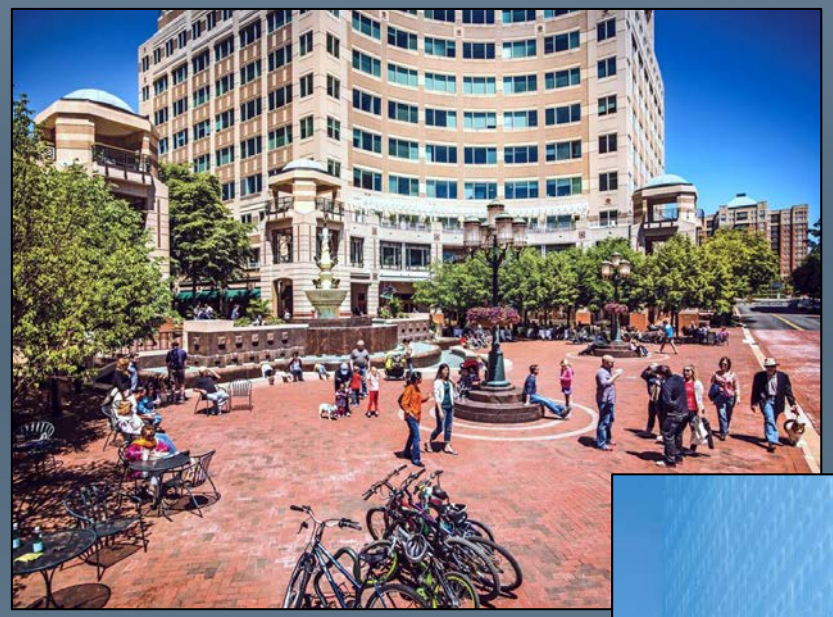
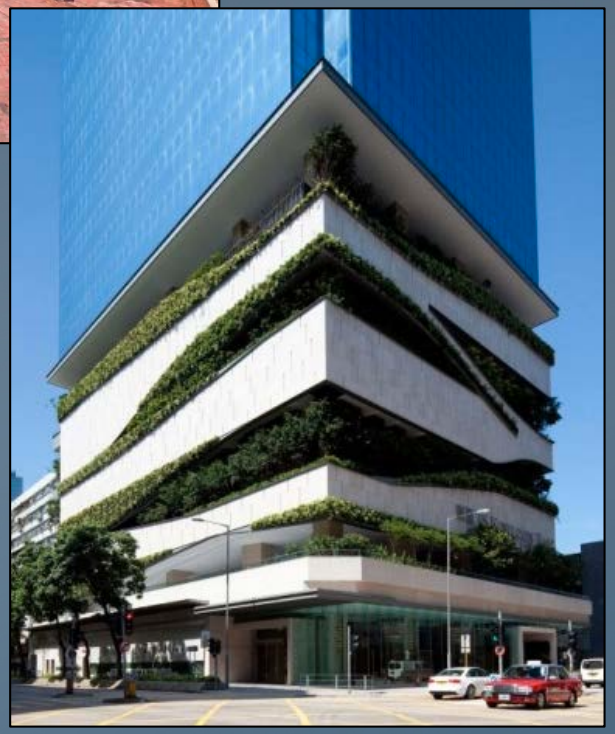
National Capital Planning Commission





