Hudson Yards Redevelopment

Economic Overview and Demand Forecast

Presented by:

Economics Research Associates and Cushman & Wakefield

Spring 2003
Objective

- To create a strategy to unlock the value of the Hudson Yards and help secure New York’s economic future
- To create a vibrant new mixed-use commercial and residential district
- To create a realistic plan to fund the infrastructure improvements that will spur private investment in the area
Hudson Yards Today

- Madison Square Garden
- Javits
- MTA Yards
- PA Terminal
- 24th Street
- 28th Street
- 35th St
- 8th Ave
- 7th Ave
- 10th Ave

ERAA
The Challenge and Opportunity

- Midtown and Downtown are steadily losing office space market share
- Unless we take action now to expand available land for office development, Manhattan’s competitiveness may continue to erode
- Hudson Yards is the largest area proximate to Midtown that can accommodate the commercial development necessary to capture New York’s share of projected regional growth

“Without taking action to create more space, New York City will miss out on hundreds of thousands of new jobs and increased economic activity in the next 20 years.”

-Group of 35,
Preparing for the Future, 2001
Assets.

- Proximity to Midtown
- Access to the waterfront
- Major public facilities
- Developable land
- Ability to connect to existing transportation infrastructure

...and Challenges

- Outdated zoning
- Lack of transit access
- Declining employment and tax assessments
- Lack of public open space
- Dominated by surface car, truck and bus parking
- Javits Convention Center is not realizing its full potential
Demand Forecasts

- Office
- Residential
- Hotel
- Retail
Office Development

- Expansion of prime Midtown Office core
- Necessary to meet projected office demand
- Highest incremental property value
Midtown Office Market

- Comprises 294.5 million square feet, or 44% of NY region
- Combined with Downtown, totals 387 msf, or 59% of NY region’s office inventory
- Premier and largest office market in the nation
- Manhattan’s primary location for Services and FIRE sector employment
- Together with Downtown, Midtown is the NY region’s Economic Engine
- Losing share of occupied office space within NY region
New York Region
Occupied Office Space by Market
Historic 1986 – 2001

Midtown
Downtown
New Jersey
Long Island
Fairfield/ Westchester

Source: Cushman & Wakefield Analytics
New York Region
Average Annual Net Absorption by Market
Historic 1987 – 2000*

<table>
<thead>
<tr>
<th>Region</th>
<th>Net Absorption (millions of square feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manhattan Midtown</td>
<td>3.2</td>
</tr>
<tr>
<td>Manhattan Downtown</td>
<td>0.8</td>
</tr>
<tr>
<td>New Jersey</td>
<td>2.5</td>
</tr>
<tr>
<td>Long Island</td>
<td>0.4</td>
</tr>
<tr>
<td>Fairfield/Westchester</td>
<td>0.7</td>
</tr>
</tbody>
</table>

* Only through 2000 due to events of 9/11/2001 which adversely impacted both total inventory and occupied space.

Source: Cushman & Wakefield Analytics
New York Region

Source: Cushman & Wakefield Analytics

* Only through 2000 due to events of 9/11/2001 which adversely impacted both total inventory and occupied space.
New York Region
Net Absorption (1987 – 2000*) versus
Projected Net Absorption (2005 – 2025)

Midtown

Downtown

New Jersey

Frfld/Wstchster

Long Island

* Only through 2000 due to events of 9/11/2001 which adversely impacted both total inventory and occupied space.

Source: Cushman & Wakefield Analytics
Manhattan Office Construction 1950 - 2001
235.8 MSF or 4.5 MSF Annual Average

Source: Cushman & Wakefield Analytics
# Manhattan
Selection of Potential Development Sites

<table>
<thead>
<tr>
<th>Site</th>
<th>MSF</th>
<th>Site</th>
<th>MSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Con Edison</td>
<td>2.5</td>
<td>World Trade Center</td>
<td>10.0</td>
</tr>
<tr>
<td>One Bryant Park</td>
<td>2.1</td>
<td>Site 26/BPC</td>
<td>1.8</td>
</tr>
<tr>
<td>20 Times Square</td>
<td>1.3</td>
<td>55 Water St</td>
<td>0.8</td>
</tr>
<tr>
<td>Hotel Pennsylvania</td>
<td>1.1</td>
<td>15 William St</td>
<td>0.5</td>
</tr>
<tr>
<td>Roosevelt Hotel</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Midtown = 20+ msf  
Downtown = 13-15 msf

Source: Cushman & Wakefield Analytics
Midtown
Office Construction 1900 - 2002

Source: Cushman & Wakefield Analytics
New York Region
Office-using Employment by Year
1986 – 2025

2005-2025 Regional Office-using Employment Growth = 443,450

Source: Economy.com, NYC Planning, NYC Office of Management and Budget, Cushman & Wakefield Analytics
New York Region
Occupied Office Space per Office-using Employee
Historic 1986 – 2001

