

Potomac Yard Metrorail Station

Location Alternatives Analysis

*Potomac Yard Design Advisory Committee
April 21, 2009*

Reserved Location

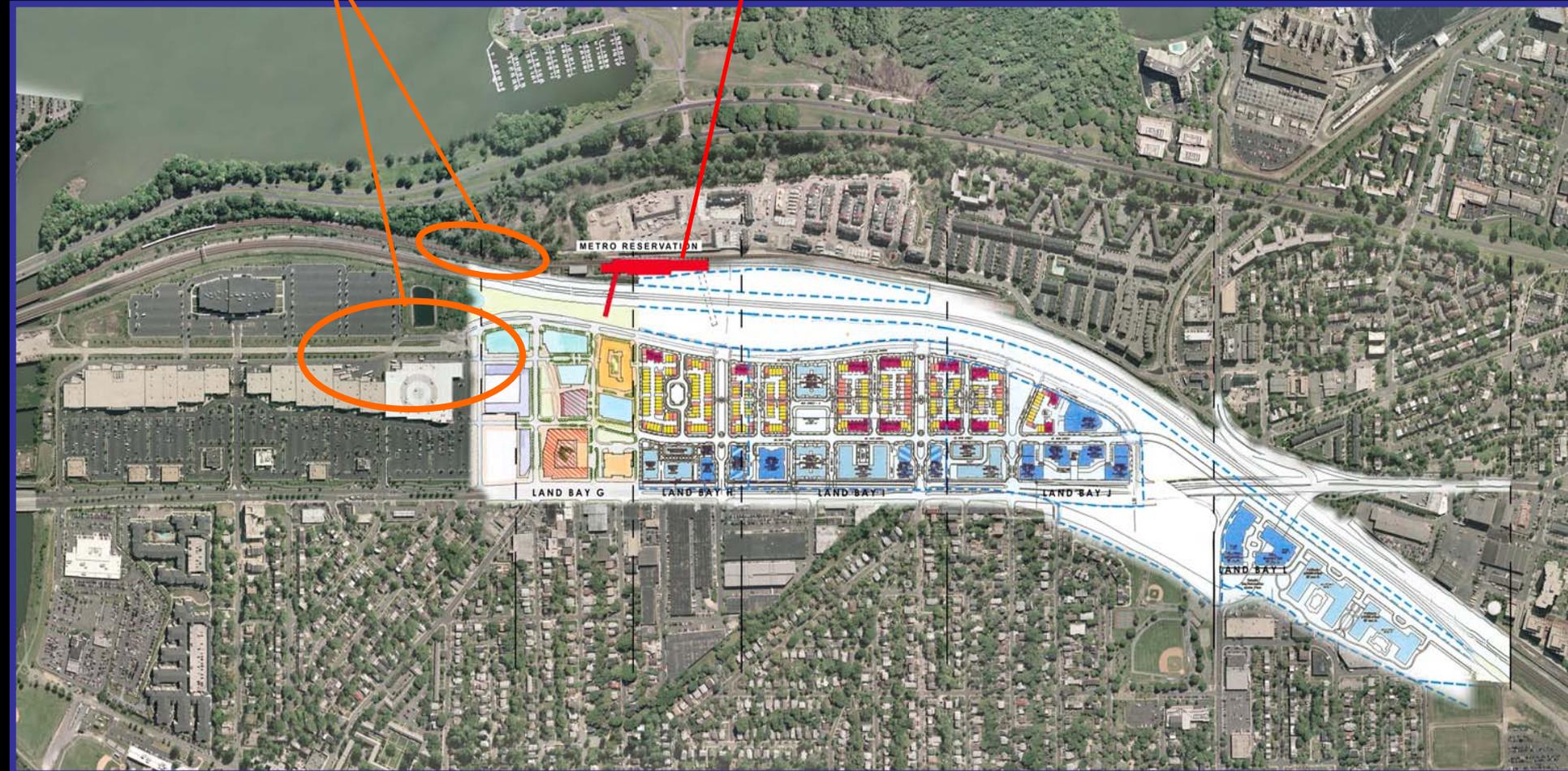
Potomac Yard Metrorail
Station Reservation