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

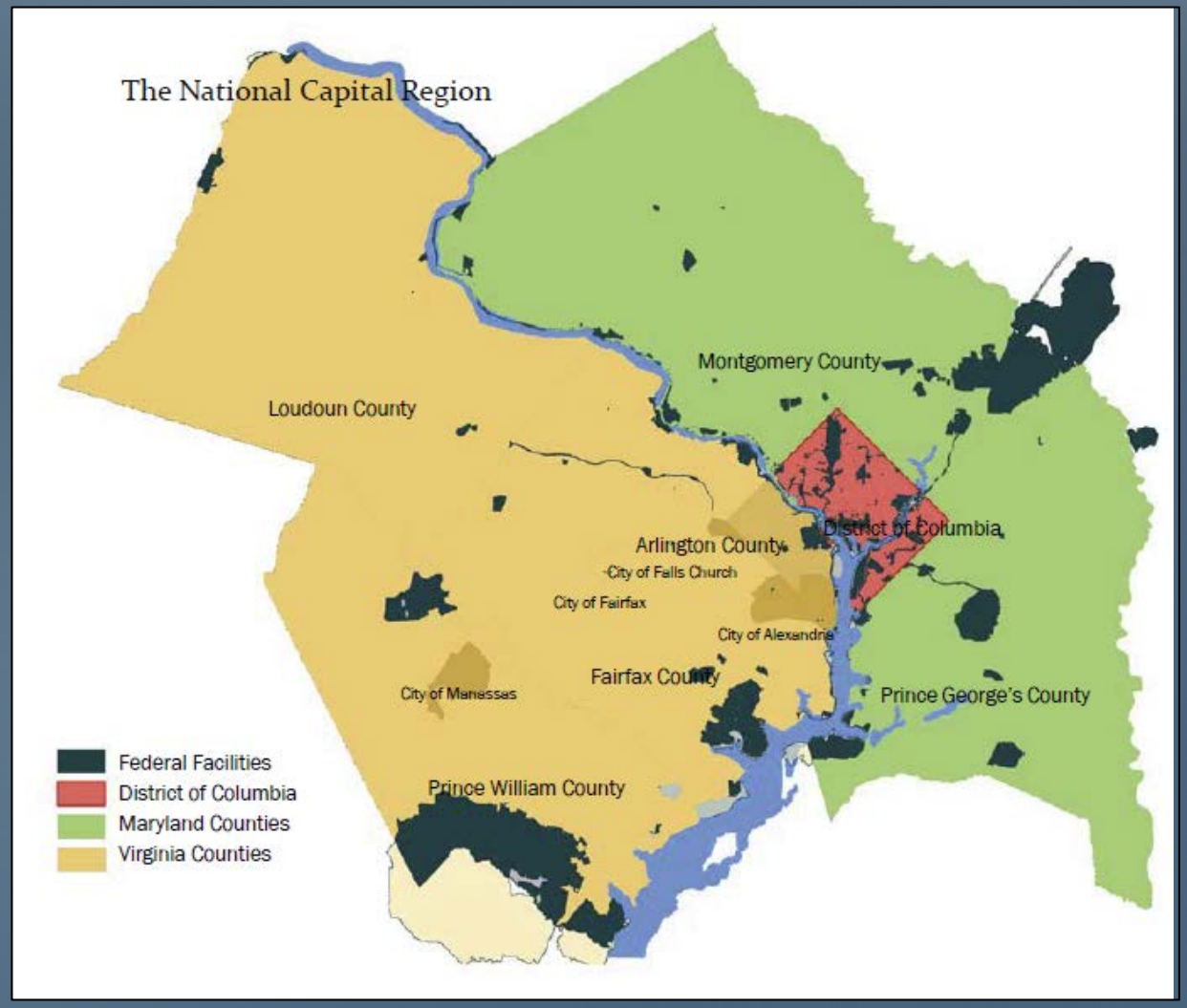
July 13, 2017

Volpe

The National Transportation Systems Center

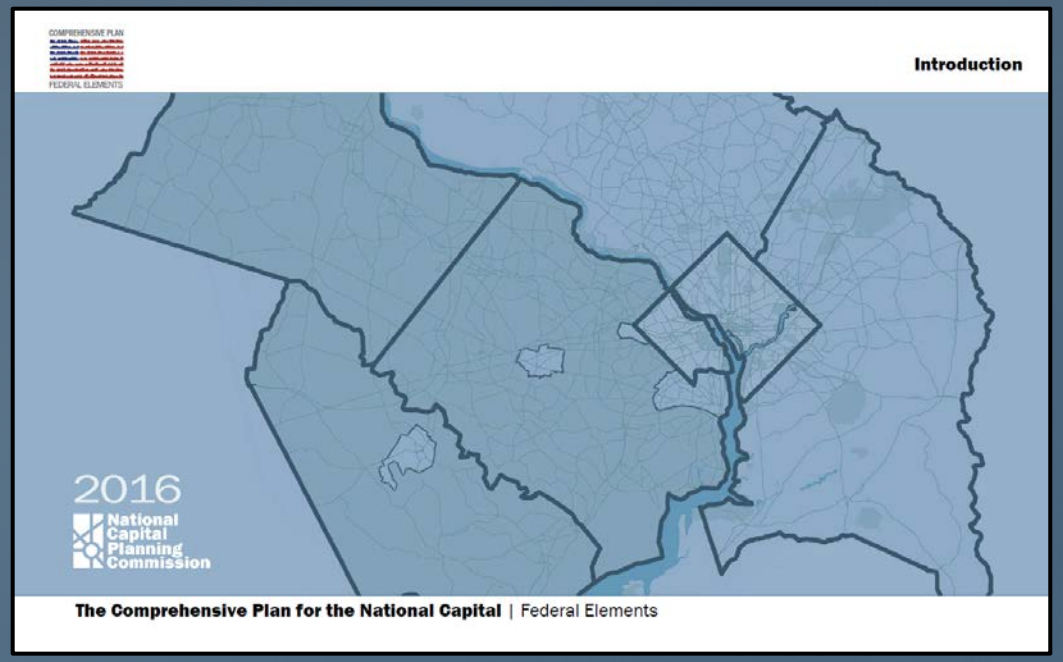
Presentation Outline

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

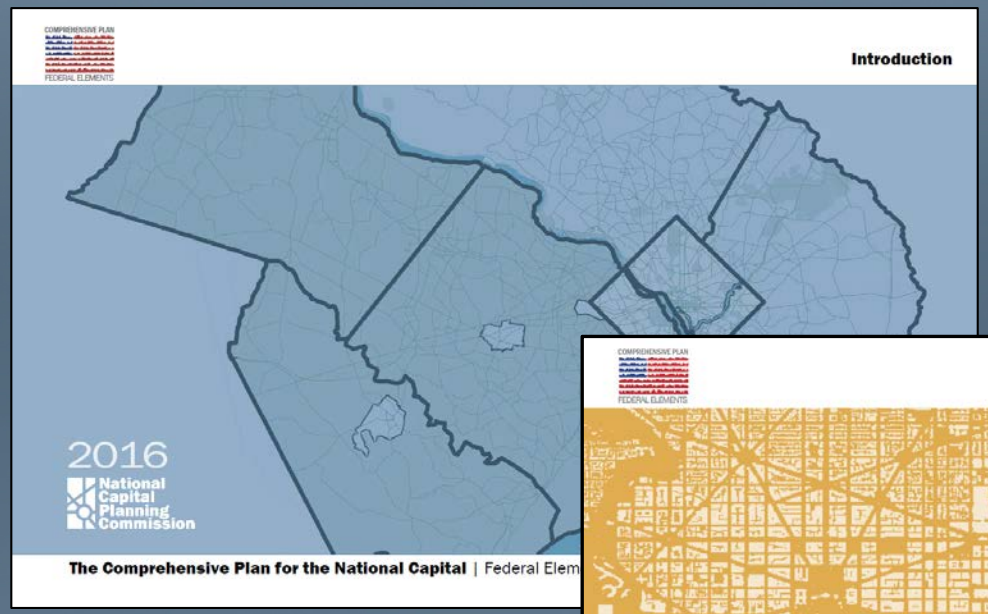


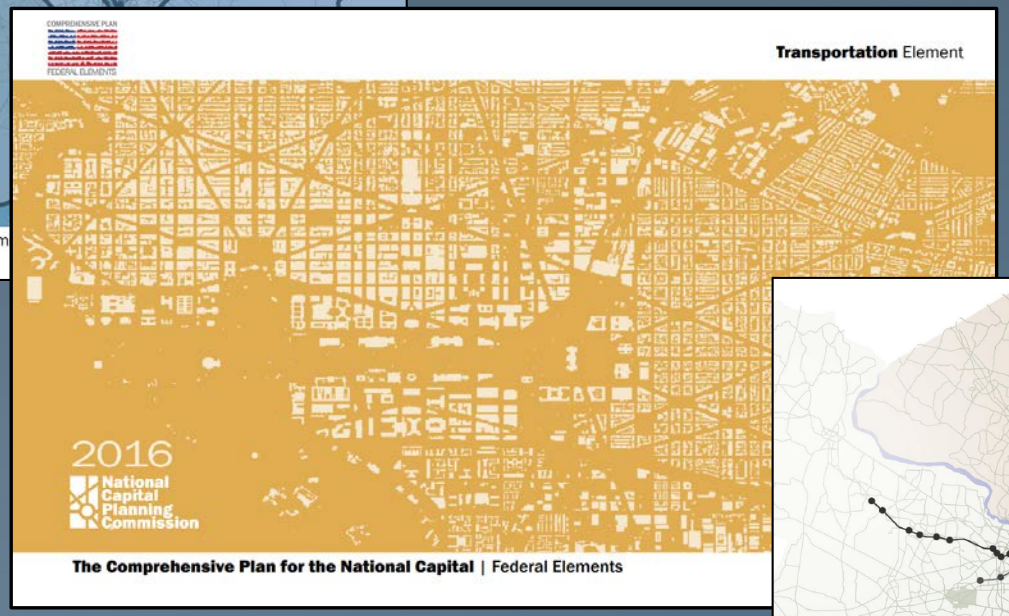
Core Comprehensive Plan Principles:

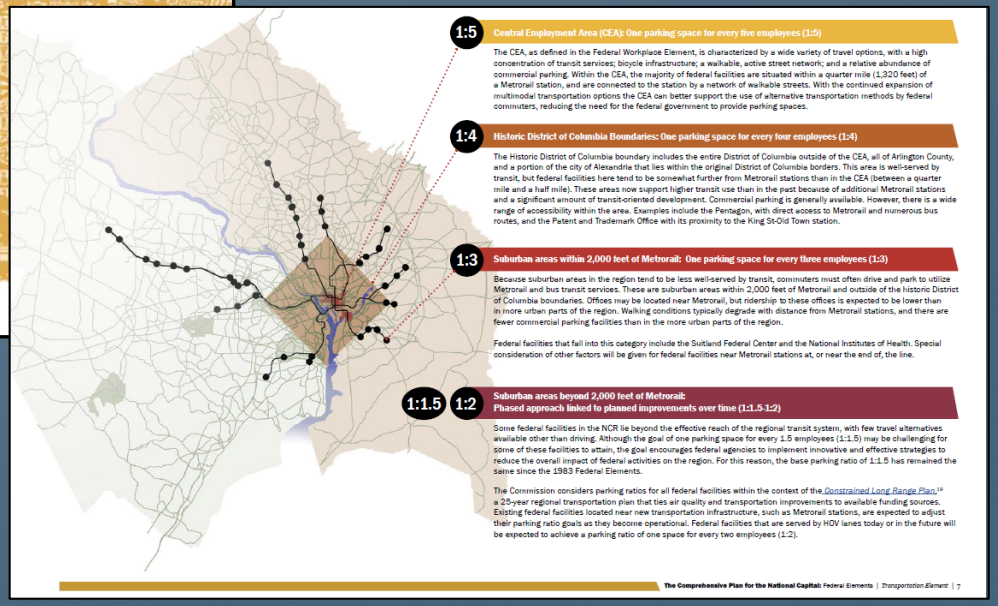
1. Accommodate Federal and National Capital Activities
2. Reinforce Smart Growth and Sustainable Development Planning Principles
3. Support Local and Regional Planning and Development Objectives



Parking Ratio Policy Context

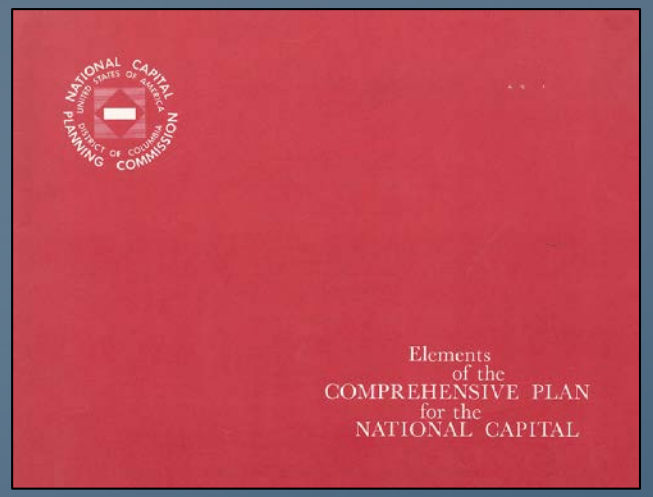






Previous NCPC Parking Ratio Policy

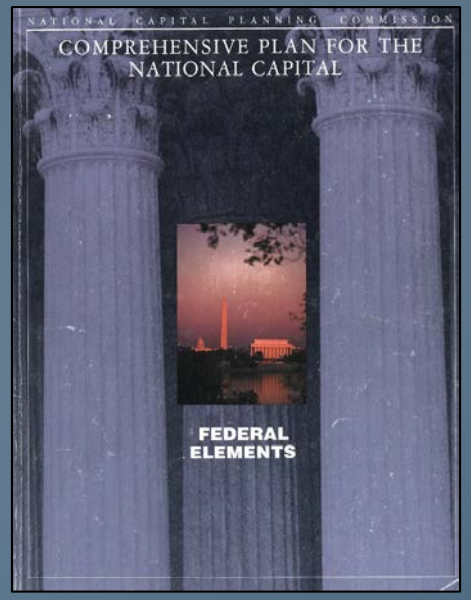
- Automobile must be controlled.
- Advanced a comprehensive mass transit program (Metrorail); major freeway expansion program; and major street improvements for express/local bus service improvements and to form an integrated circulation network.
- Established:
  - *Basic Plan Policies: Central Area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



