WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

PARKING REVENUE ANALYSIS MODEL

Rail~Volution 2005
WMATA Parking Revenue Analysis Model

Model Components

1. Parking Revenue Reduction
   Impact of eliminated parking at target station

2. Ridership Revenue Reduction
   Impact of eliminated parking at target station

3. Revenue Recapture (Displaced Parkers)
   System impact of displaced patrons (Parking + Ridership Revenue)

4. Ridership Revenue (Joint Development)
   Impact of new Joint Development project

5. Rent/Sale Proceeds (Joint Development)
   Real estate income from Joint Development project

Annual Parking / Ridership Revenue Impact

Annual Revenue or NPV Parking/Ridership +
Annual Revenue or NPV Joint Development

GOAL

Determine impact of parking change on WMATA revenue stream

Annual Revenue (or NPV) \( \geq 0 \)?
FIGURE 1: TARGET STATION PARKING REVENUE REDUCTION METHODOLOGY

- Parking Inventory
- Parking Spaces Lost (Reserved / Non-Reserved)
- Parking Occupancy

Effective Parking Spaces Lost (Reserved / Non-Reserved) → Daily Parking Rate → Model Component 1: Target Station Parking Revenue Reduction

* Note: Default Model Parameters can be changed by user
FIGURE 2: TARGET STATION RIDERSHIP REVENUE REDUCTION METHODOLOGY

- Parking Inventory
- Parking Spaces Lost
- Parking Occupancy
- Effective Parking Spaces Lost
- Number of Displaced Metrorail Person Trips
- Average Vehicle Occupancy
- Rail Fare
- Model Component 2
  - Target Station Ridership
  - Revenue Reduction

* Note: Default Model Parameters can be changed by user.
FIGURE 3: SYSTEM REVENUE RECAPTURED FROM DISPLACED PARKERS METHODOLOGY

- Parking Inventory
- Parking Spaces Lost
- Parking Occupancy
- Effective Parking Spaces Lost
- Number of Displaced Metrorail Person Trips
- Station Classification
- Existing Station Mode Split
- Displaced Riders Future Mode Split Assumption
- Parking Opportunity at Adjacent Metro Station Facility
- Parking Opportunity at Adjacent Non-Metro Facility
- Park at Adjacent Metro Station
- Park at Adjacent Non-Metro Facility
- Kiss & Ride / Carpool
- Bus to Station
- Other Mode to Station
- Bus to Destination
- Rail Fare
- Bus Fare
- Model Component
- System Revenue Recaptured From Displaced Parkers

* Note: Default Model Parameters can be changed by user
FIGURE 4: RIDERSHIP REVENUE FROM JOINT DEVELOPMENT METHODOLOGY

- ITE Vehicle Trip Generation
- Geographic Location
- Travel Mode Split
- Person Trips
- Average Vehicle Occupancy
- Land Use Type
- Development Size
- Rail Fare
- Rail Person Trips
- Non-Metro Trips
- Rail Revenue
- Model Component 4: Revenue Gained from Development Ridership

* Note: Default Model Parameters can be changed by user
**FIGURE 5: REAL ESTATE REVENUE FROM JOINT DEVELOPMENT METHODOLOGY**

- **Land Use Type**
  - **Development Size**
    - **Sale Value**
      - **Initial Proceeds / Costs**
        - **Structured Parking Construction Costs**
        - **Structured Parking Replacement**
      - **Ground Lease**
        - **Participating Lease**
          - **Annual Operations and Maintenance Costs of Structured Parking**
          - **Annual Real Estate Revenue**
            - **NPV of Real Estate Revenue**
              - **Inflation Rate**
              - **Discount Rate**

*Note: Default Model Parameters can be changed by user*
WMATA Parking Revenue Analysis Model

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1. Parking Revenue Reduction
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   Impact of new Joint Development project

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GOAL
Determine impact of parking change on WMATA revenue stream

Annual Revenue or NPV Parking/Ridership + Annual Revenue or NPV Joint Development

Annual Joint Development Revenue Impact

≥ $0?
### WMATA Joint Development Parking Analysis

#### User Input Sheet

<table>
<thead>
<tr>
<th>Station</th>
<th>Example Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>Auto Commuter</td>
</tr>
<tr>
<td>Location</td>
<td>Outside Subway</td>
</tr>
</tbody>
</table>

#### STATION INFORMATION

**Parking Information**

<table>
<thead>
<tr>
<th>Existing Long Term Parking Spaces</th>
<th>Reserved</th>
<th>Non-Reserved</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed Long Term Spaces to be removed</td>
<td>150</td>
<td>0</td>
<td>150</td>
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<tr>
<td>Remaining Long Term Parking Spaces</td>
<td>-150</td>
<td>400</td>
<td>250</td>
</tr>
</tbody>
</table>

**Opportunity for parking at Nearby Metro Stations (Mark one "x")**

- Ample
- Some
- None

**Opportunity for nearby parking in non-WMATA lots (Mark one "x")**

- Ample
- Some
- None

### Parking Rate and Fare Information

<table>
<thead>
<tr>
<th>Period</th>
<th>Weekday Peak</th>
<th>Weekday Off-Peak</th>
<th>Weekend-Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking Rate (Daily)</td>
<td>$3.50</td>
<td>$3.50</td>
<td>$0.00</td>
</tr>
<tr>
<td>Reserved Parking Rate (Monthly)</td>
<td>$25.00</td>
<td>$25.00</td>
<td>$25.00</td>
</tr>
<tr>
<td>Average Metro Fare (One-Way Trip)</td>
<td>$1.55</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>Average Metrobus Fare (One-Way Trip)</td>
<td>$1.20</td>
<td>$1.20</td>
<td>$1.20</td>
</tr>
</tbody>
</table>

### JOINT DEVELOPMENT INFORMATION

**Development Land Use Type**

- Residential:
  - Apartment: 300 Dwelling Units
  - Condominium/Townhouse: 0 Dwelling Units
  - Hotel: 0 Rooms
  - Recreational: Movie Theatres: 0 Movie Screens
  - Office: General Office Building: 160,000 Square Feet Gross Floor Area
  - Retail:
    - Shopping Center (Neighborhood Retail): 174,500 Square Feet Gross Floor Area
    - Shopping Center (Destination Retail): 0 Square Feet Gross Floor Area
<table>
<thead>
<tr>
<th>JOINT DEVELOPMENT REVENUE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>User Inputs</strong></td>
</tr>
<tr>
<td>Ground Lease Base Rent</td>
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<tr>
<td>Sale Value</td>
</tr>
<tr>
<td>Residual Value Increase</td>
</tr>
<tr>
<td>Participating Rent</td>
</tr>
<tr>
<td>Other Rent</td>
</tr>
<tr>
<td>Structured Parking Replace</td>
</tr>
</tbody>
</table>

| **Assumptions**           |
| All-in Construction Cost  | $15,000 per Parking Space |
| Annual O&M                | $300 per Parking Space   |
| Preventive Maintenance Cost| $400 per Parking Space  |
| Preventive Maintenance Frequency| 5 Years                 |
| Structural Rehab Cost     | $5,500 per Parking Space |
| Structural Rehab Frequency | 20 Years                 |

| **Annual Impact of Joint Dev., O&M** | $1,150,000 |
| **Discount Rate**                 | 9%         |
| **Inflation Rate**                | 3%         |