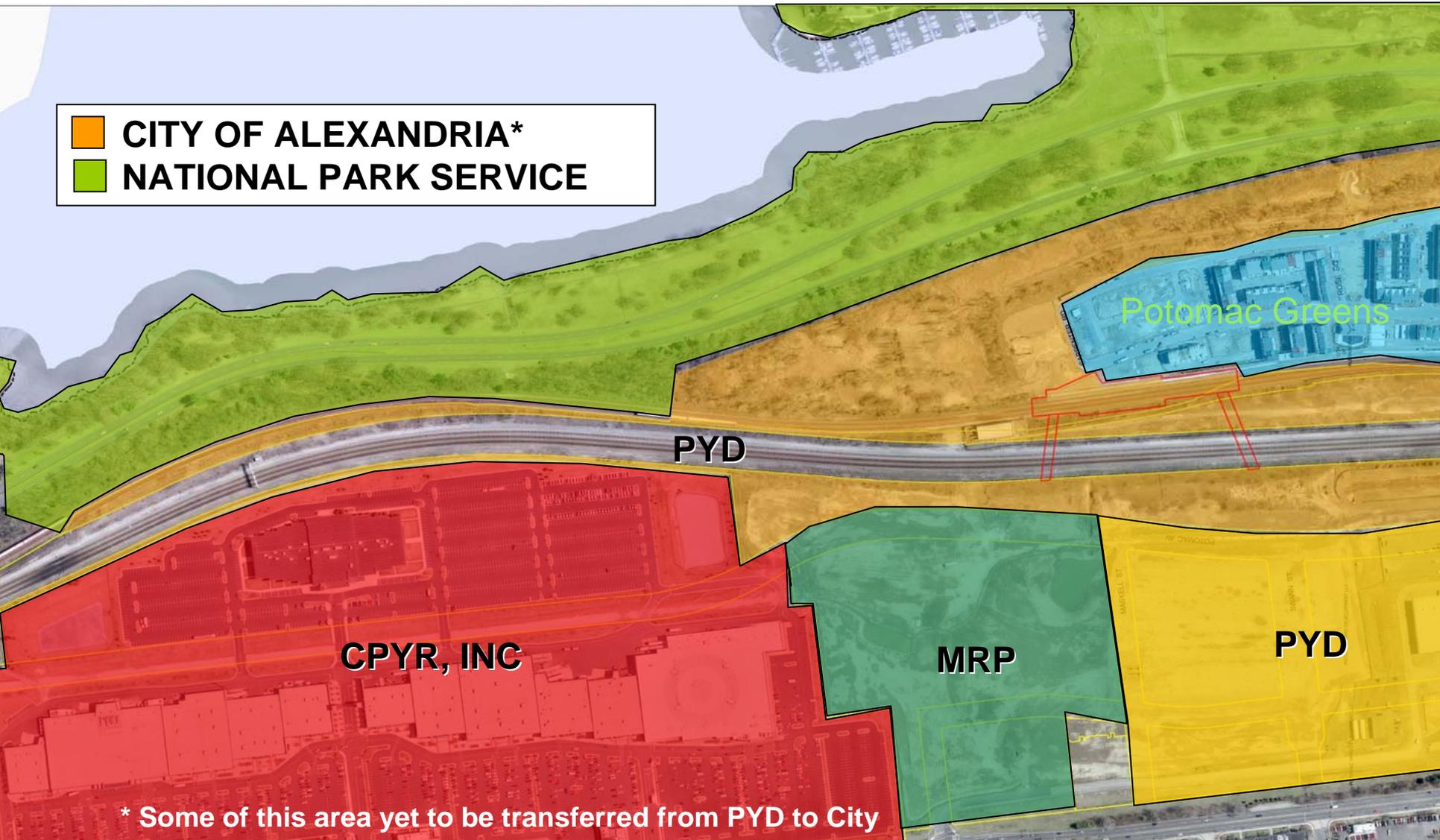
Alternative Locations

Alternative Locations

Reserved Location



Property Ownership



- CITY OF ALEXANDRIA*
- NATIONAL PARK SERVICE

Potomac Greens

PYD

CPYR, INC

MRP

PYD

* Some of this area yet to be transferred from PYD to City

Site Constraints



Wetlands



Potomac Greens

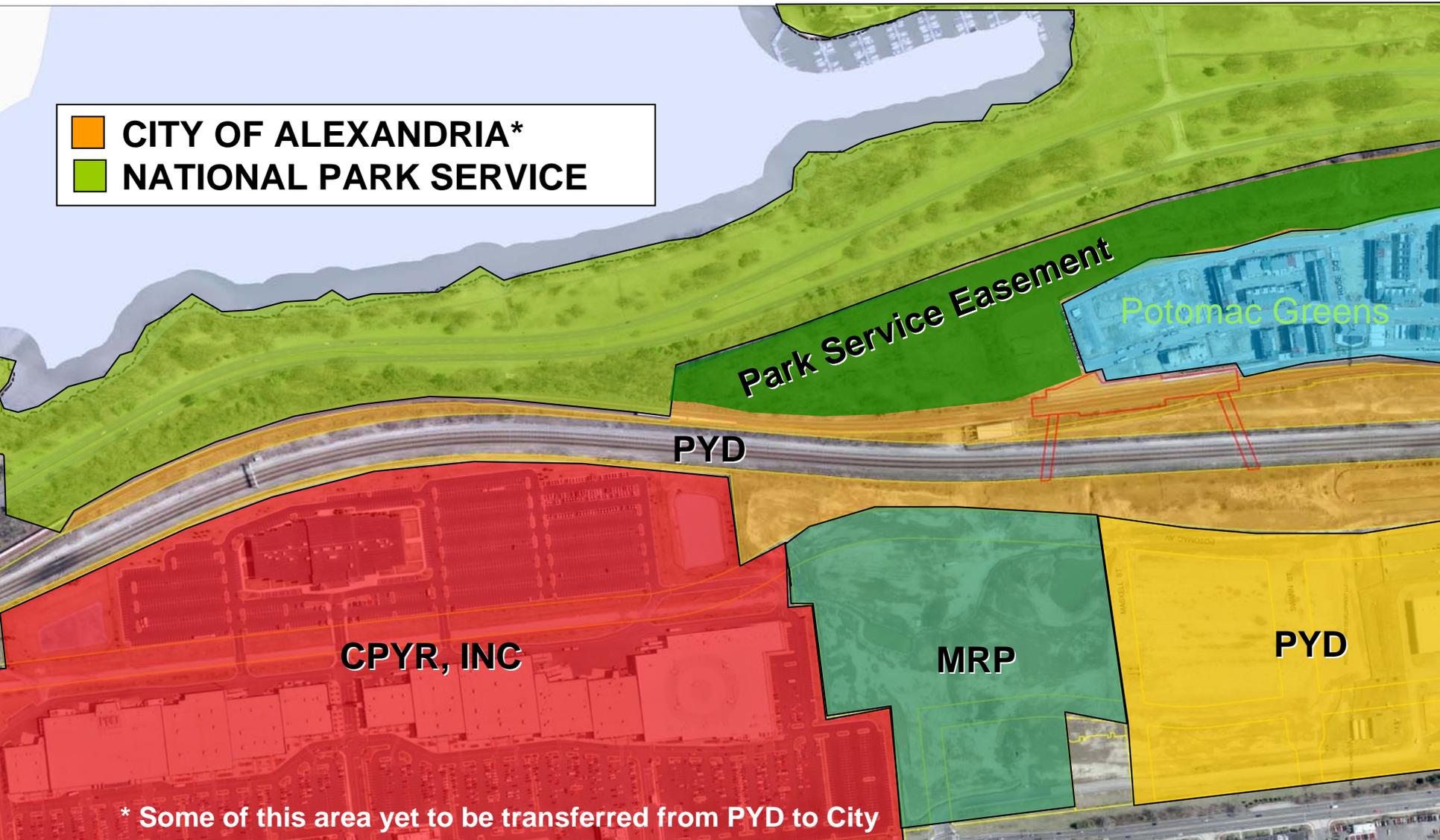


Park Service

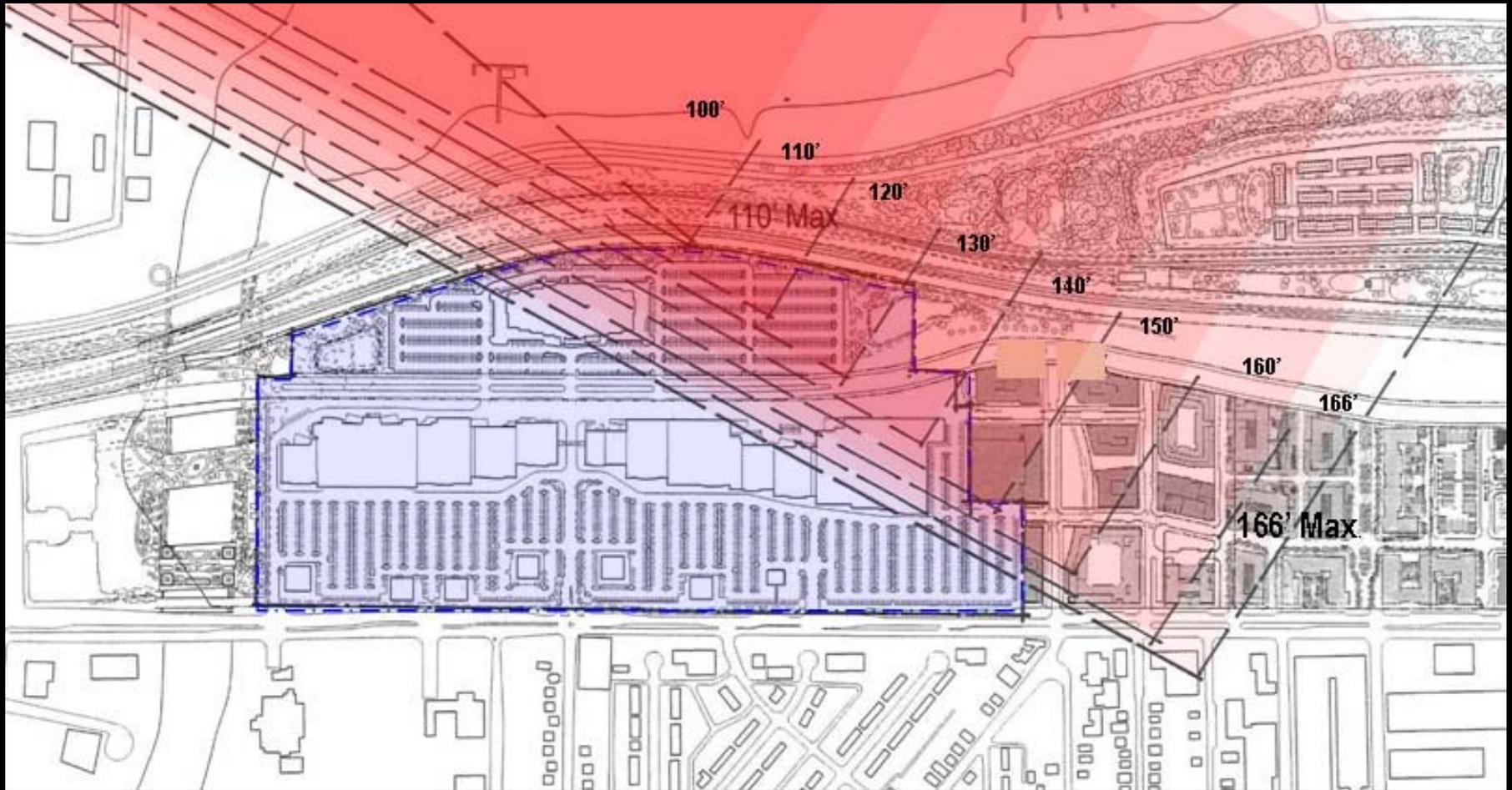


CSX Tracks

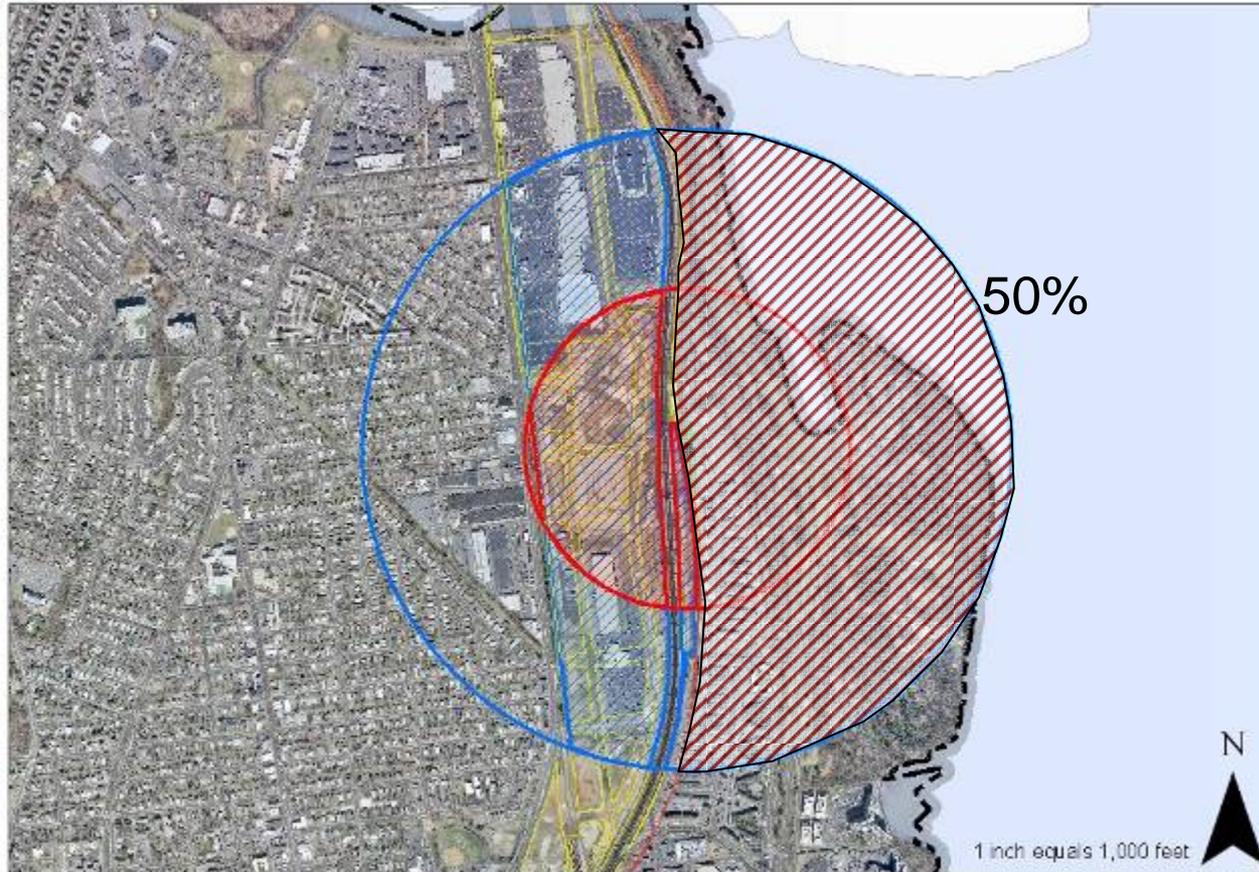
National Parks Service Easement



FAA Height Restrictions



Walkshed



Existing Metrorail Station Reservation

POTOMAC YARD - POTENTIAL METRO LOCATIONS

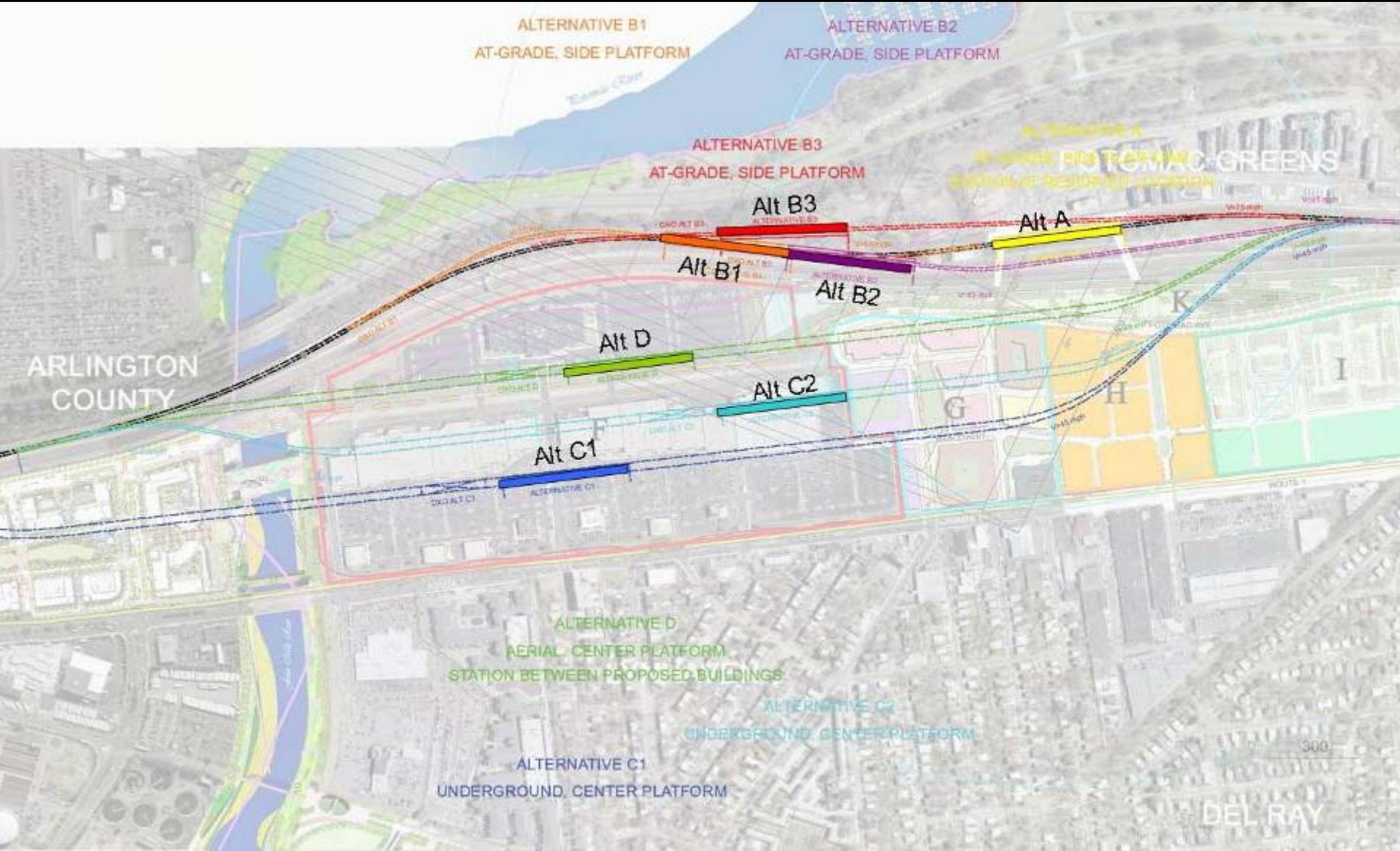


Approximately 50% of walkshed cannot be developed

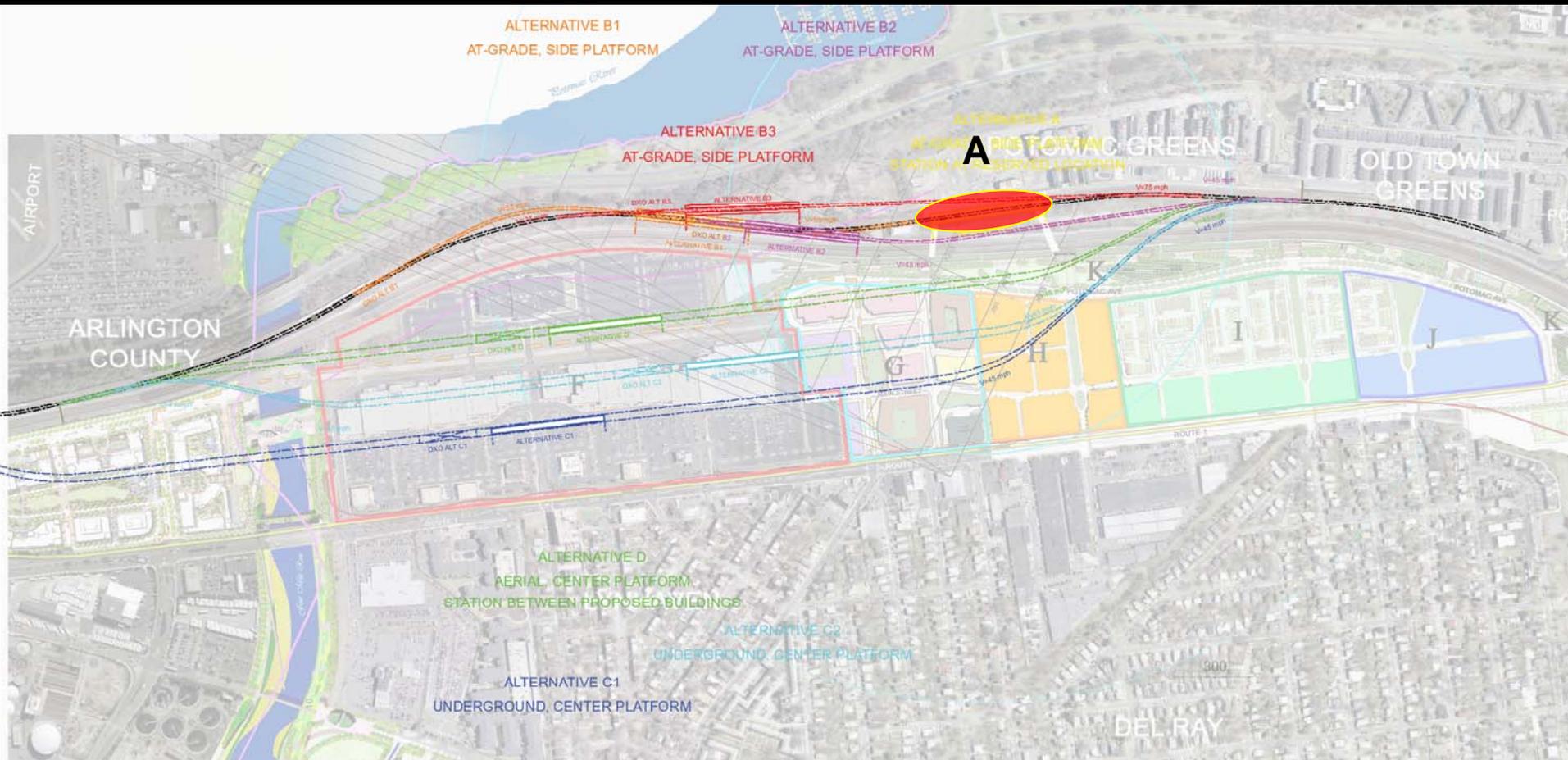
Station Design Requirements

- 600 foot long platform (8 car train length)