Sources: Economy.com, Cushman & Wakefield Analytics
New York Region Office-Using Employment and Office Demand
Projected 2005 – 2025

Total Change in Office-Using Employment = 443,450

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Square Feet Per Employee</th>
<th>Total Demand (Square Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>200</td>
<td>88,690,000</td>
</tr>
<tr>
<td>Base</td>
<td>250</td>
<td>110,862,250</td>
</tr>
<tr>
<td>High</td>
<td>300</td>
<td>133,035,000</td>
</tr>
</tbody>
</table>

Source: Economy.com, NYC Office of Management and Budget, NYC Planning, Cushman & Wakefield Analytics
New York Region
Change in Occupied Space by Market
Projected 2005 – 2025

<table>
<thead>
<tr>
<th>Market</th>
<th>Capture Rate</th>
<th>Low</th>
<th>Base</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midtown</td>
<td>40.7%</td>
<td>36.1</td>
<td>45.1</td>
<td>54.1</td>
</tr>
<tr>
<td>Downtown</td>
<td>8.7%</td>
<td>7.7</td>
<td>9.6</td>
<td>11.6</td>
</tr>
<tr>
<td>New Jersey</td>
<td>35.2%</td>
<td>31.2</td>
<td>39.0</td>
<td>46.8</td>
</tr>
<tr>
<td>Fairfield/Westchester</td>
<td>9.2%</td>
<td>8.2</td>
<td>10.2</td>
<td>12.2</td>
</tr>
<tr>
<td>Long Island</td>
<td>6.2%</td>
<td>5.5</td>
<td>6.9</td>
<td>8.2</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>88.7</td>
<td>110.9</td>
<td>133.0</td>
</tr>
</tbody>
</table>

*Capture Rate based on recent trends

Source: Cushman & Wakefield Analytics
Midtown Office Market 2005 - 2025
Demand Forecast Assumptions

- Regional office-using employment growth of 443,450 results in demand for 89 msf, **111 msf** or 133 msf
- Midtown absorption represents 40.7% of regional demand
- Even with declining market share, Midtown’s office demand will be 36 msf, **45 msf** or 54 msf through 2025
- Potential Midtown development sites are insufficient to meet future demand (current estimate of 20 msf)
- Hudson Yards is forecast to capture 35% to 40% of Midtown’s demand based upon recent Class A development activity
Hudson Yards  
Capture Rate of Midtown’s Office Demand  
Projected Total 2005 – 2025

<table>
<thead>
<tr>
<th>Capture Rate</th>
<th>Low</th>
<th>Base</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>40%</td>
<td>14.4</td>
<td>18.0</td>
<td>21.7</td>
</tr>
<tr>
<td>35%</td>
<td>12.6</td>
<td>15.8</td>
<td>19.0</td>
</tr>
</tbody>
</table>

Source: Cushman & Wakefield Analytics
Residential
Residential Development

- New York City is largest housing market in the nation
  - Manhattan comprises 727,000 occupied units
  - Manhattan is one of the nation’s tightest housing markets with an estimated vacancy rate of 3.2%

- Hudson Yards residential development
  - Natural extension of West Side residential neighborhoods
  - Complements Office expansion
  - Enhances 24 hour-7 day use
Manhattan Total Occupied Units
Rental Occupied Units vs. Vacancy Rate
1993, 1996, 1999

Manhattan Household Growth vs. Residential Construction 1987 – 2004

Source: Cushman & Wakefield Analytics, Economy.com, Corcoran Group, NYC Planning
Manhattan
Estimated Absorption of New Units
Historic 1986 – 2001*

* Applied average vacancy rate of 3.2 percent to number of total new residential units.

Source: Cushman & Wakefield Analytics, NYC Housing and Vacancy Survey
Large-Scale Housing Development on the West Side

Battery Park City
- 6,509 units completed between 1982 and 2001
- Average of 361 units per year - roughly one building
- An additional 2,931 units are planned

Trump’s Riverside South
- 1,919 units completed between 1997 and 2001
- Average of 384 units per year - roughly one building
- An additional 3,781 units are planned
Manhattan
Total New Units vs Hudson Yards Share
1998-2001

Source: Cushman & Wakefield Analytics, NYC Planning
Manhattan
Hudson Yards Share of Total Manhattan New Units
1998-2001

21,034 Total Units

Rest of Manhattan
89.6%

Hudson Yards
10.4%

Source: Cushman & Wakefield Analytics, NYC Planning
Manhattan Residential Market 2005 - 2025
Demand Forecast Assumptions