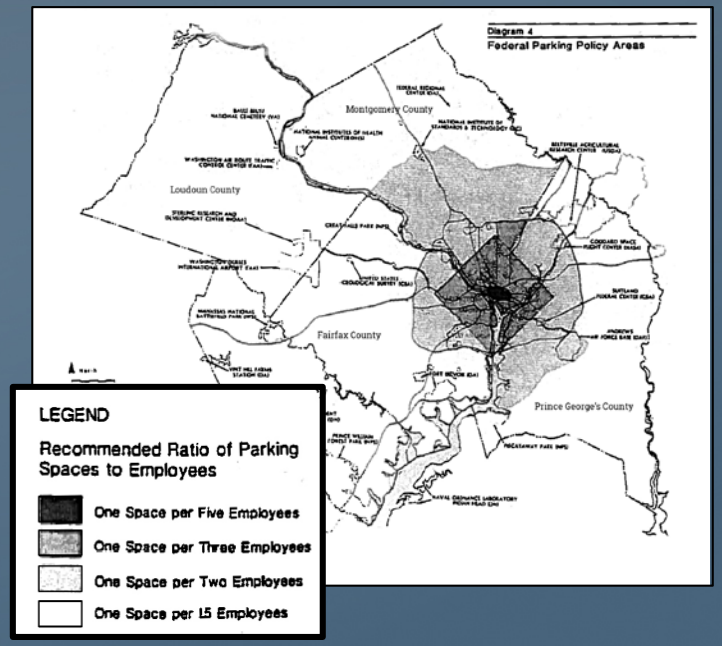
1969

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)*

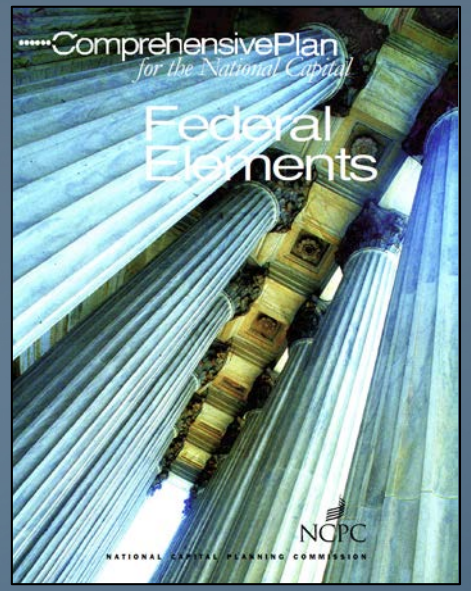


1989



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)*

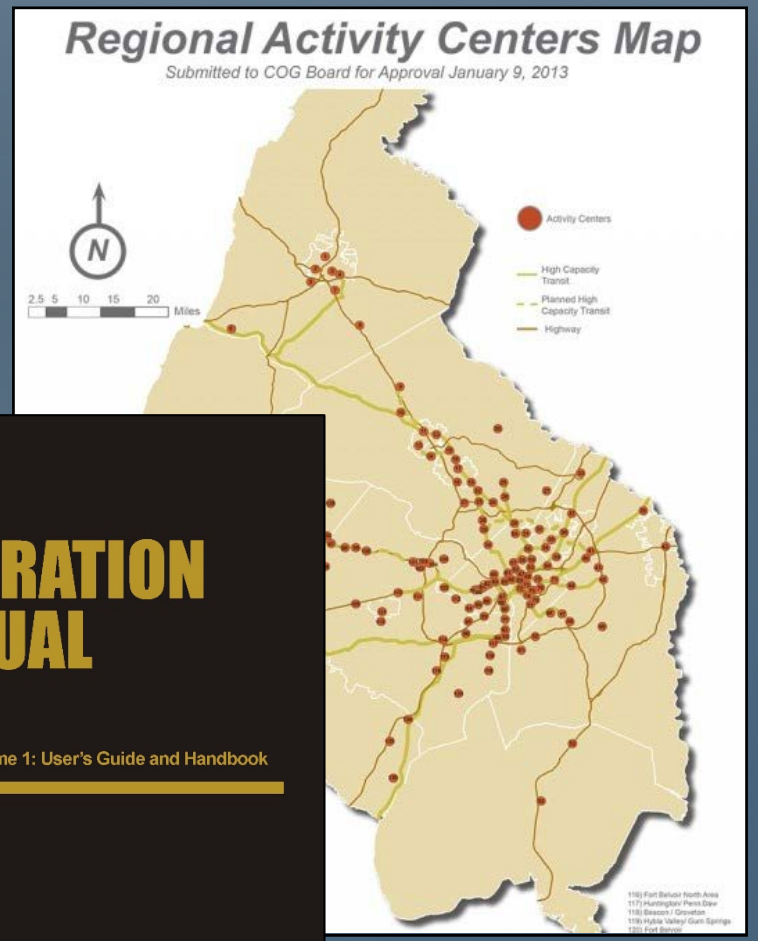


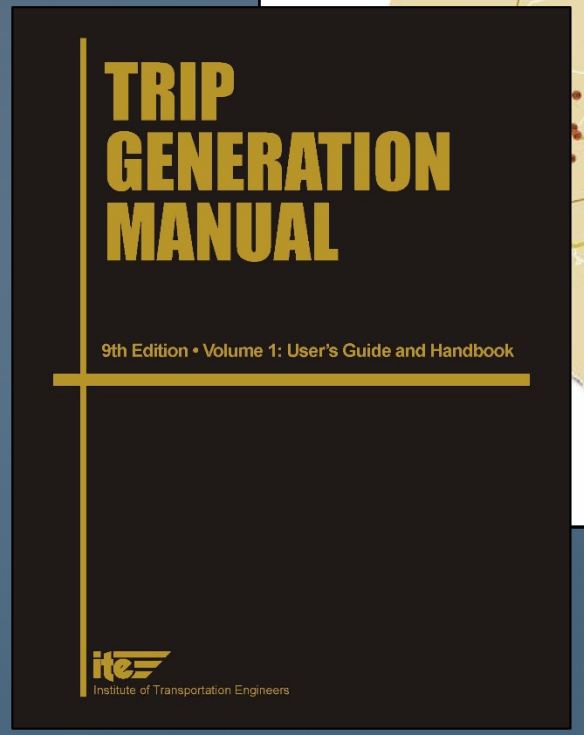
2004

2016

Purpose

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



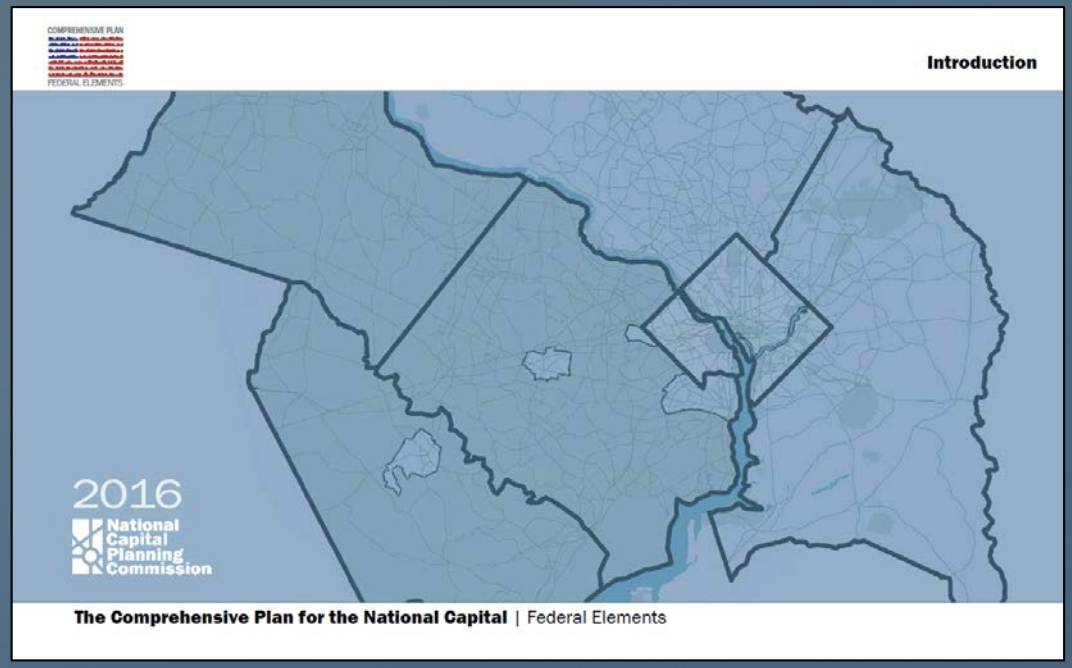


Study Timeline:

Summer: Finalize Volpe Study / Recommendations

Fall: Final Commission Presentation

Winter: Potential Amendments to NCPC Policies



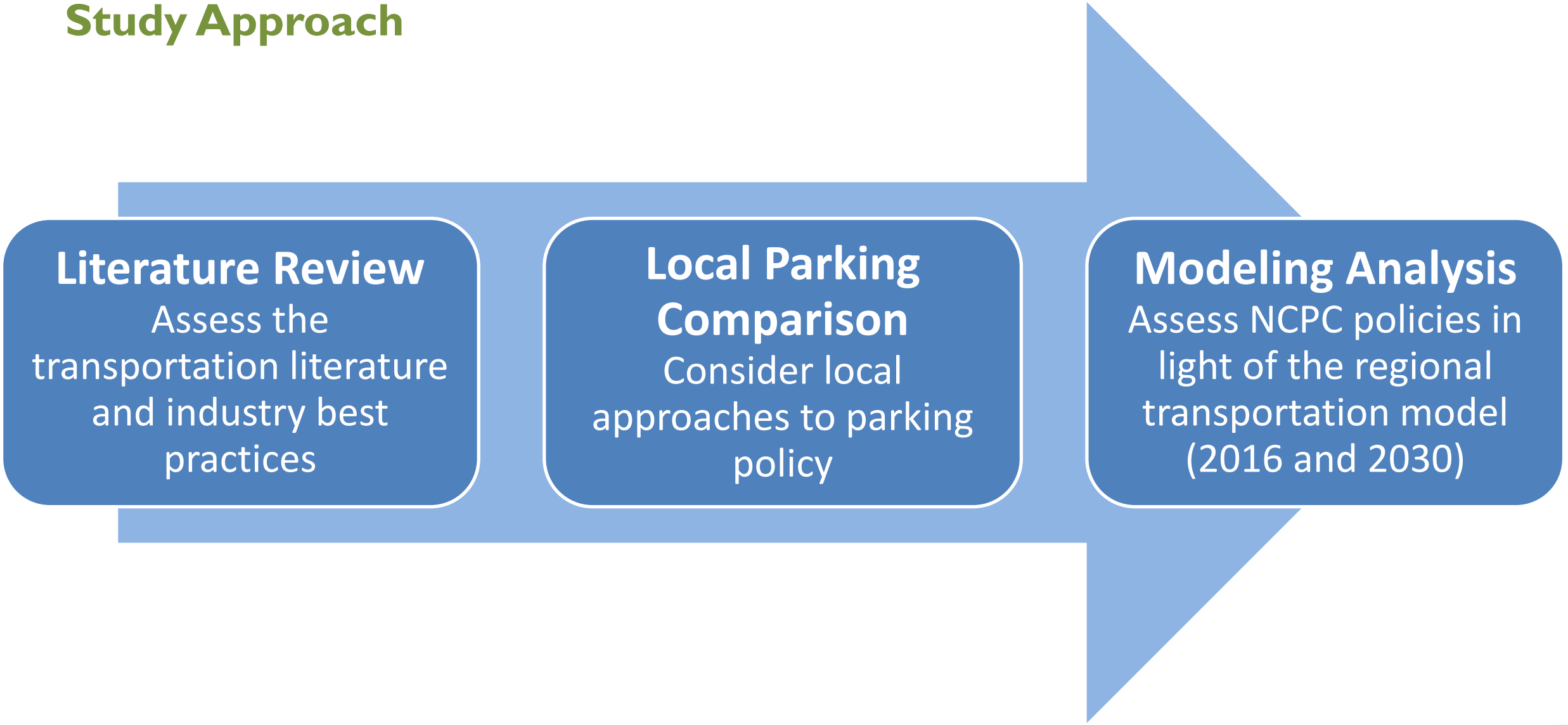
U.S. DOT Volpe National Transportation Systems Center

- 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)