- 730 feet of level, straight track at the station
- Maximum grade is 4% (4 ft of rise for 100 ft of travel)
- Curved track to accommodate 45 mph train speed
- Redundant elevators for ADA accessibility
- Double cross-over ('x' shaped track) for operational flexibility
- Ancillary space for operational requirement

Station Location Alternatives



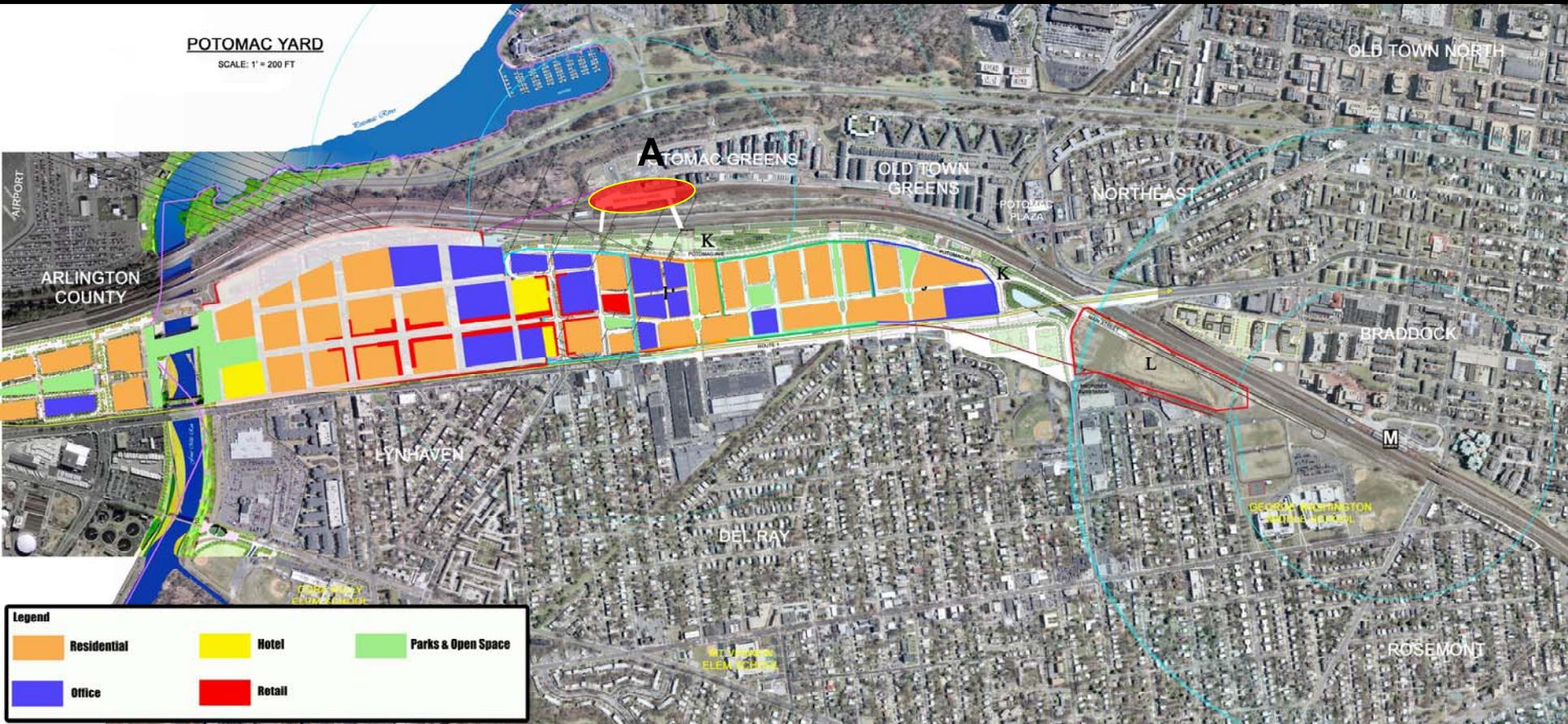
Alternative A (Reserved Site)



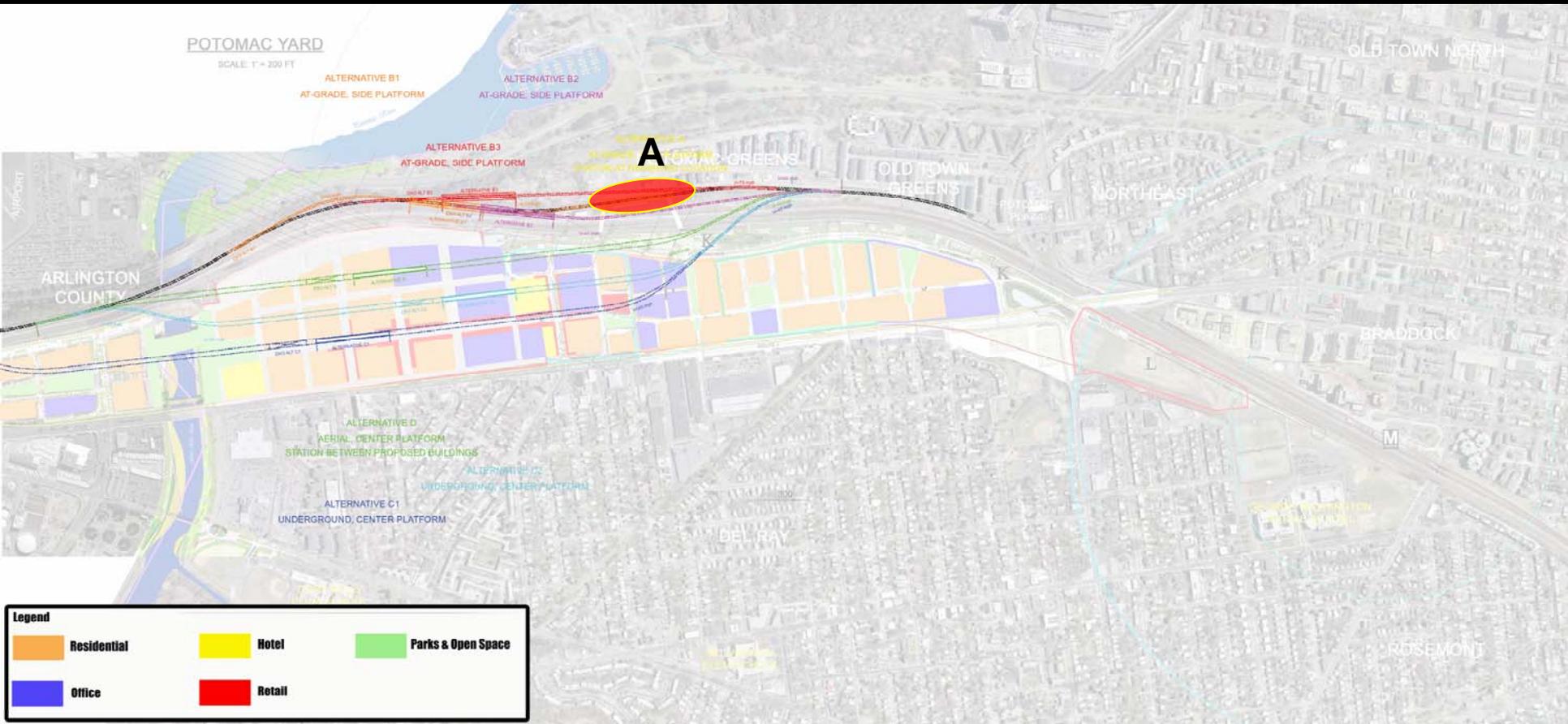
Alternative A

- Side-platform station
- 3.5 million sf of potential development within ¼ mile walkshed, 10.0 million within ½ mile
- Most accessible from east side, access from main market area via pedestrian bridge across CSX
- Requires the least modification of existing facilities
- In-line construction requiring extensive night work and impact to Potomac Greens residents
- Capital costs approximately \$140 to \$180 million

