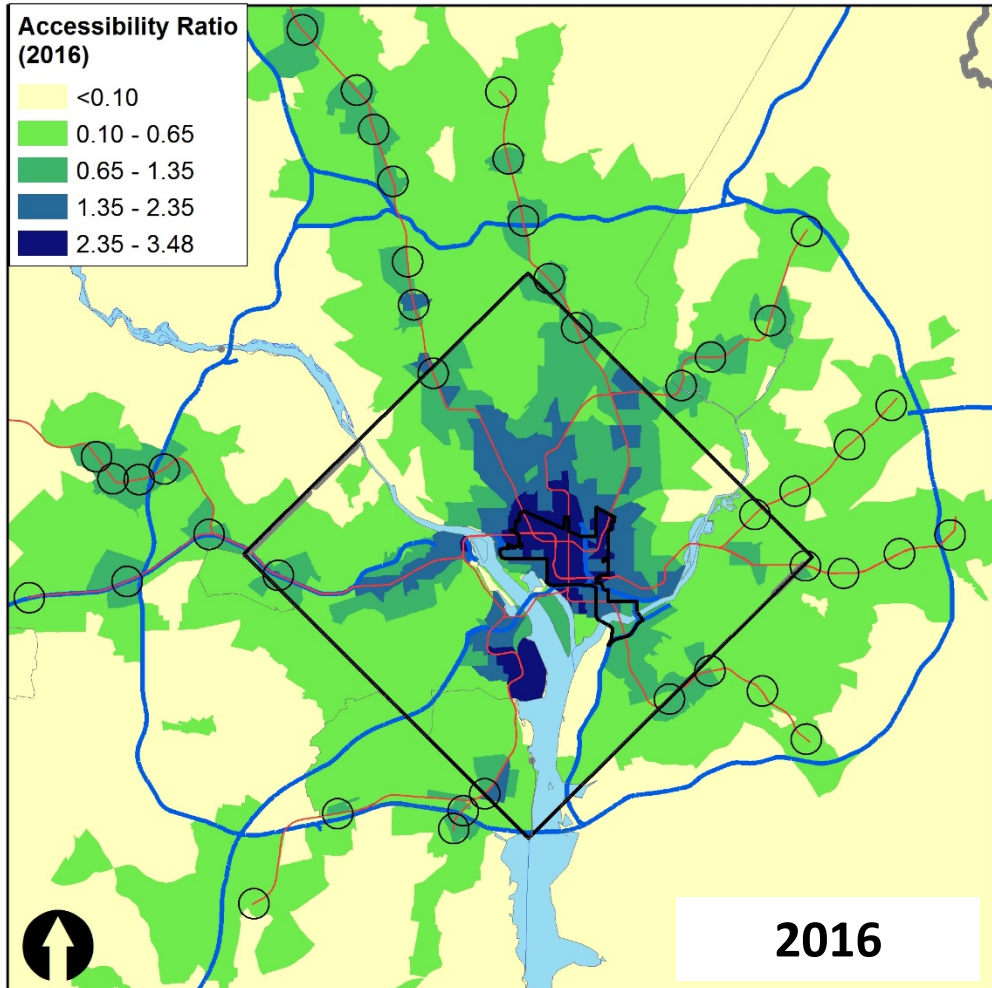


# Modeling Analysis Observation # 1: A Changing Core



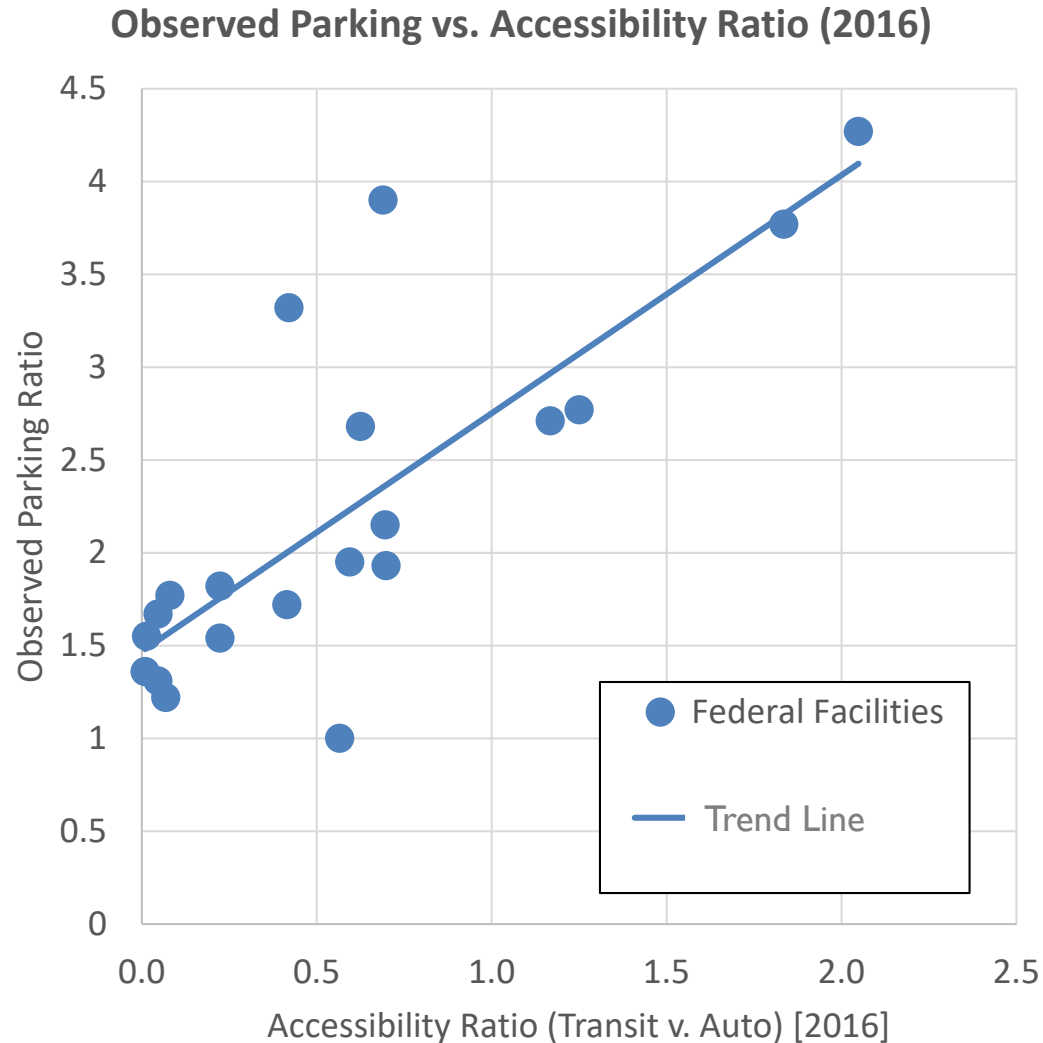
The accessibility ratio is strongly linked to Metrorail service, with buses providing service elsewhere in the region.