Volpe

The National Transportation Systems Center

Study Approach



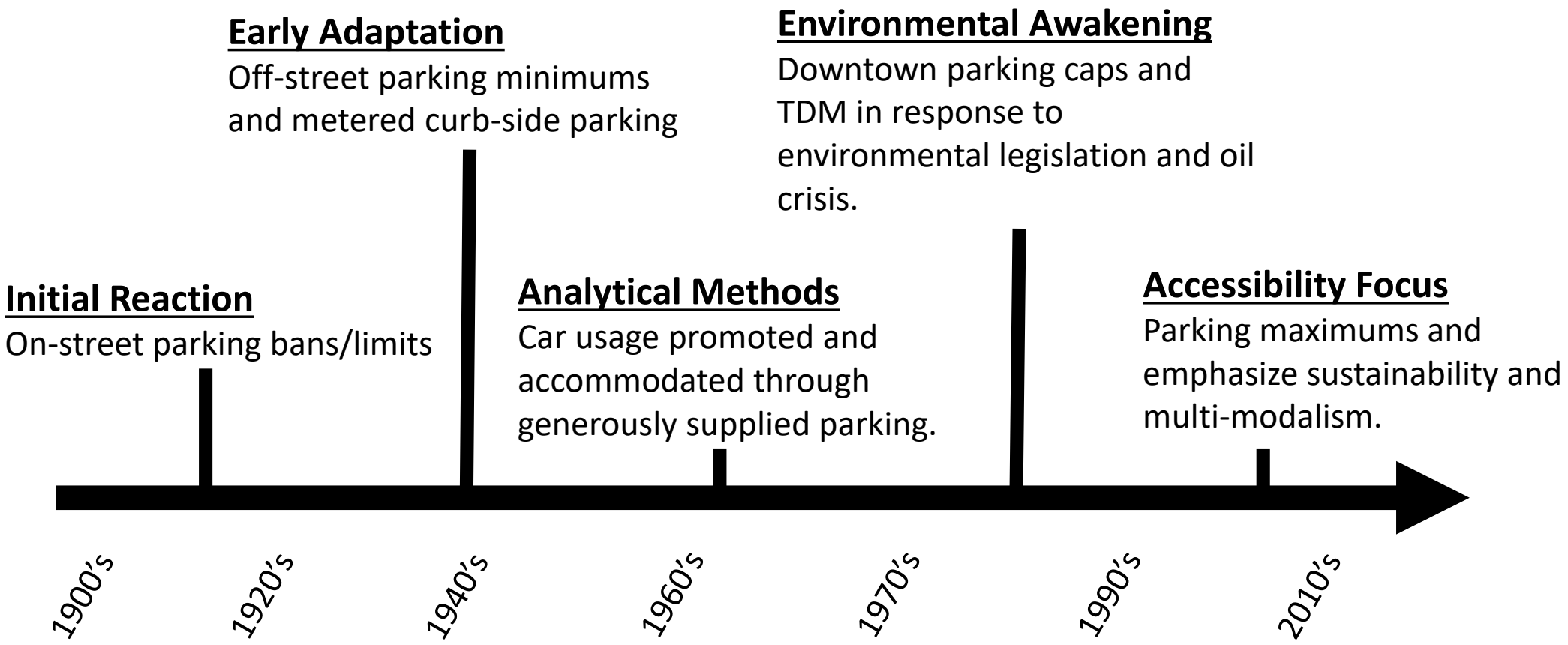
Study Approach

Literature Review
Assess the transportation literature and industry best practices

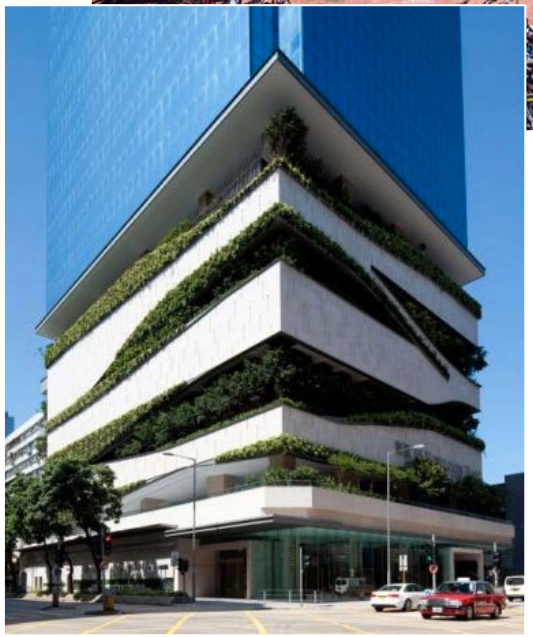
Local Parking Comparison
Consider local approaches to parking policy

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

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.

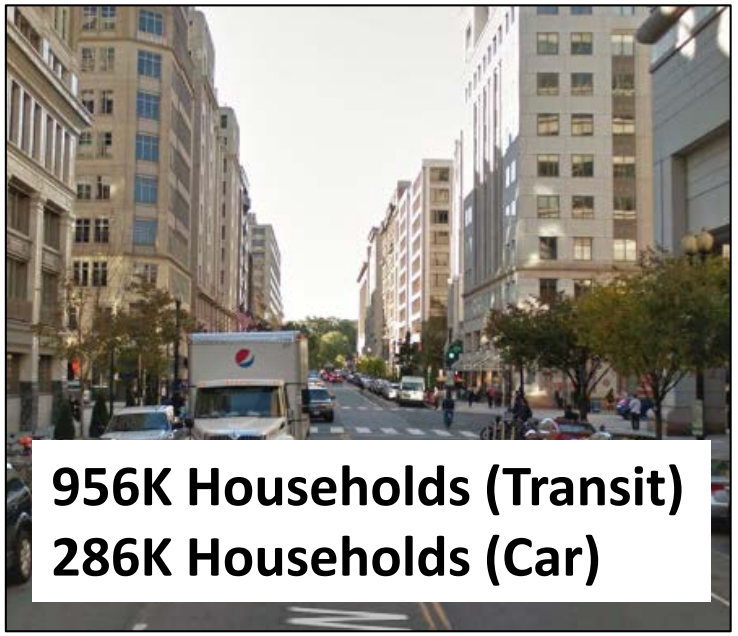
Time and Costs Explain Individual Mode Choice Decisions

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**

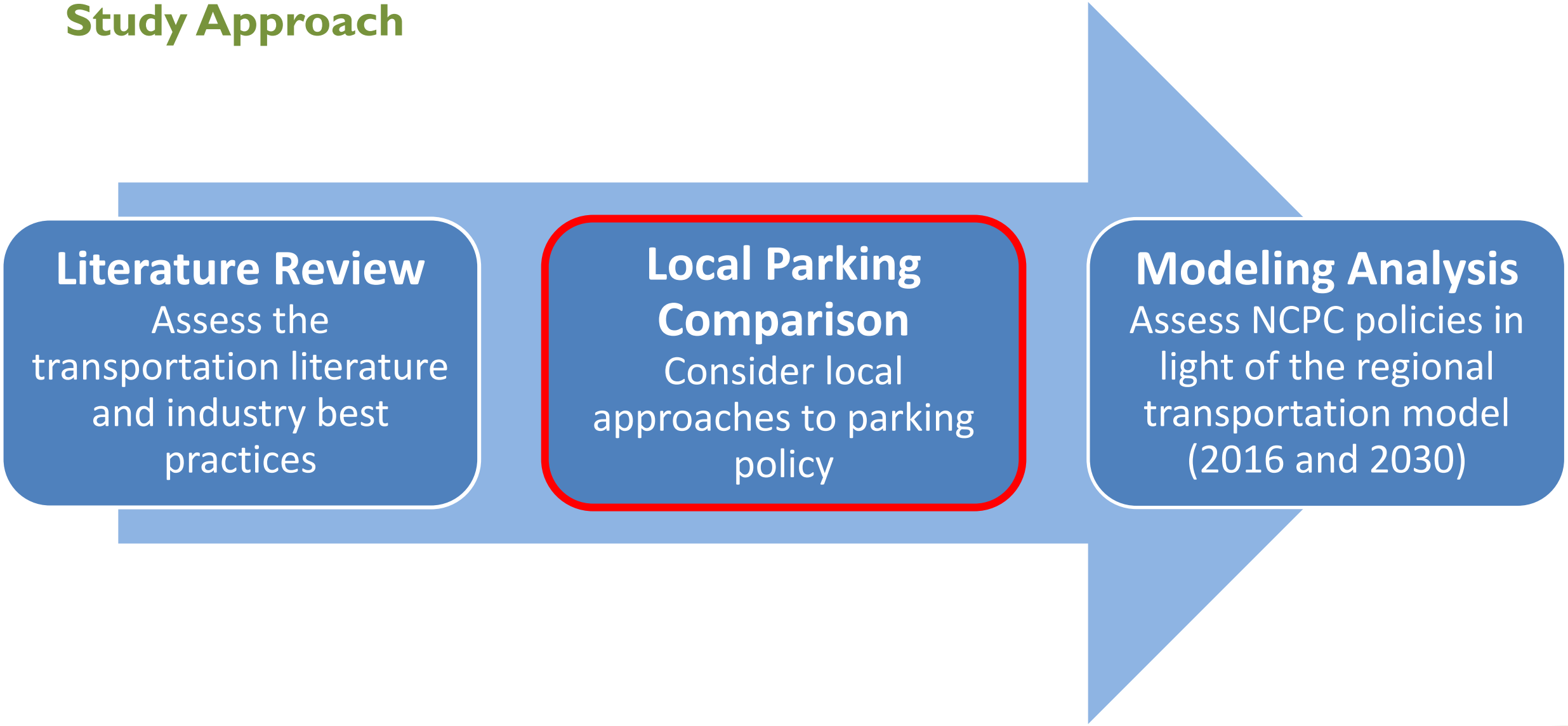


956K Households (Transit)
286K Households (Car)

412K Households (Transit)
473K Households (Car)

246K Households (Transit)
328K Households (Car)