Alternative A (Reserved Site) Land Use Analysis



Alternative A (Reserved Site) Land Use Analysis

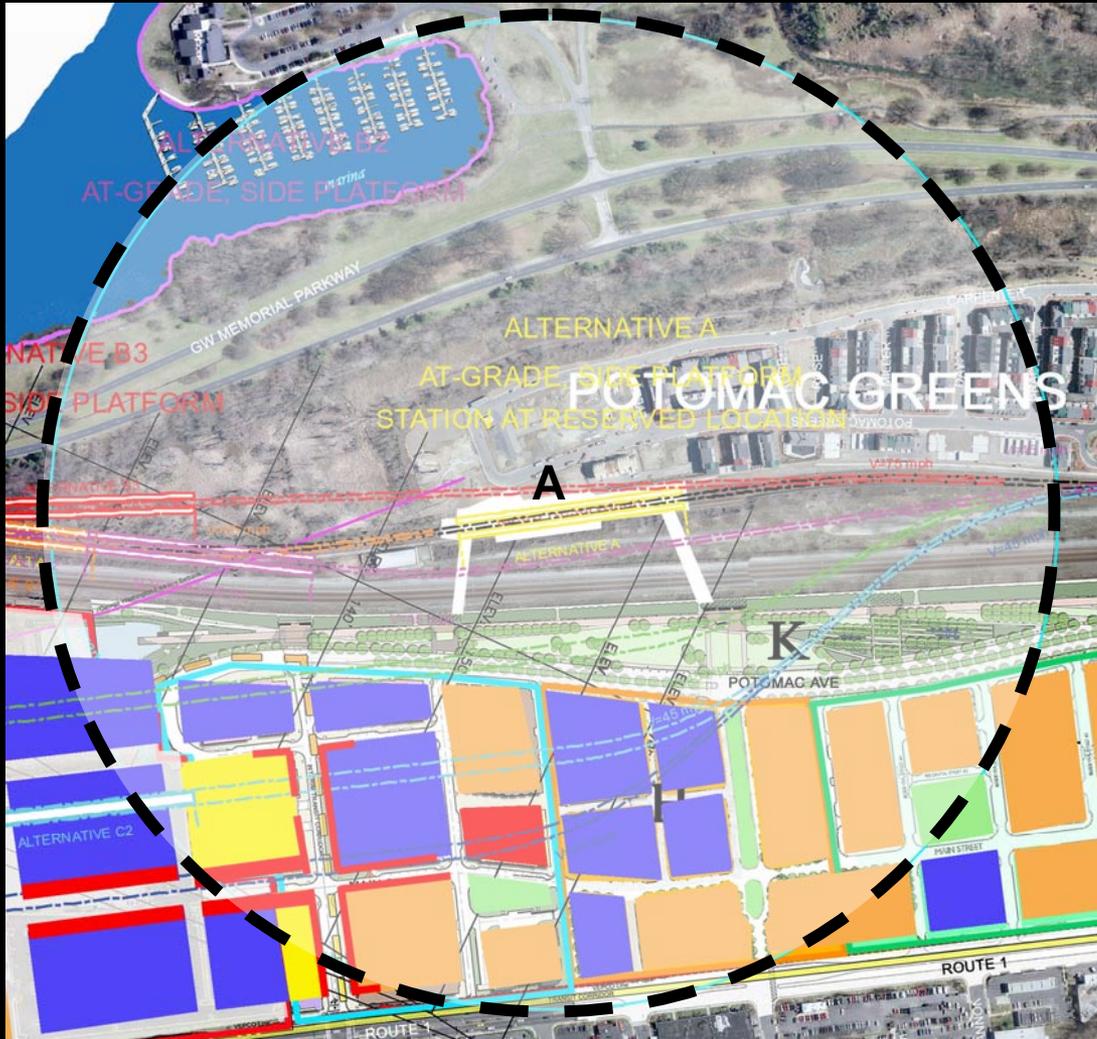


Alternative A (Reserved Site) Land Use Analysis



Total
Undevelopable Area = ~77%

Alternative A (Reserved Site) Land Use Analysis



1/4 Mile

Office: 49%

Residential: 34% (775 Units)

Other: 17%

Total: 3.5 Million Sq. Ft.

1/2 Mile (excludes 1/4 Mile)

Office: 23%

Residential: 66% (2953 Units)

Other: 11%

Total: 6.6 Million Sq. Ft.

Total

Office: 32%

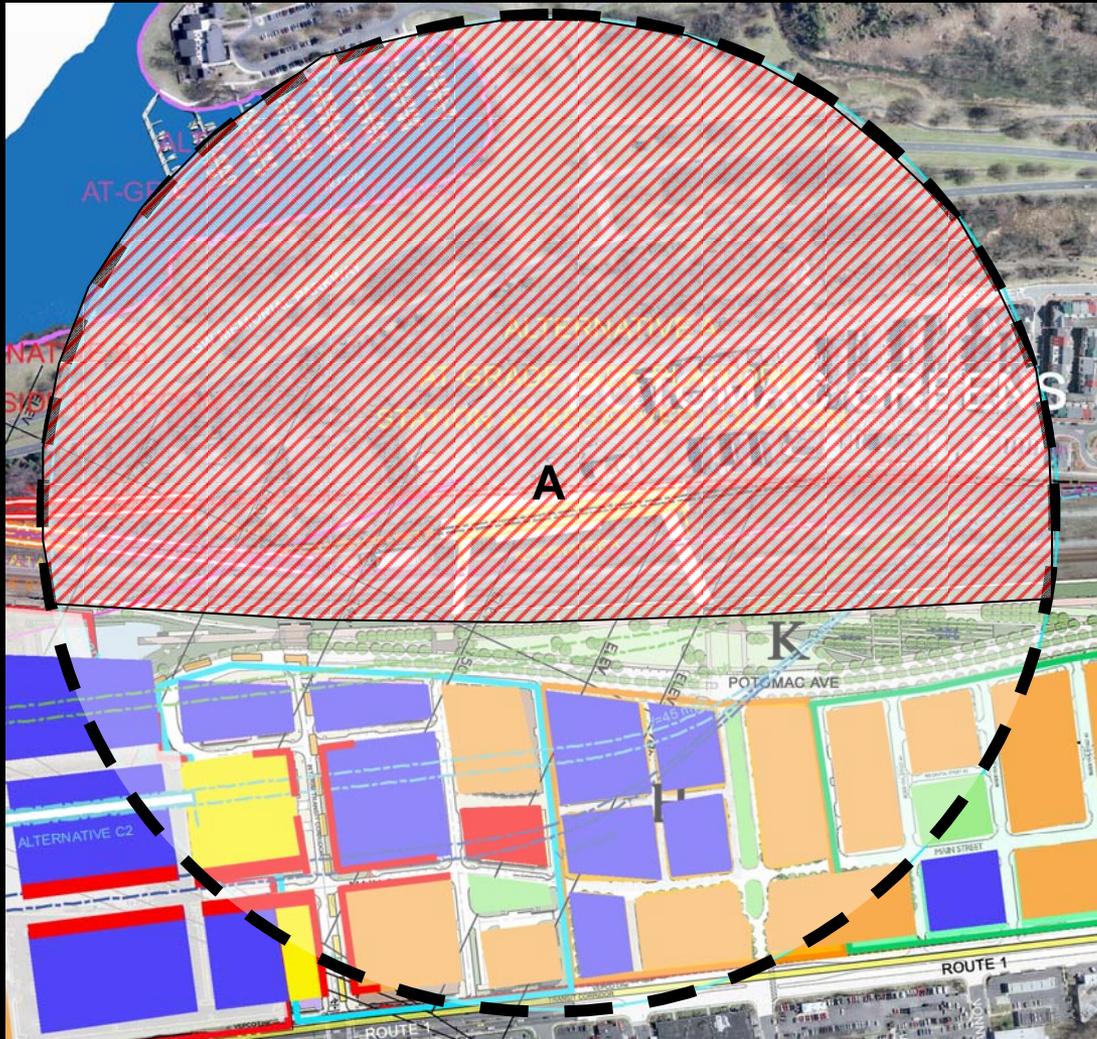
Residential: 55% (3728 Units)

Other: 13%

Total: 10.1 Million Sq. Ft.



Alternative A (Reserved Site) Land Use Analysis



¼ Mile

Office: 49%

Residential: 34% (775 Units)

Other: 17%

Total: 3.5 Million Sq. Ft.

½ Mile (excludes ¼ Mile)

Office: 23%

Residential: 66% (2953 Units)

Other: 11%

Total: 6.6 Million Sq. Ft.

Total

Office: 32%

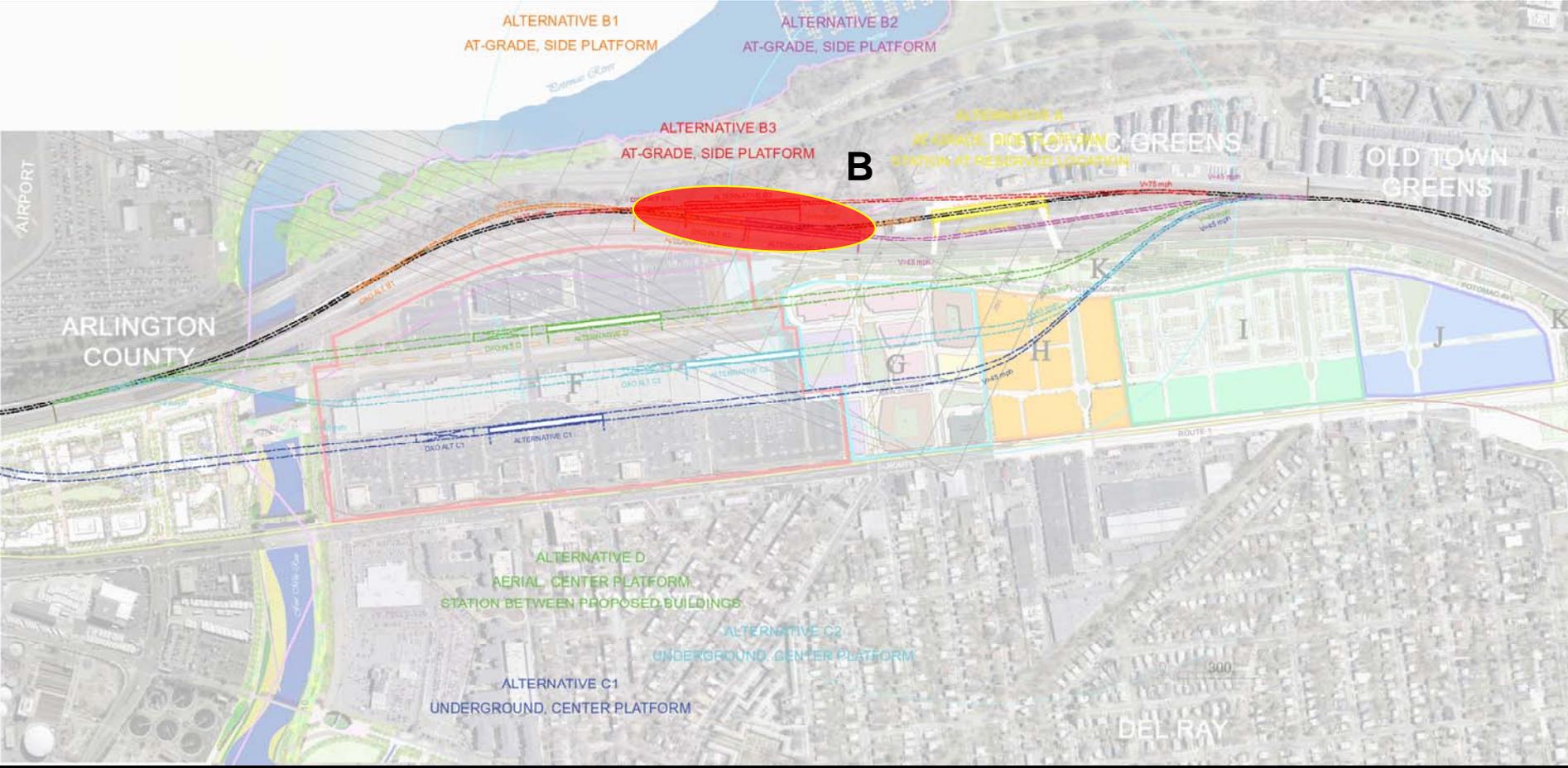
Residential: 55% (3728 Units)

Other: 13%

Total: 10.1 Million Sq. Ft.