# Modeling Analysis Observation # 1: A Changing Core



Predicted land use and transportation changes mean localized improvements in the suburbs and cumulative benefits for the region's core.

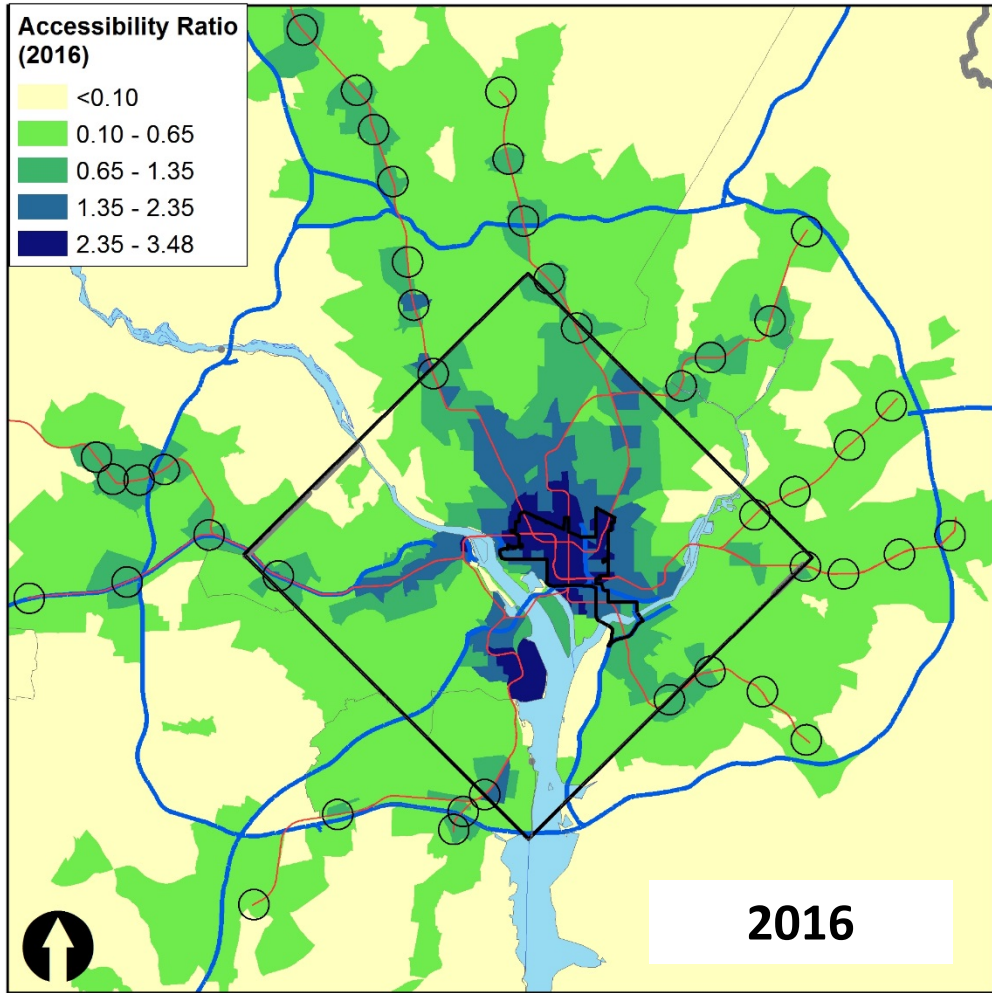
# Modeling Analysis Observation # 2: Accessibility Predicts Parking