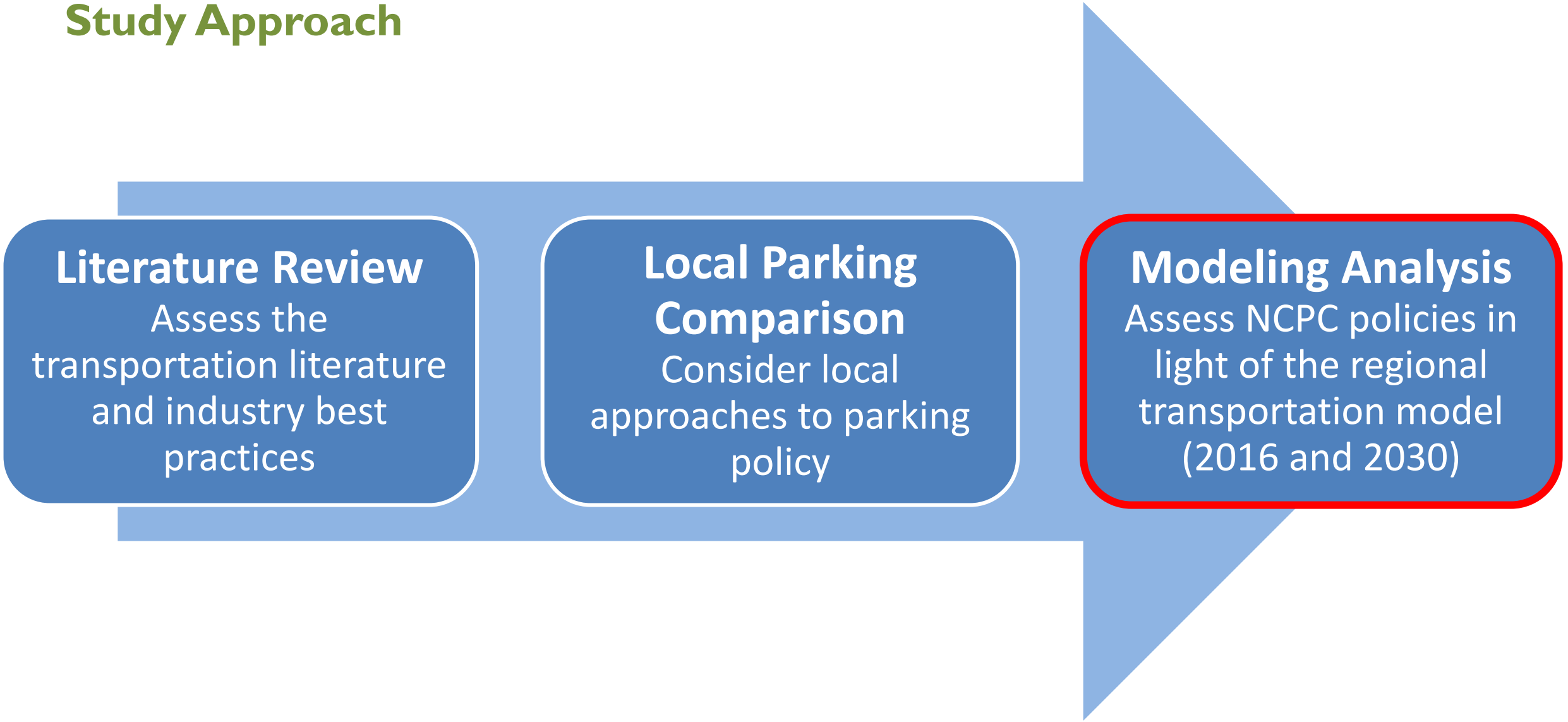
Study Approach



Local Parking Comparison

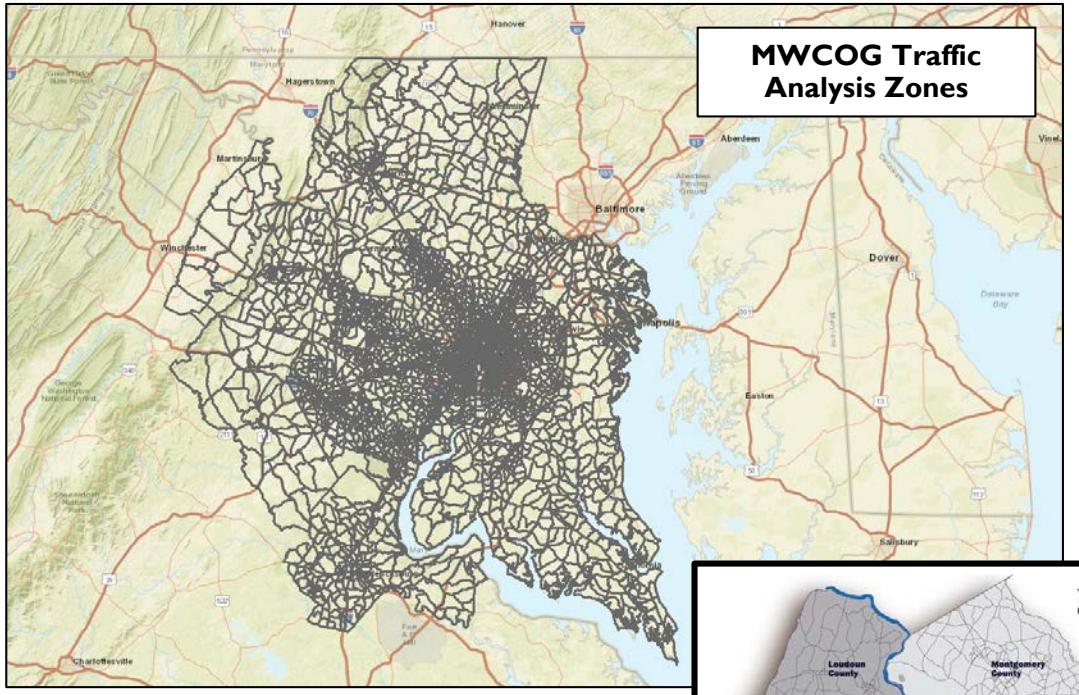
- NCPC has different review tools and authorities than local jurisdictions.
- Local jurisdictions increasingly encourage transit and more efficient land use patterns. To achieve this, they are:
  - **Limiting/Eliminating parking requirements**: Shifting from parking minimums to maximums (i.e., DC).
  - **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



Modeling Analysis – MWCOG's Regional Transportation Model

- Metropolitan Washington Council of Governments (MWCOG) 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)

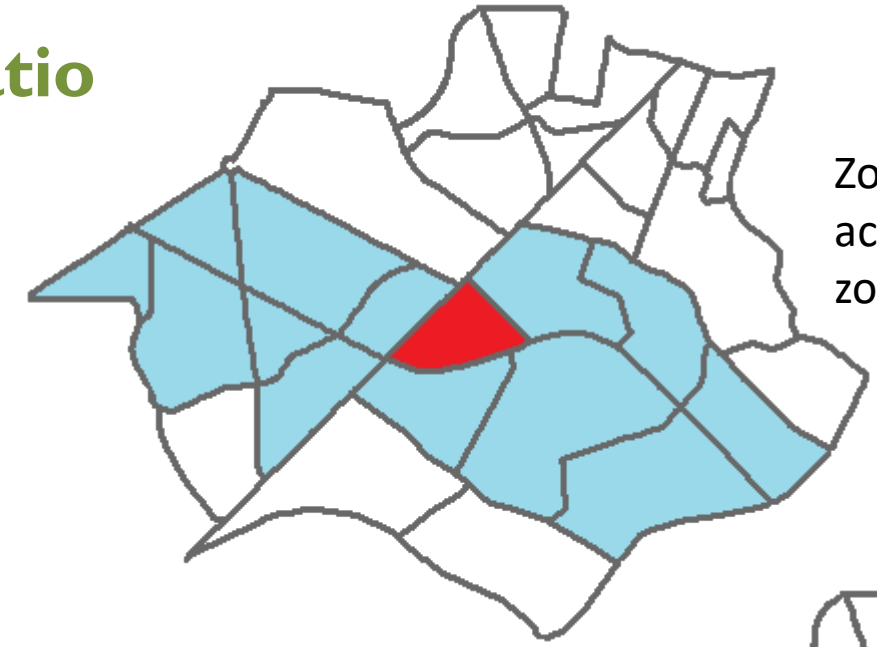


Modeling Analysis - Accessibility Ratio

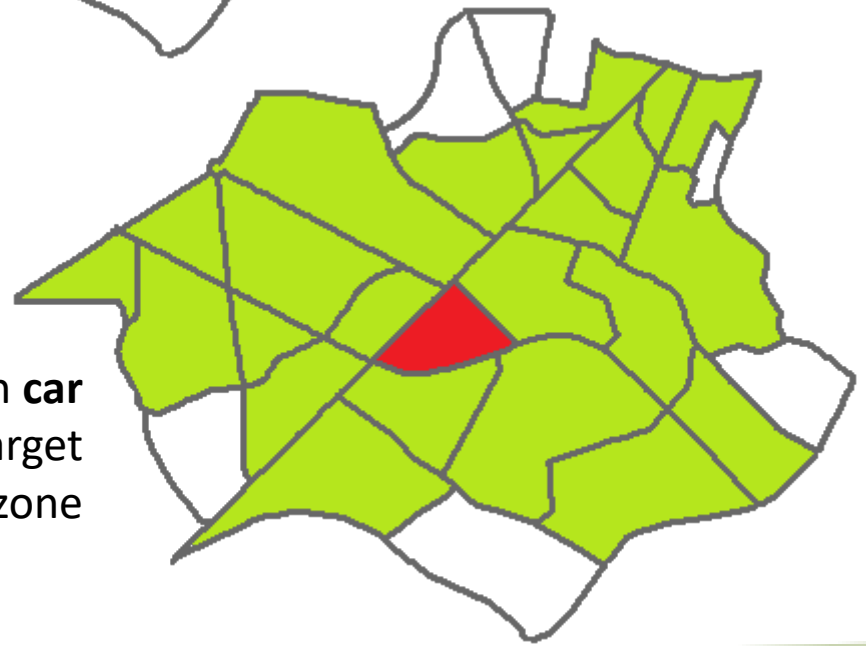
- Tradeoff between transit choices and drive-alone, so we consider the ratio