Alternatives B1, B2 & B3 (northern sites)



Alternative B1

- Moves station 1600 feet north of Alternative A
- Side-platform station
- 5.5 million sf of potential development within ¼ mile walkshed, 14.0 million within ½ mile
- Less accessible from east side, access from main market area via pedestrian bridge across CSX
- Track realignment would require acquisition of right-of-way from National Park Service
- No longer being considered due to NPS impact

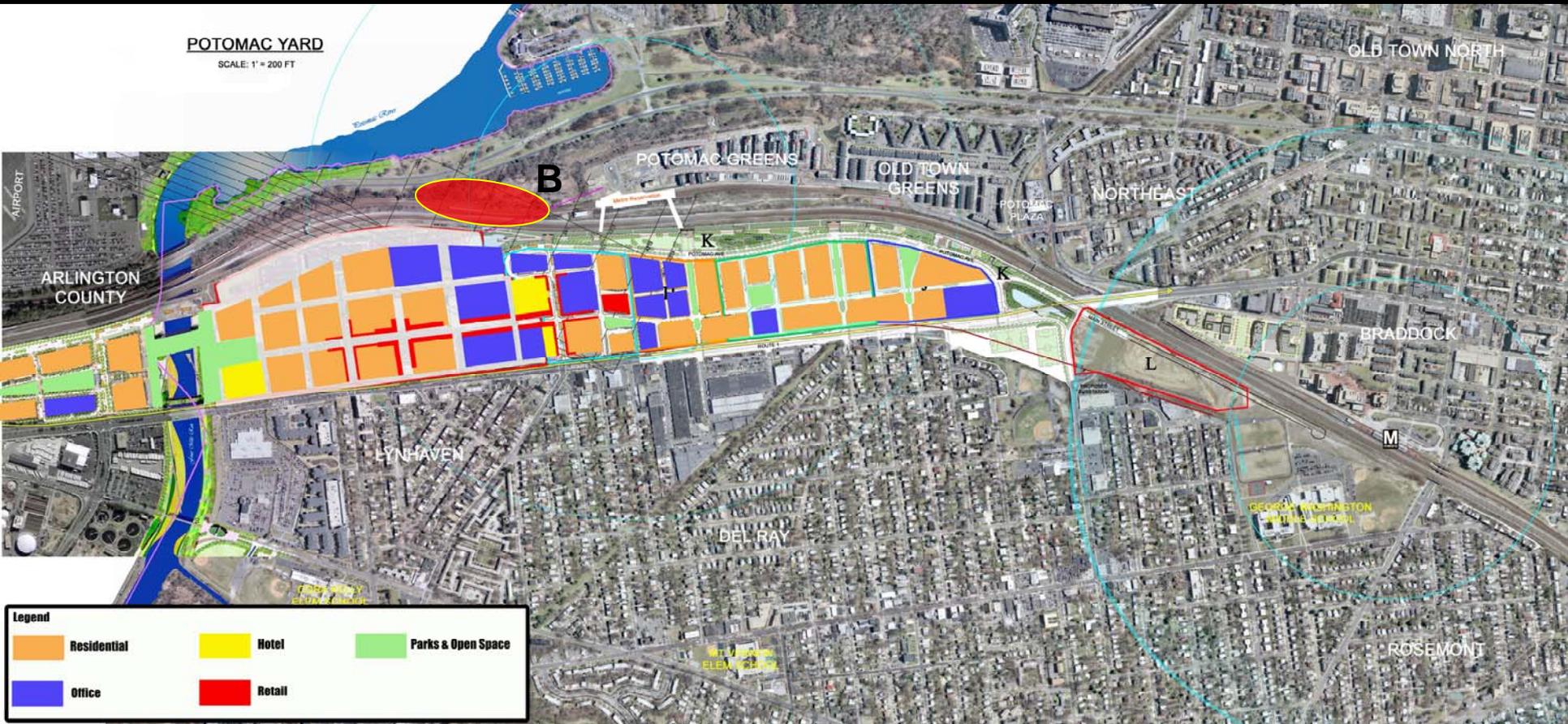
Alternative B2

- Moves station 950 feet north of Alternative A
- Side-platform station
- 5.5 million sf of potential development within ¼ mile walkshed, 14.0 million within ½ mile
- Less accessible from east side, access from main market area via pedestrian bridge across CSX
- No right-of-way required from National Park Service for track realignment
- Capital cost approximately \$150 to \$200 million

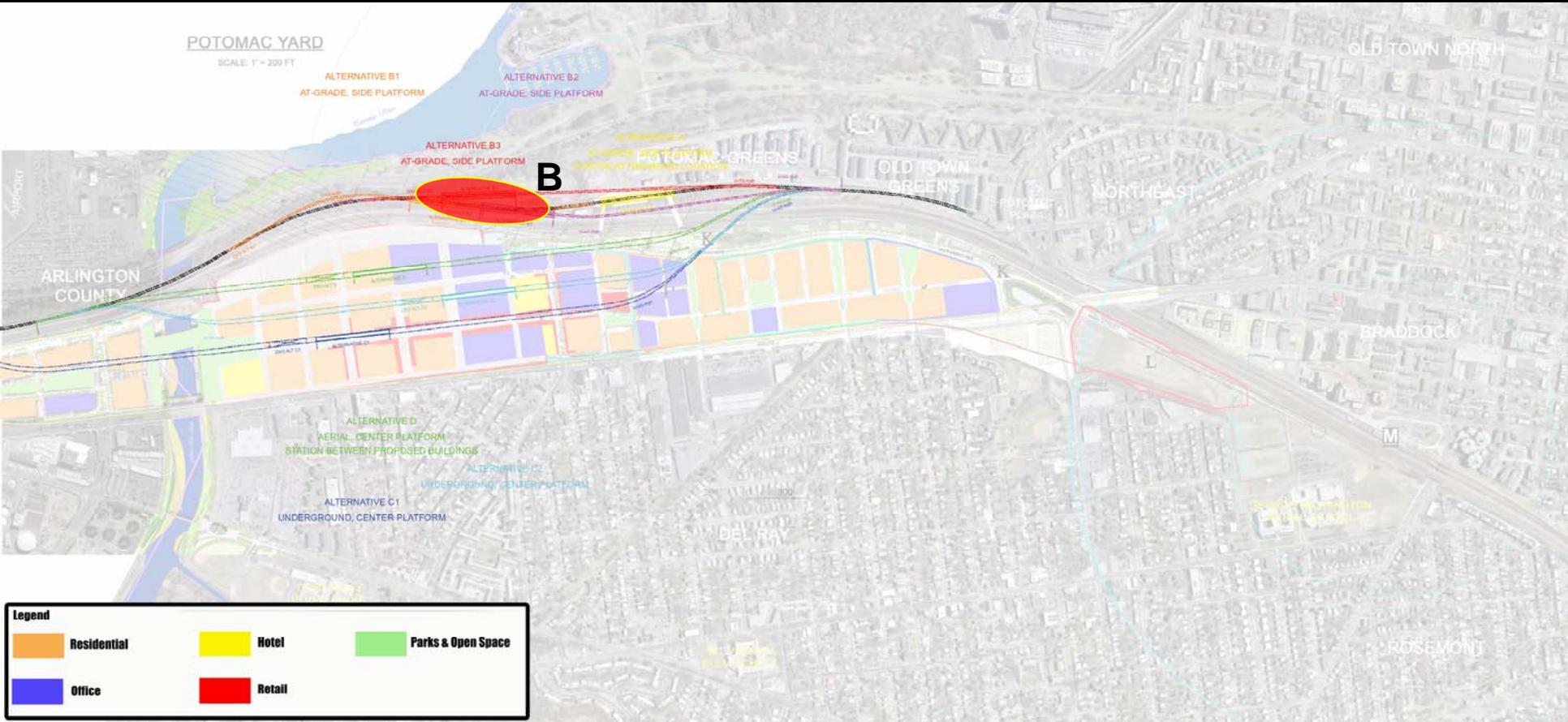
Alternative B3

- Moves station 1250 feet north of Alternative A
- Side-platform station
- 5.5 million sf of potential development within ¼ mile walkshed, 14.0 million within ½ mile
- Less accessible from the east side, access from main market area via pedestrian bridge across CSX
- Requires reconstruction of about 6,000 feet of track
- Off-line construction, more efficient construction and less impact to Potomac Greens residents
- Capital cost approximately \$140 to \$180 million