- Accessibility ratio predicts 62% of the variation in real world parking supply at the sampled facilities
- Outliers: NSA-Bethesda, St. Elizabeths, and Naval Observatory (92% when removed)



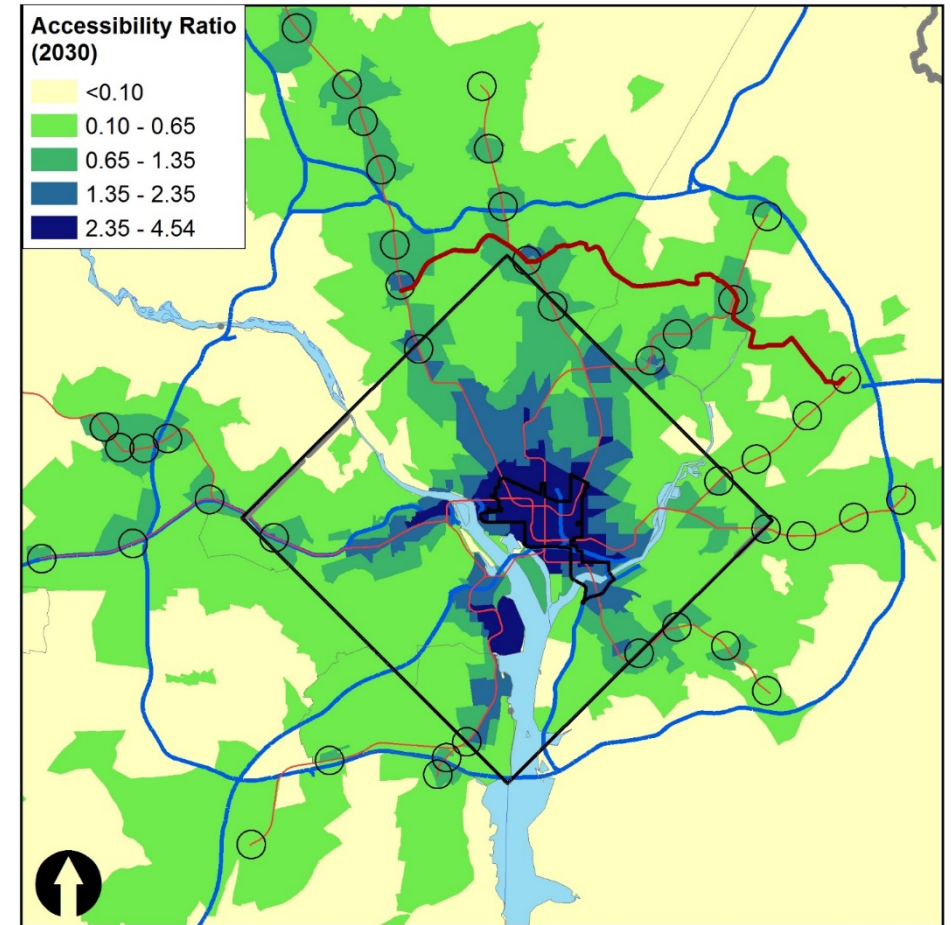
# Modeling Analysis Observation # 3: Variability Within the Historic DC Boundary



The historic DC Zone (1:4 ratio) encompasses a variety of accessibility contexts.

## Further Assessment

- ❑ End-of-the-line Metrorail station areas
- ❑ Potential modifications to 1:4 Historic DC Boundary Zone
- ❑ Outlier locations / potential process for parking ratio variance & other strategies



**2030**

# Questions?