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

- **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

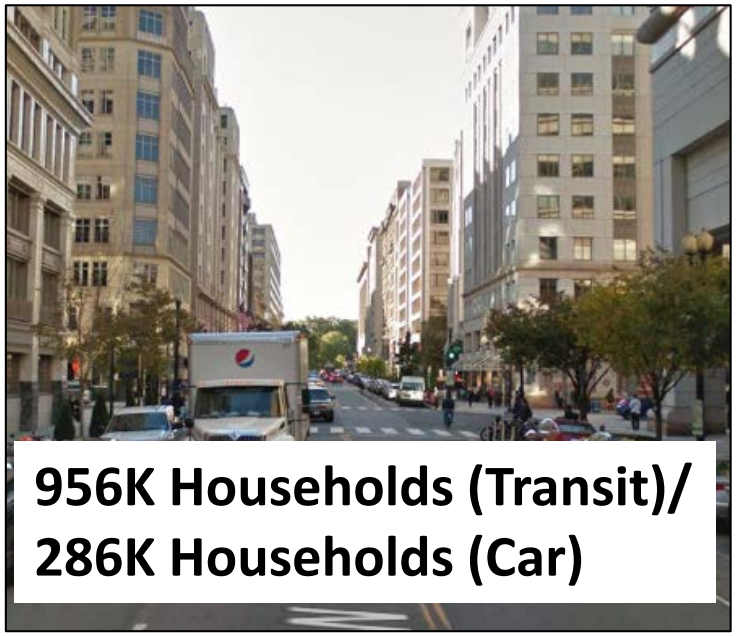
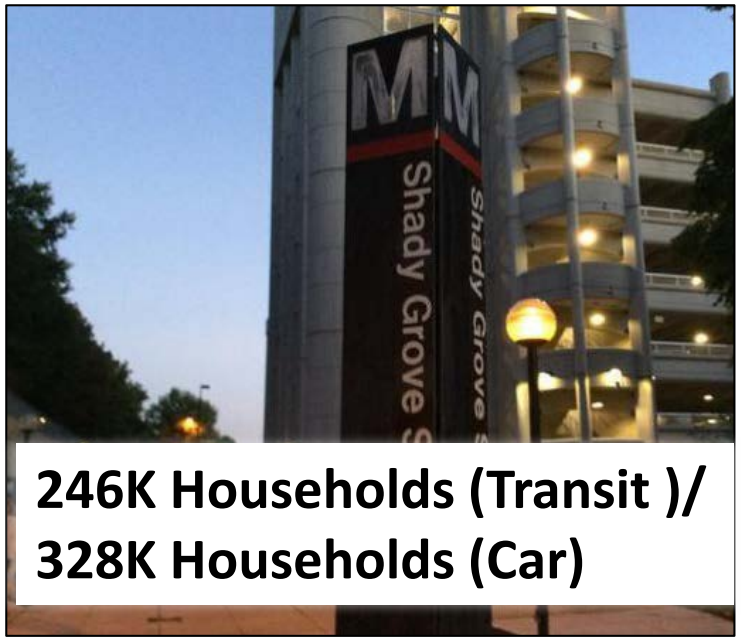


Zones with **transit** access to target zone



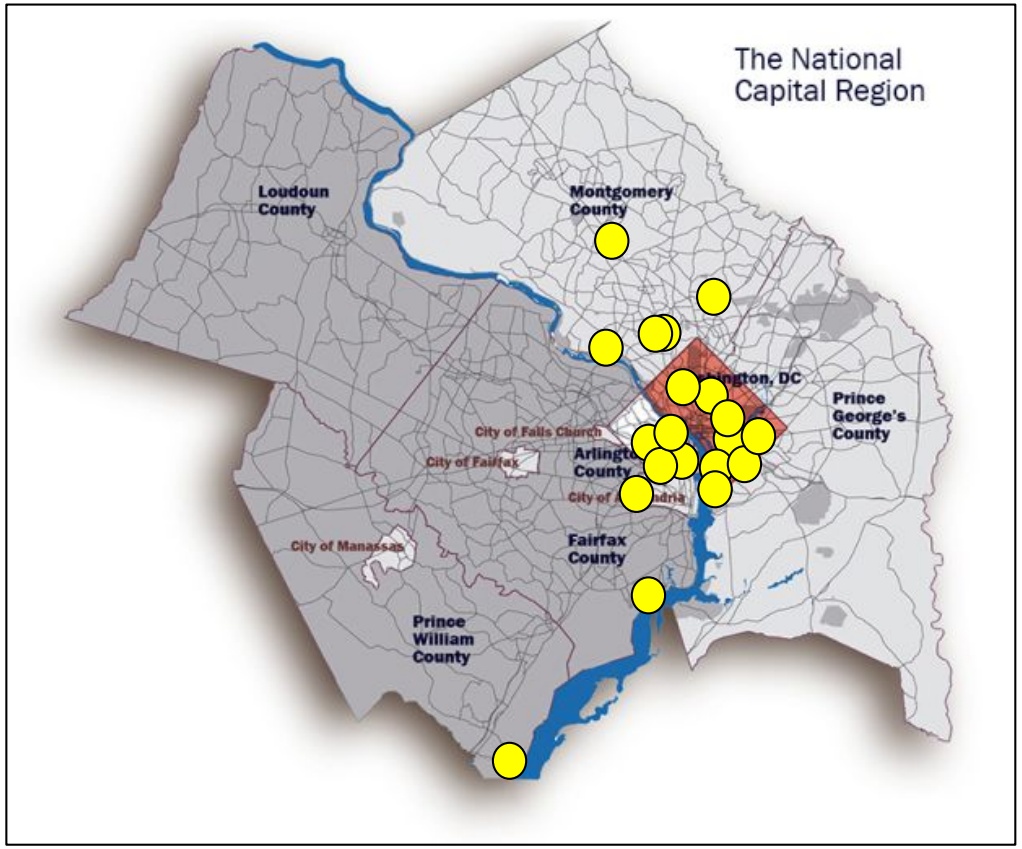
Zones with **car** access to target zone

Modeling Analysis – Accessibility Ratio

Metro Center	vs.	Takoma	vs.	Gaithersburg
				
956K Households (Transit)/ 286K Households (Car)		412K Households (Transit)/ 473K Households (Car)		246K Households (Transit)/ 328K Households (Car)
Accessibility Ratio: 3.34		0.87		0.75

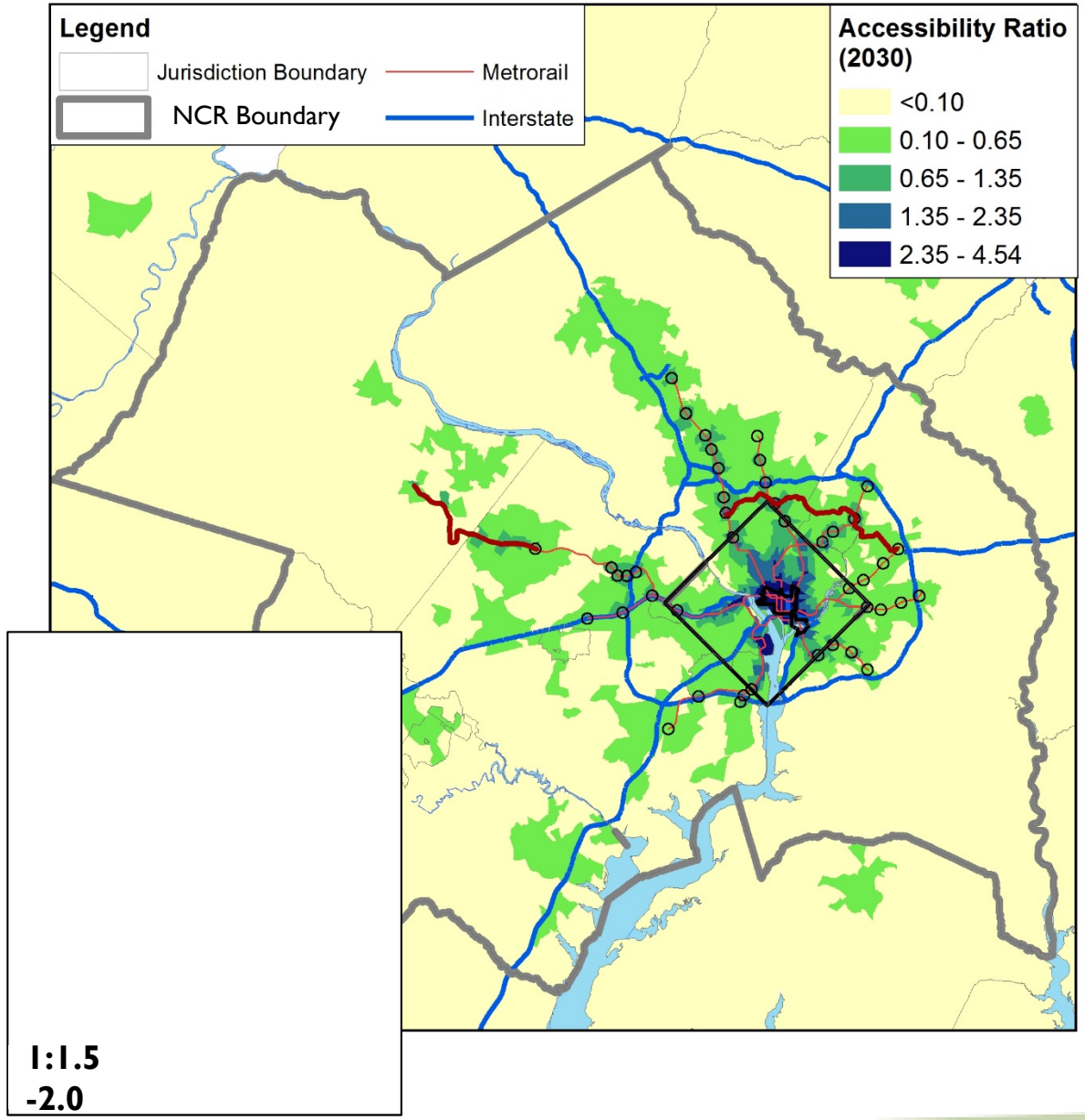
Modeling Analysis – Sampling Federal Facilities

- 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.