Alternatives B1, B2 & B3 (northern sites) Land Use Analysis



Alternatives B1, B2 & B3 (northern sites) Land Use Analysis

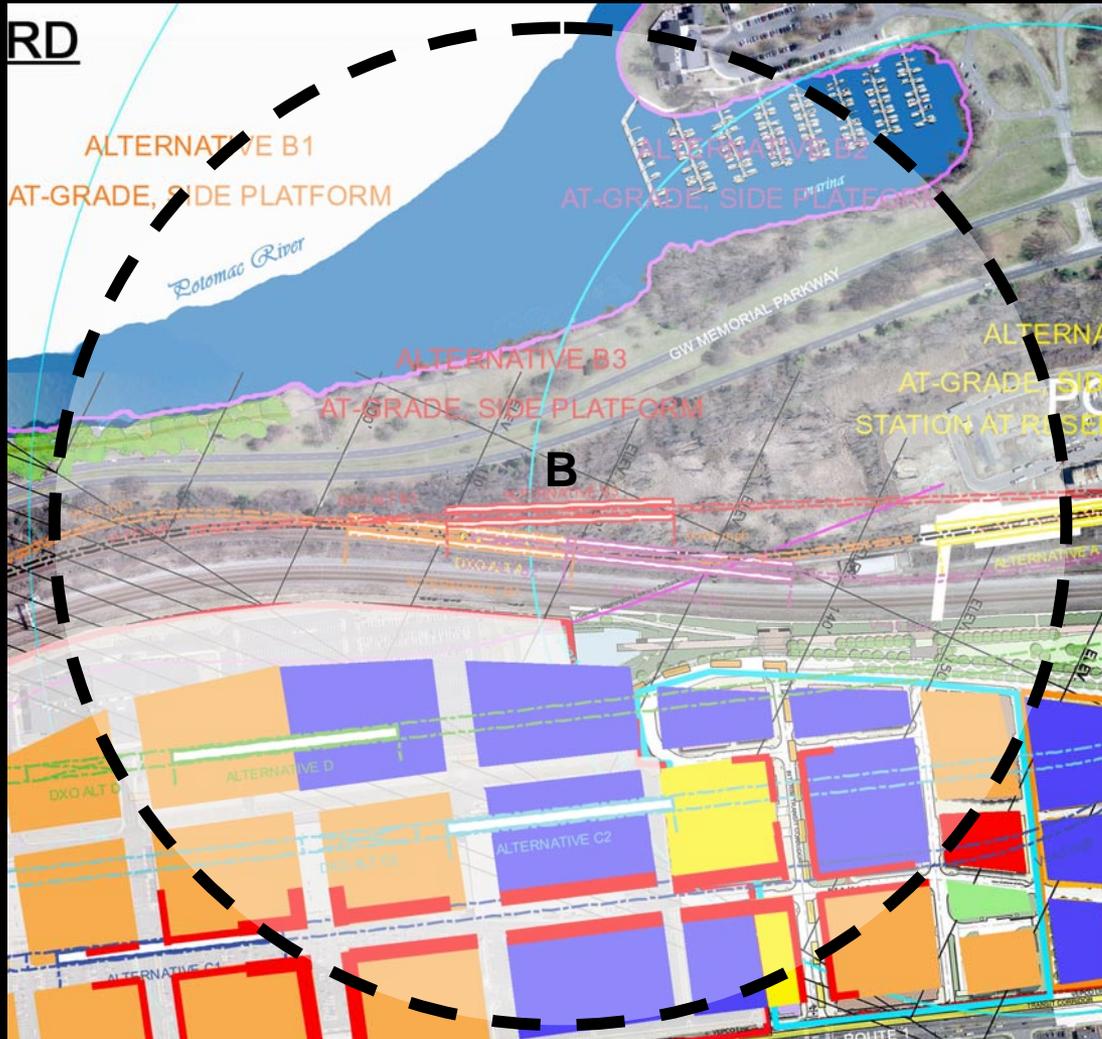


Alternatives B1, B2 & B3 (northern sites) Land Use Analysis



Total
Undevelopable Area = ~58%

Alternatives B1, B2 & B3 (northern sites) Land Use Analysis



1/4 Mile

Office: 43%
Residential: 37% (1376 Units)
Other: 20%
Total: 5.6 Million Sq. Ft.

1/2 Mile (excludes 1/4 Mile)

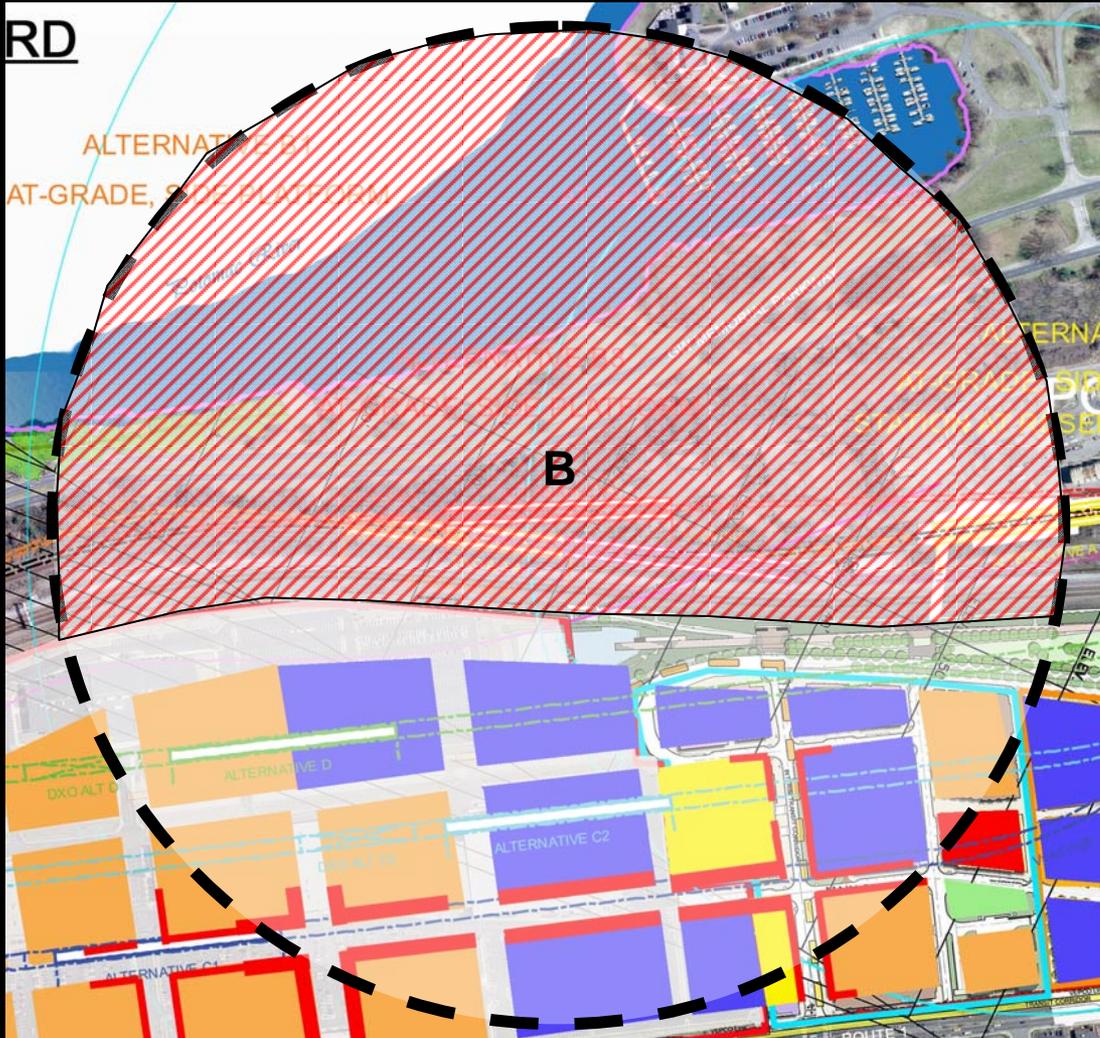
Office: 9.8%
Residential: 80.5% (4416 Units)
Other: 9.8%
Total: 8.2 Million Sq. Ft.

Total

Office: 23%
Residential: 63% (5792 Units)
Other: 14%
Total: 13.8 Million Sq. Ft.



Alternatives B1, B2 & B3 (northern sites) Land Use Analysis



1/4 Mile

Office: 43%
Residential: 37% (1376 Units)
Other: 20%
Total: 5.6 Million Sq. Ft.

1/2 Mile (excludes 1/4 Mile)

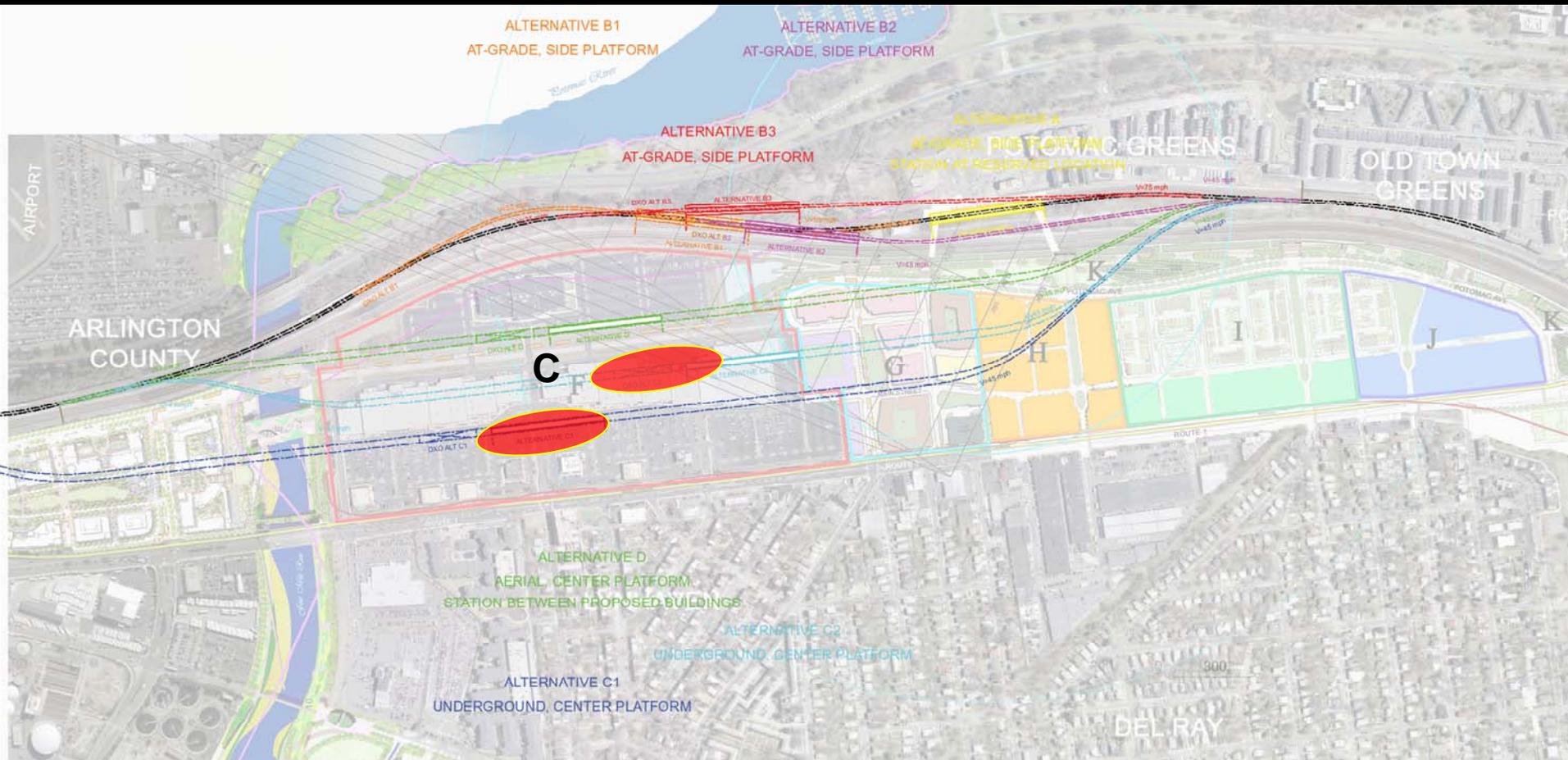
Office: 9.8%
Residential: 80.5% (4416 Units)
Other: 9.8%
Total: 8.2 Million Sq. Ft.

Total

Office: 23%
Residential: 63% (5792 Units)
Other: 14%
Total: 13.8 Million Sq. Ft.