- Projected new households total 40,480 or 2,024 annually
- Replacement housing typically represents 0.5% of existing inventory (727,000 units), or 3,000 to 5,000 units annually
- Annual new demand ranges from 5,024 to 7,024 units
- Capture rate for Hudson Yards is based on recent strong absorption of 10.4%
Hudson Yards
Capture Rate of Manhattan’s Housing Demand
Projected 2005 – 2025

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Total Annual New Units</th>
<th>10.4% Share of Units</th>
<th>Total * Annual Square Feet</th>
<th>Total MSF (2005-2025)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>5,024</td>
<td>522</td>
<td>522,000</td>
<td>10.4</td>
</tr>
<tr>
<td>Base</td>
<td>6,024</td>
<td>626</td>
<td>626,000</td>
<td>12.5</td>
</tr>
<tr>
<td>High</td>
<td>7,024</td>
<td>730</td>
<td>730,000</td>
<td>14.6</td>
</tr>
</tbody>
</table>

* Average unit equals 1,000 square feet

Source: NYC Housing and Vacancy Survey, NYC Planning, Cushman & Wakefield Analytics
Hotel Development

- Important amenity to support commercial and convention center activity
- Provides for large convention type hotels proximate to Jacob Javits Convention Center
- Complements 24 hour-7day use of Hudson Yards
Hotel Market

- Comprises 56,000 hotel rooms in Manhattan
- Approximately 23,000 are convention style hotel rooms in Midtown
- Midtown is the prime hotel location in Manhattan
- New development in Hudson Yards will generate demand for hotels within the area
Hotel Room Demand

Hotel Room Demand and Segmentation

<table>
<thead>
<tr>
<th>Year 2025</th>
<th>Supportable Rooms</th>
<th>Year 2025</th>
<th>Segmentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hudson Yards Corporate</td>
<td>638</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>Other Midtown Corporate</td>
<td>643</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>Javits Convention Center</td>
<td>936</td>
<td>32%</td>
<td></td>
</tr>
<tr>
<td>Non-Javits Group</td>
<td>257</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Leisure</td>
<td>477</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2952</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Economics Research Associates

- Capture rate of Javits room demand and corporate demand from within Hudson Yards remains constant - with roomnights increasing as demand generators grow
- Capture of non-Javits group, leisure, and corporate demand from beyond Hudson Yards slowly increases over time
Hotel Room Demand
Projected Room Demand and Inventory
2005-2025

Source: Economics Research Associates
Retail
Retail Development

Retail is a key component to a vital urban neighborhood

- Provides extended use and activity both during the day, at night and on weekends
- Necessary to support Residential development, as well as Office and Hotel uses
Retail Market

- Retail exists on the West Side along key corridors like West 34th and West 42nd Streets
- New employees, residents and visitors will need convenient stores, restaurants and services
## Supportable Square Feet by Demand Source

<table>
<thead>
<tr>
<th>Demand Source</th>
<th>Supportable Square Feet</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office Workers</td>
<td>284,000</td>
<td>56%</td>
</tr>
<tr>
<td>Local Residents</td>
<td>116,000</td>
<td>23%</td>
</tr>
<tr>
<td>Hotel Guests</td>
<td>68,000</td>
<td>13%</td>
</tr>
<tr>
<td>Inflow/Visitors</td>
<td>40,000</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td>508,000</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Economics Research Associates
Hudson Yards
Supportable Retail Square Feet
Projected 2005-2025

Source: Economics Research associates
The Time Frame of the Market Forecast and the Revenue Projection

- Real estate development is highly cyclical
- Market forecasts reflect 20-year employment outlook
- Potential financing approaches likely to require a longer-term revenue projection of 30 - 40 years
- For this analysis, we have assumed continued demand growth at same pace from 2025 - 2035
Hudson Yards
Base Case Scenario Development Forecast

- Housing and Hotel development reaches the planning target--and is “built out”--earlier than other uses

<table>
<thead>
<tr>
<th>Property Type</th>
<th>2005 - 2025 Demand Forecast</th>
<th>2005 - 2035 Financial Forecast Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>18.0</td>
<td>Office</td>
</tr>
<tr>
<td>Residential</td>
<td>12.5</td>
<td>Residential</td>
</tr>
<tr>
<td>Hotel</td>
<td>1.0</td>
<td>Hotel</td>
</tr>
<tr>
<td>Retail</td>
<td>0.5</td>
<td>Retail</td>
</tr>
</tbody>
</table>

Source: Cushman & Wakefield Analytics, Economic Research Associates
Hudson Yards
Demand Forecast Summary

“Without taking action to create more space, New York City will miss out on hundreds of thousands of new jobs and increased economic activity in the next 20 years.”

- Group of 35, Preparing for the Future, 2001

- Hudson Yards Redevelopment area is the natural extension of Midtown
- The only large land area in Midtown that is underutilized
- Proven demand for office, housing, hotel and retail uses
- Public policy initiatives are necessary now to enable the long term growth of this strategic Manhattan location