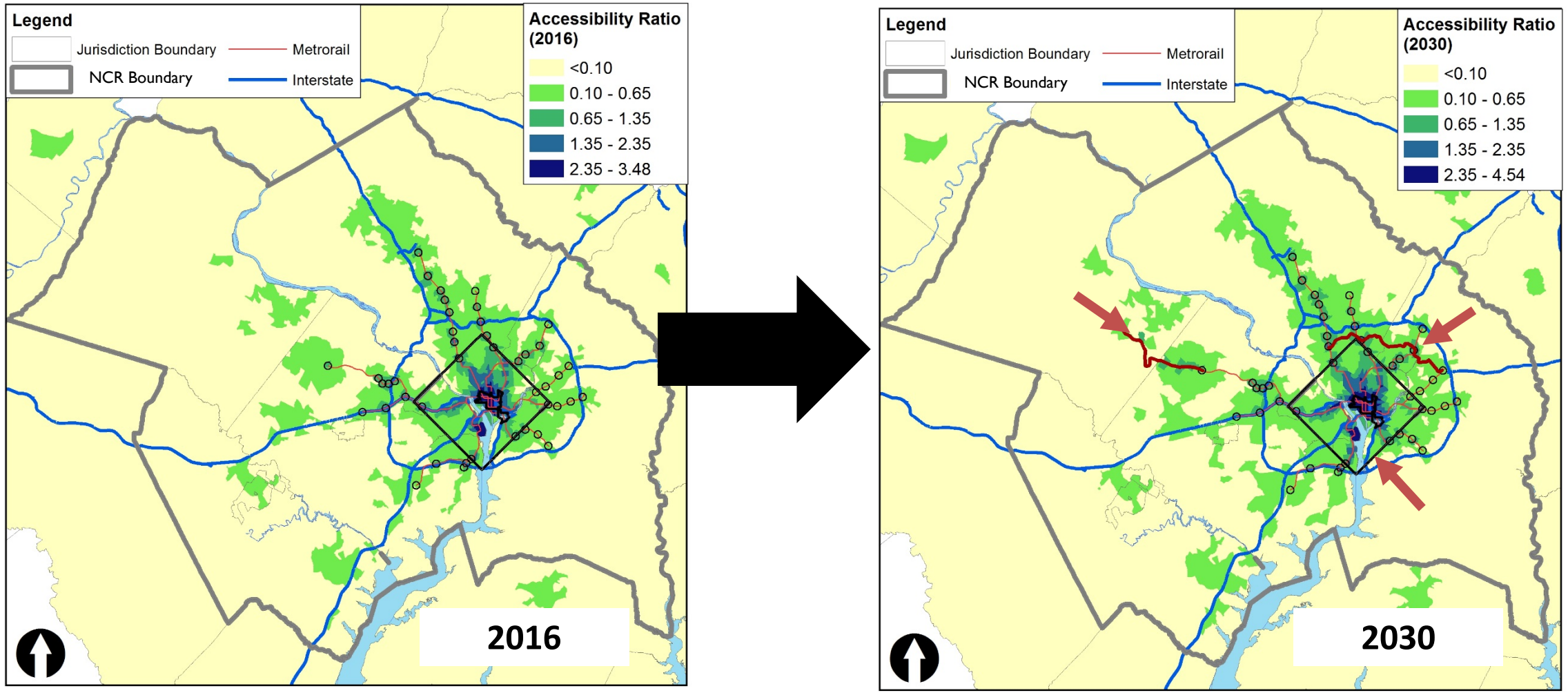


Modeling Analysis Observations

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).

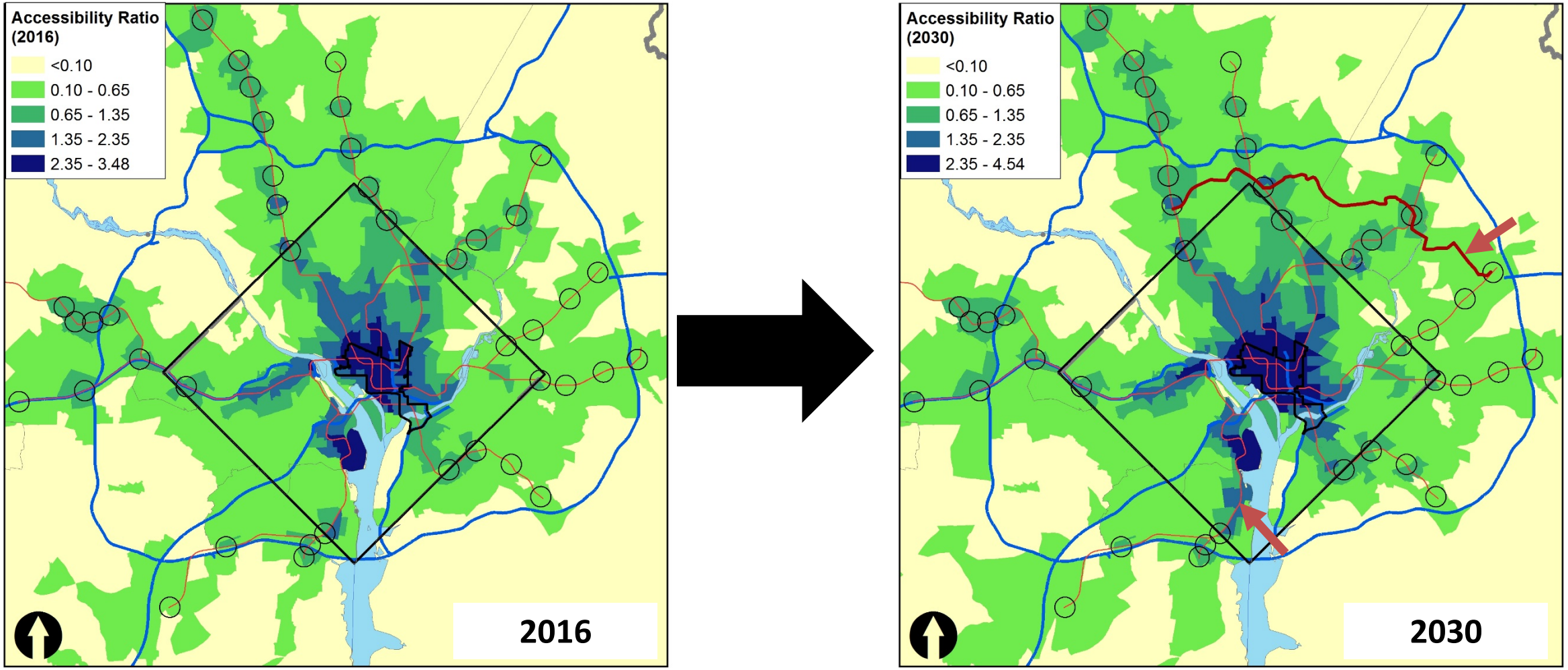


Modeling Analysis Observation # 1: *A Changing Core*



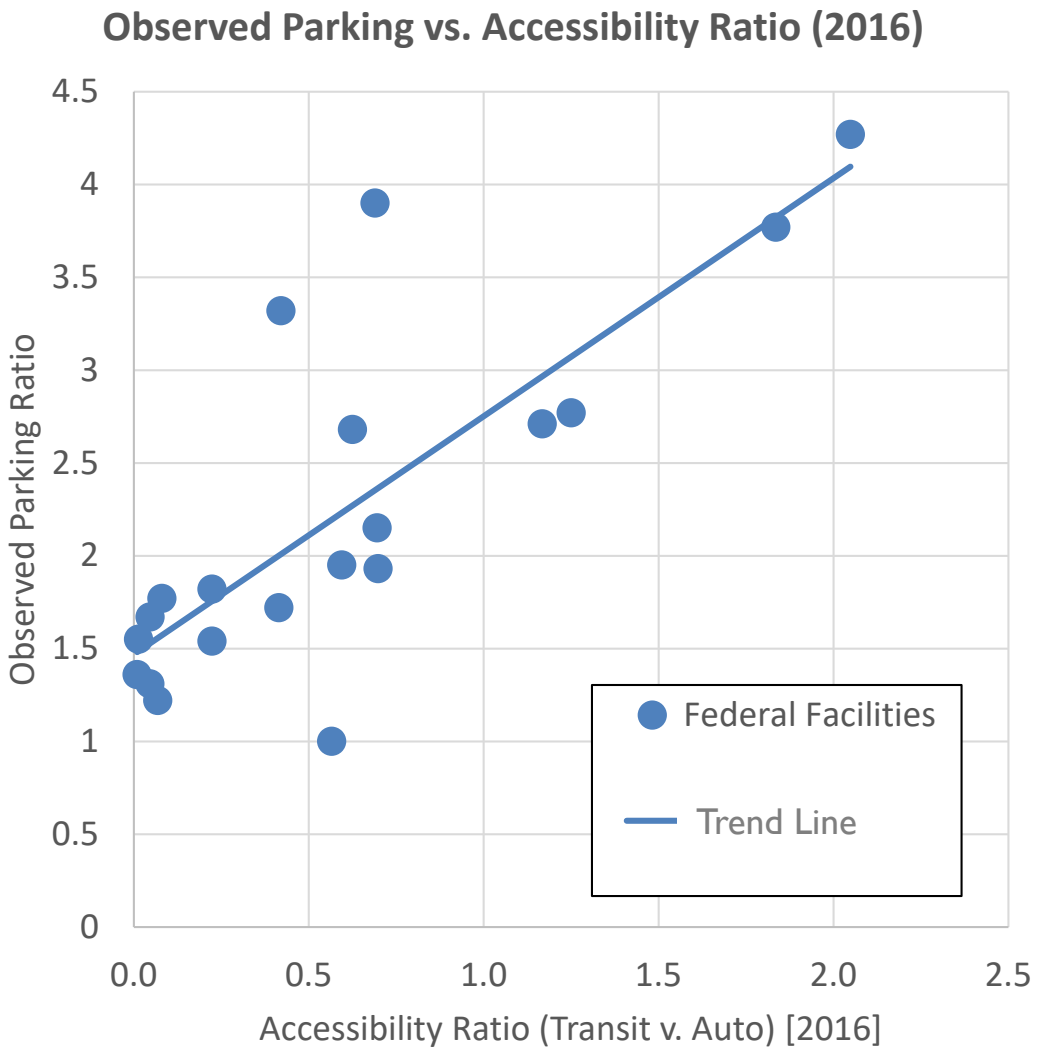
The accessibility ratio is strongly linked to Metrorail service, with buses providing service elsewhere in the region.