Alternative C1, C2 (Landbay F Sites)



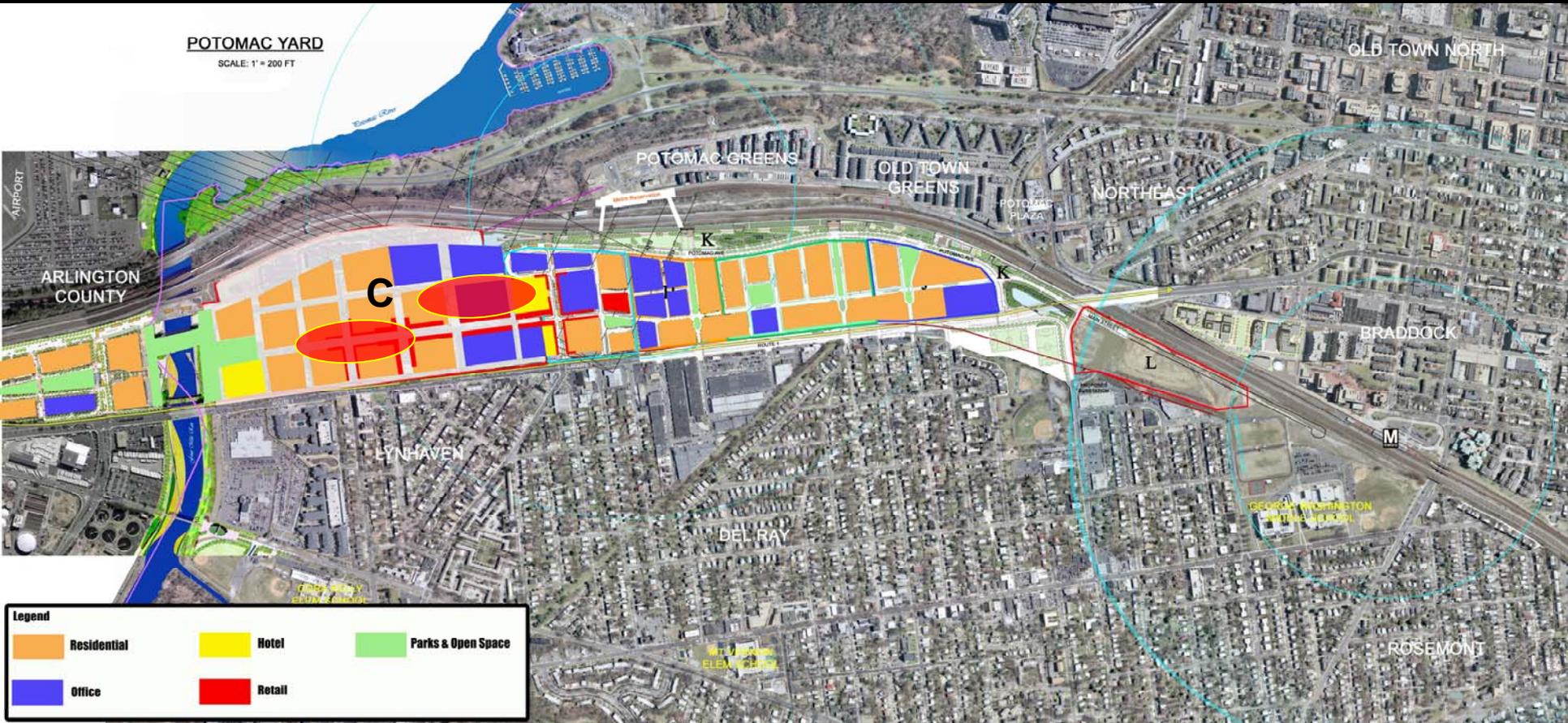
Alternative C1

- Tunnel & aerial alternatives
- Underground center-platform station
- 10.0 million sf of potential development within ¼ mile walkshed, 14.5 million within ½ mile
- Least accessible from the east side due to distance and need to access via pedestrian bridge across CSX
- Requires construction of about 17,000 feet of track
- Aerial segment north of Four Mile Run severely impacts existing development
- **No longer being considered due to impact to existing development**

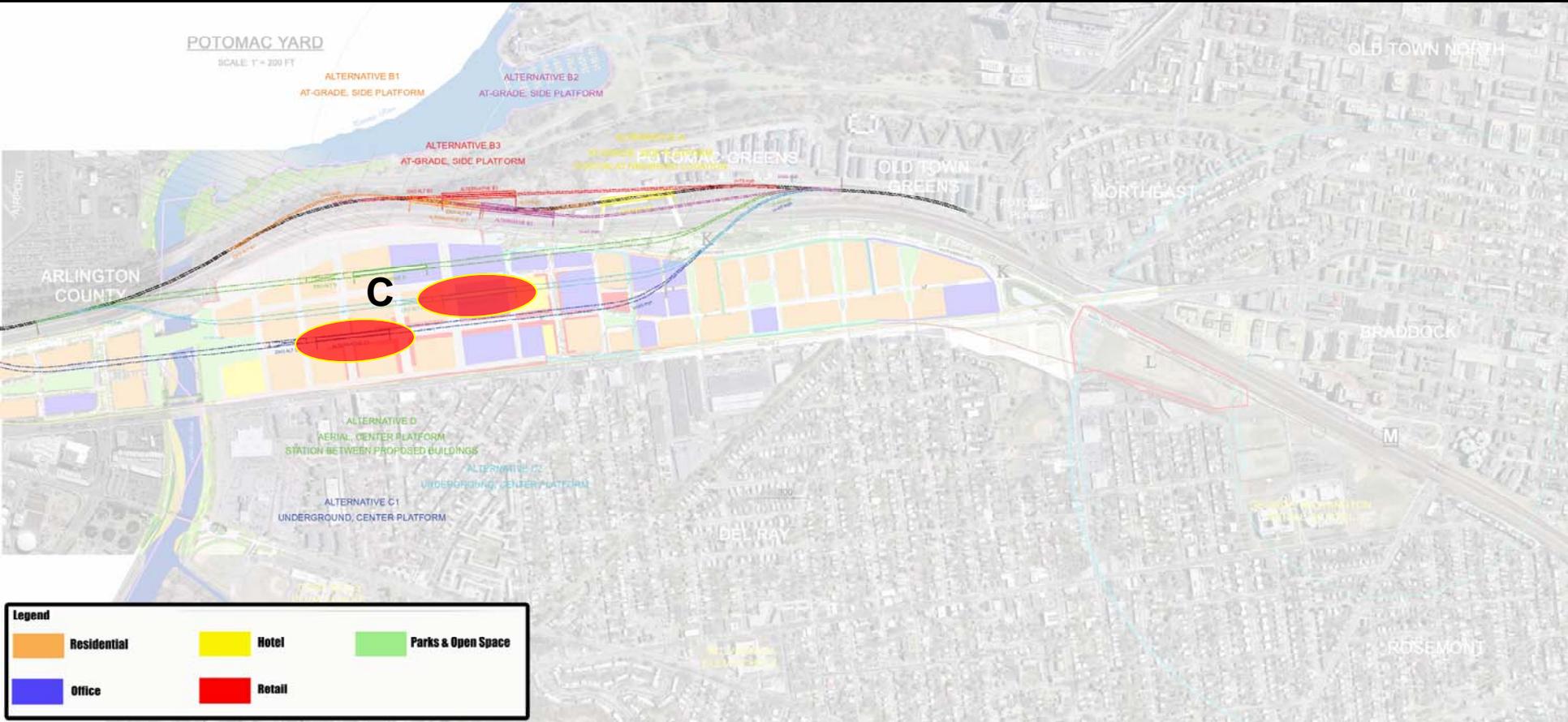
Alternative C2

- Tunnel & aerial Alternative
- Underground center-platform station
- 10.0 million sf of potential development within ¼ mile walkshed, 14.5 million within ½ mile
- Least accessible from the east side due to distance and need to access via pedestrian bridge across CSX
- Requires construction of about 9,000 feet of track
- Aerial segment south of the new station negatively impacts Landbays G & H
- Capital costs approximately \$410 to \$520 million.

Alternatives C1, & C2 (Landbay F Sites) Land Use Analysis



Alternatives C1, & C2 (Landbay F Sites) Land Use Analysis

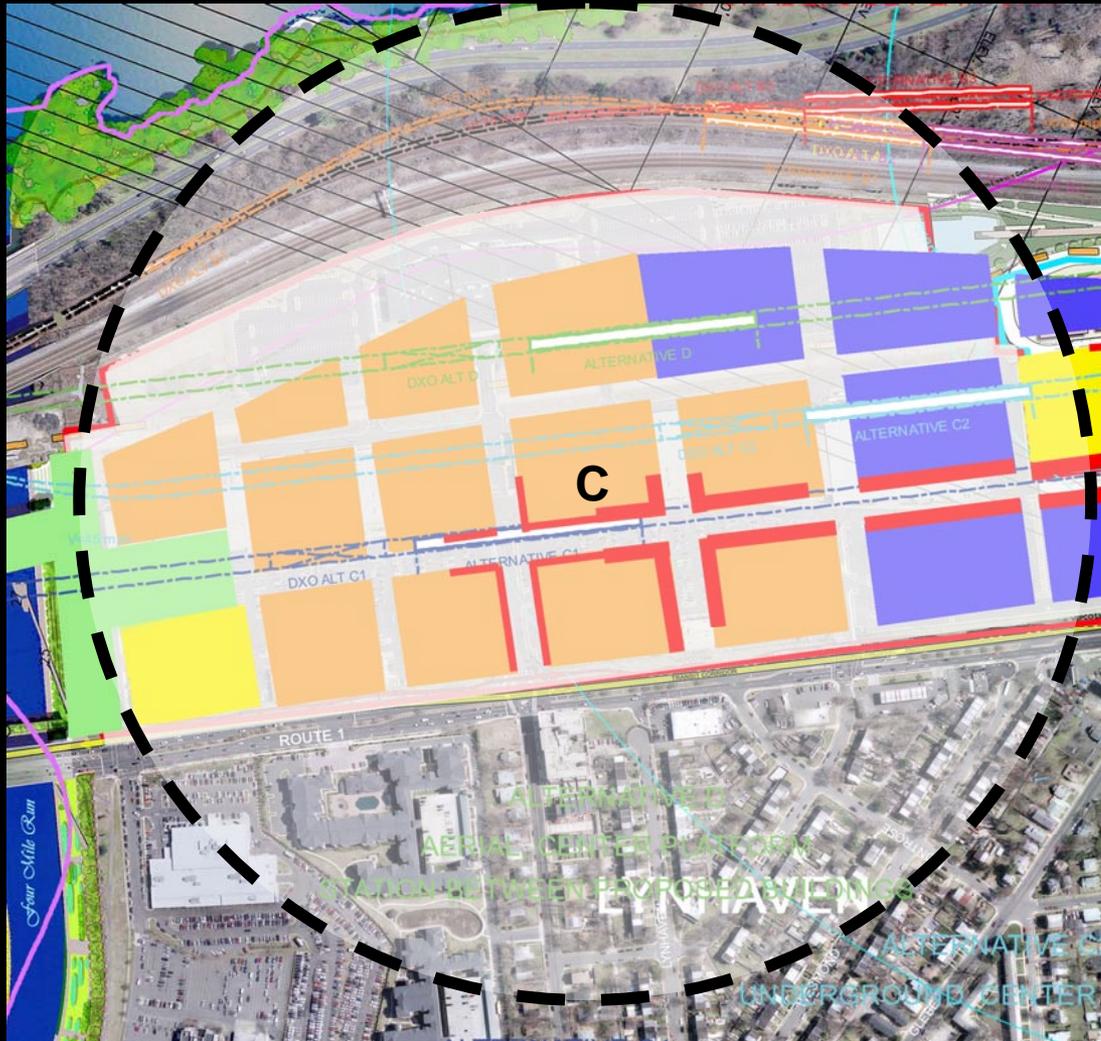


Alternative C1 & C2 (Landbay F Sites) Land Use Analysis



Total
Undevelopable Area = ~80%

Alternative C1 & C2 (Landbay F Sites) Land Use Analysis



1/4 Mile

Office: 15%
Residential: 70% (4750 Units)
Other: 15%
Total: 10.1 Million Sq. Ft.