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*



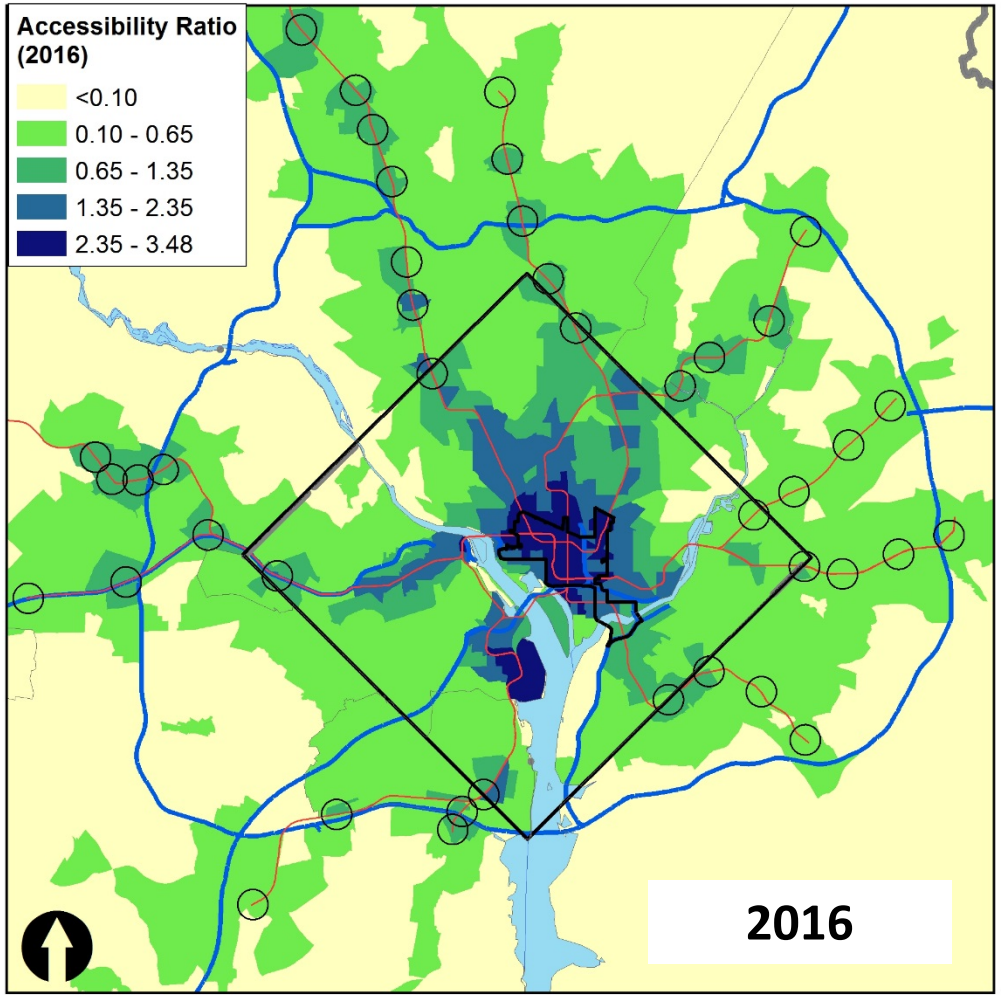
- Accessibility ratio predicts 62% of the variation in real world parking supply at the sampled facilities
- Outliers: NSA-Bethesda, St. Elizabeths, and Naval Observatory (92% when removed)

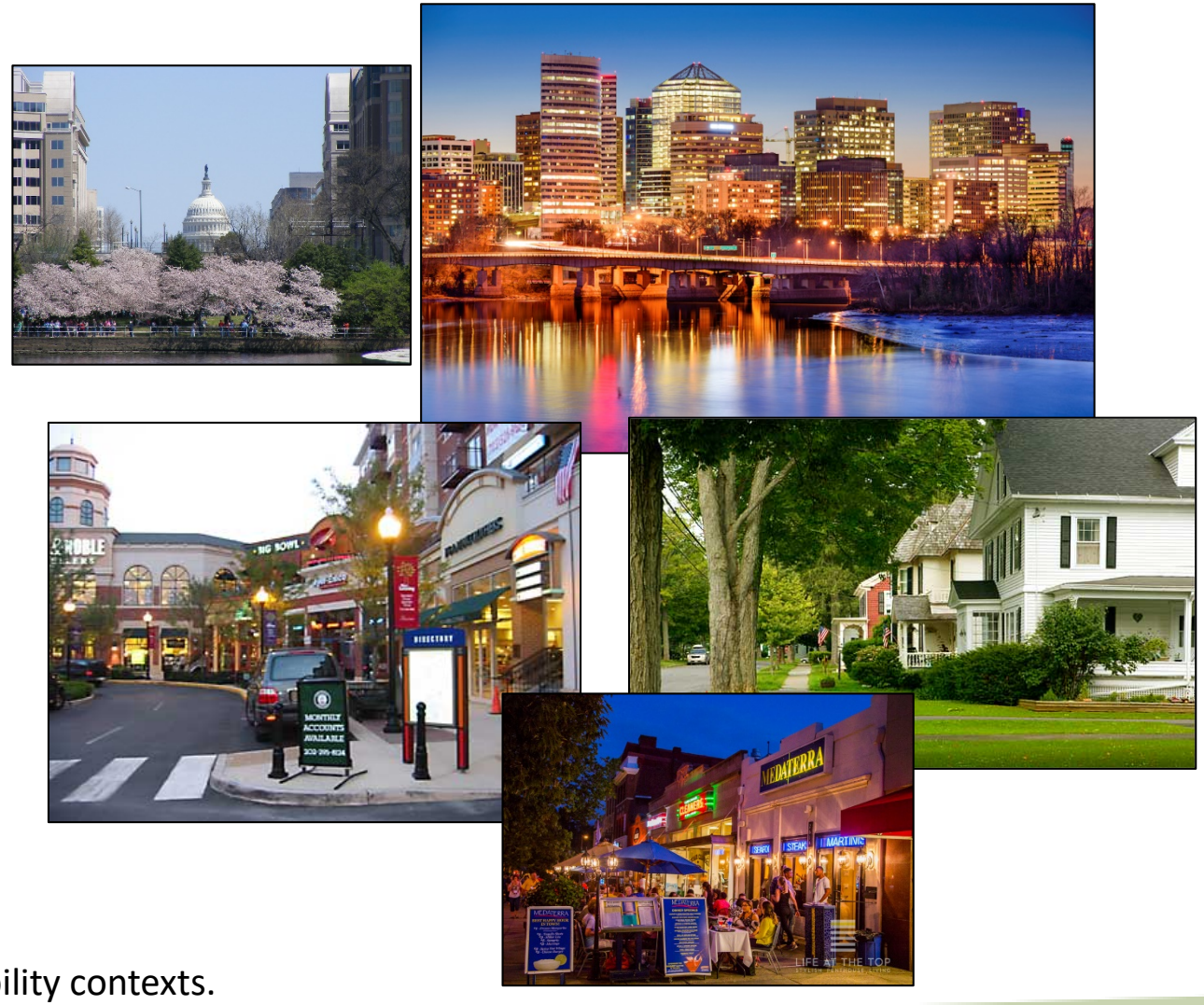
NSA-Bethesda

St. Elizabeths

Naval Observatory

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

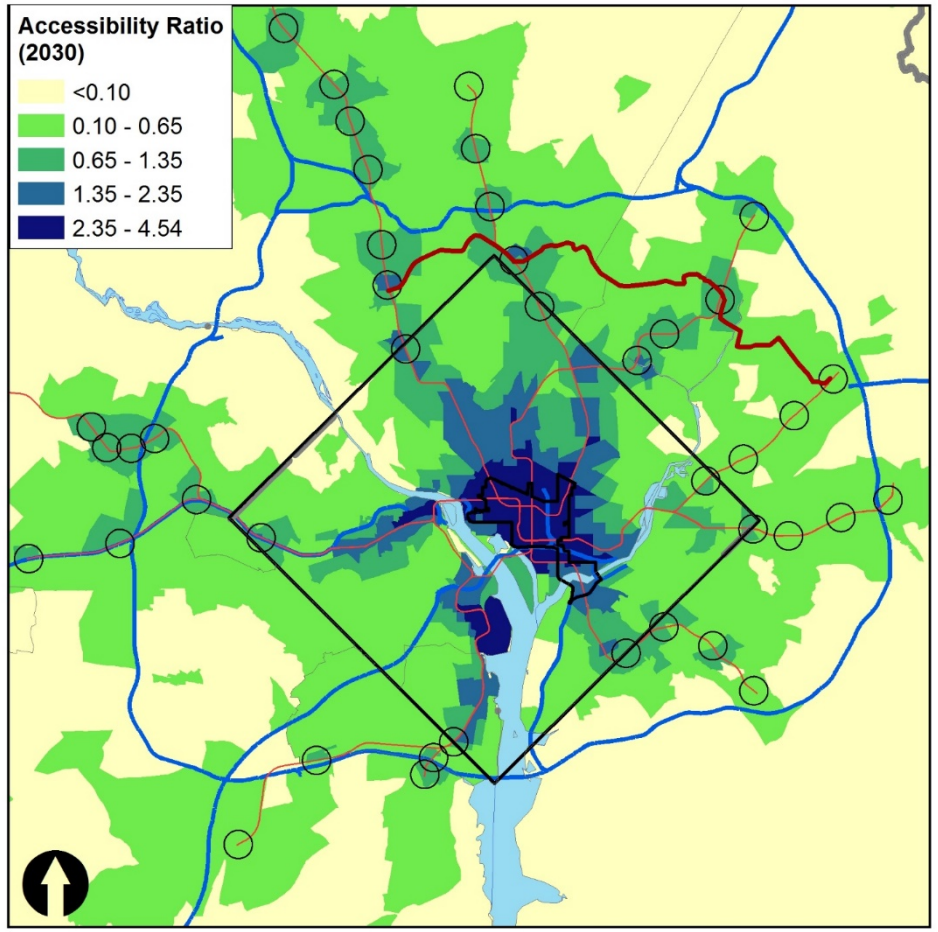




The historic DC Zone (1:4 ratio) encompasses a variety of accessibility contexts.

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?