1/2 Mile (excludes 1/4 Mile)

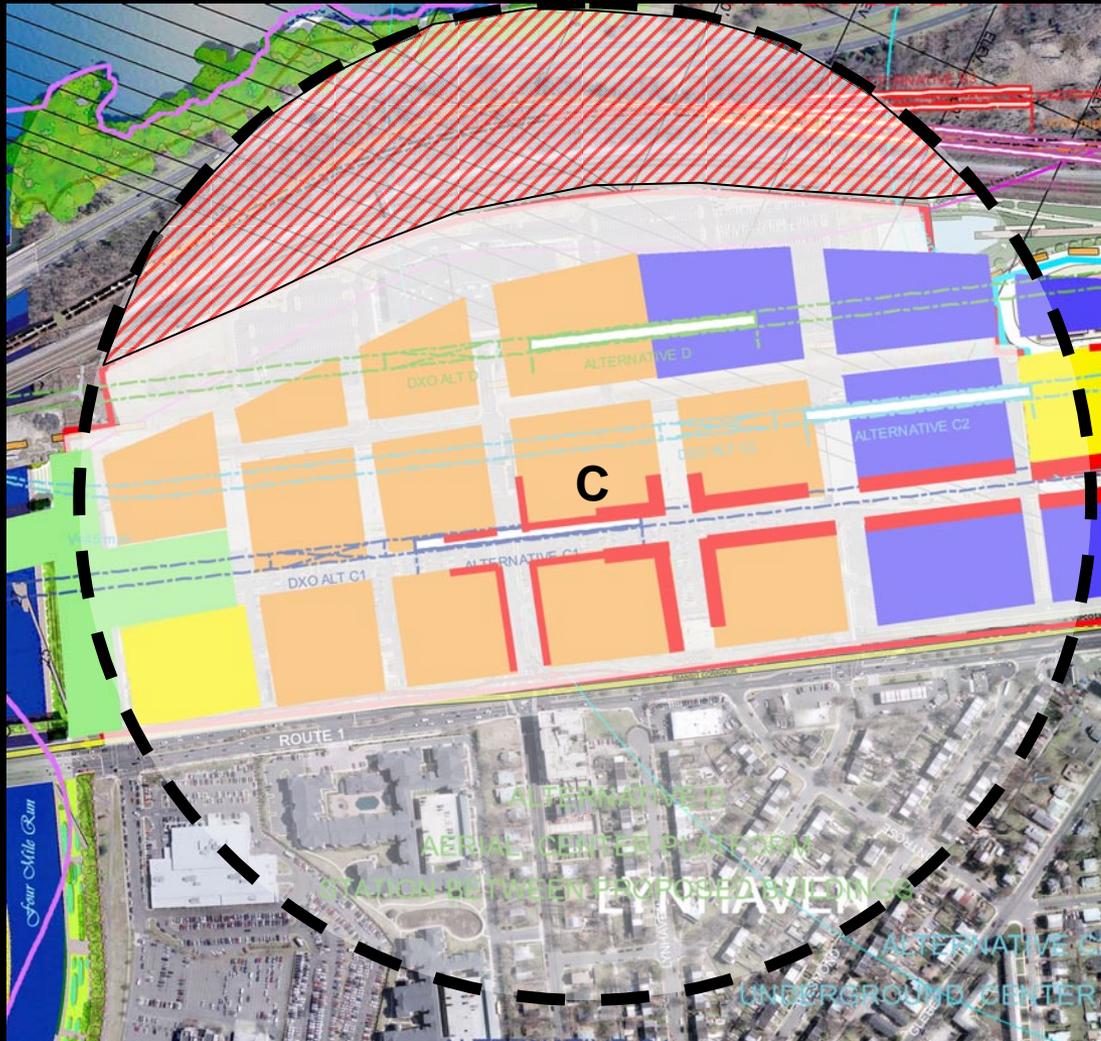
Office: 44%
Residential: 40% (1393 Units)
Other: 16%
Total: 4.3 Million Sq. Ft.

Total

Office: 24%
Residential: 61% (6143 Units)
Other: 15%
Total: 14.4 Million Sq. Ft.



Alternative C1 & C2 (Landbay F Sites) Land Use Analysis



1/4 Mile

Office: 15%
Residential: 70% (4750 Units)
Other: 15%
Total: 10.1 Million Sq. Ft.

1/2 Mile (excludes 1/4 Mile)

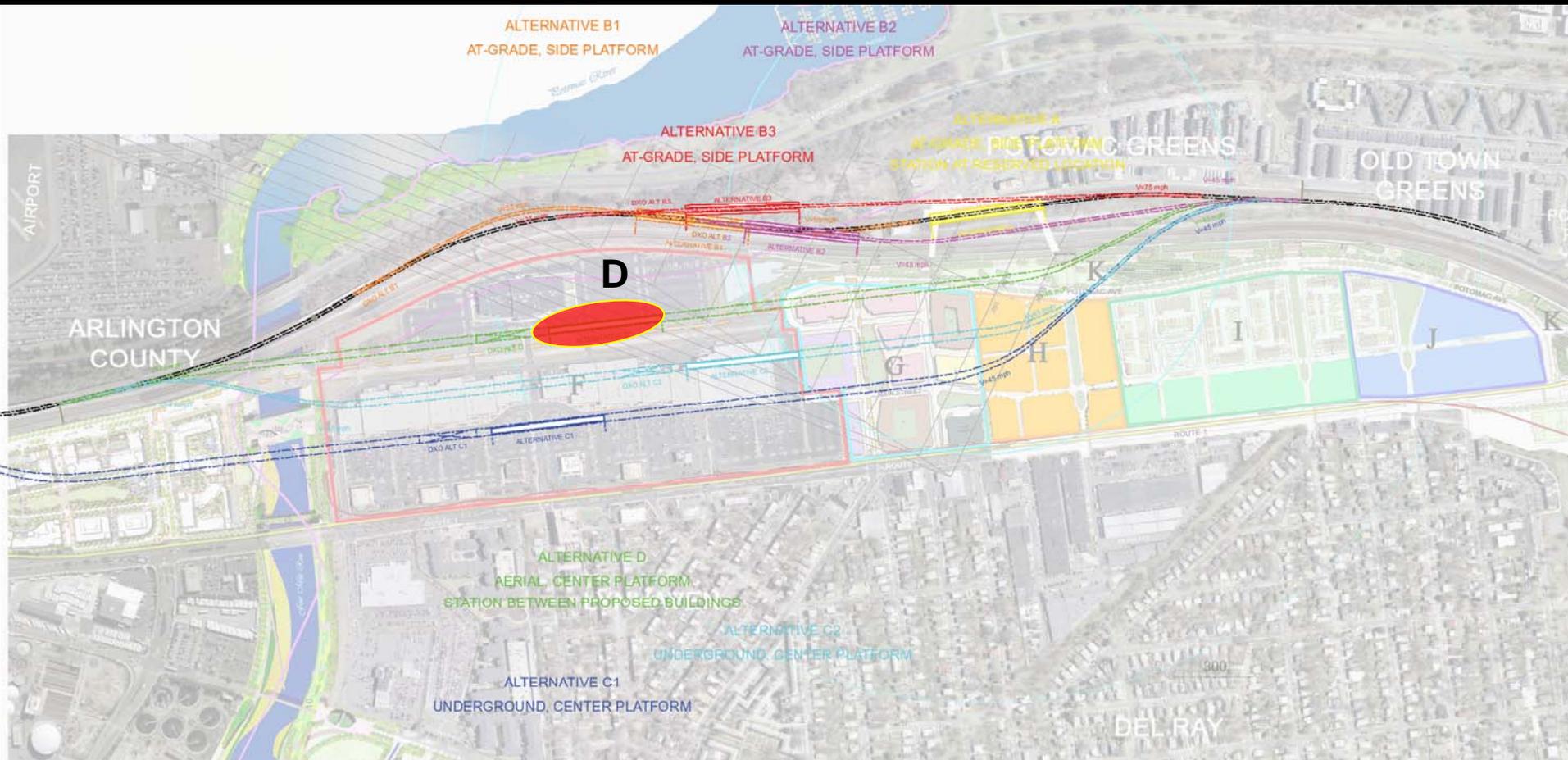
Office: 44%
Residential: 40% (1393 Units)
Other: 16%
Total: 4.3 Million Sq. Ft.

Total

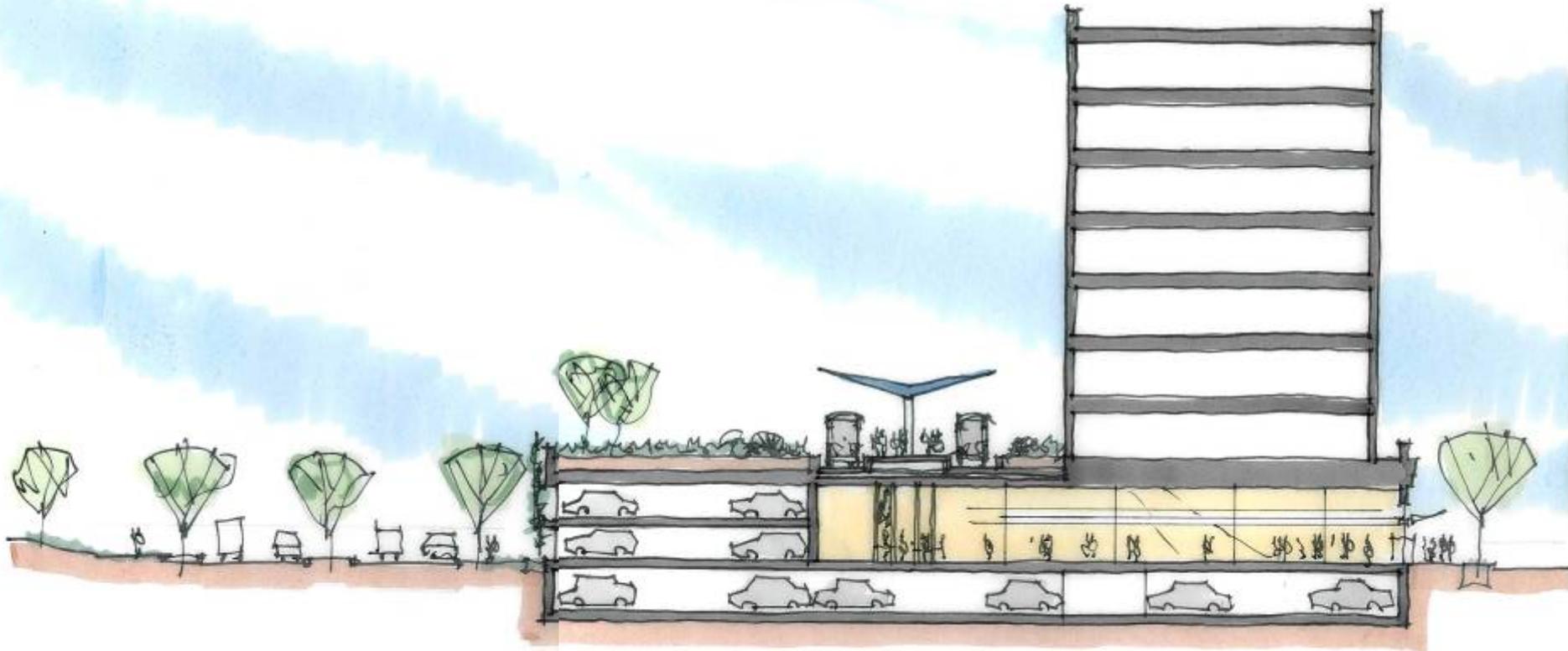
Office: 24%
Residential: 61% (6143 Units)
Other: 15%
Total: 14.4 Million Sq. Ft.



Alternative D (Aerial Option)



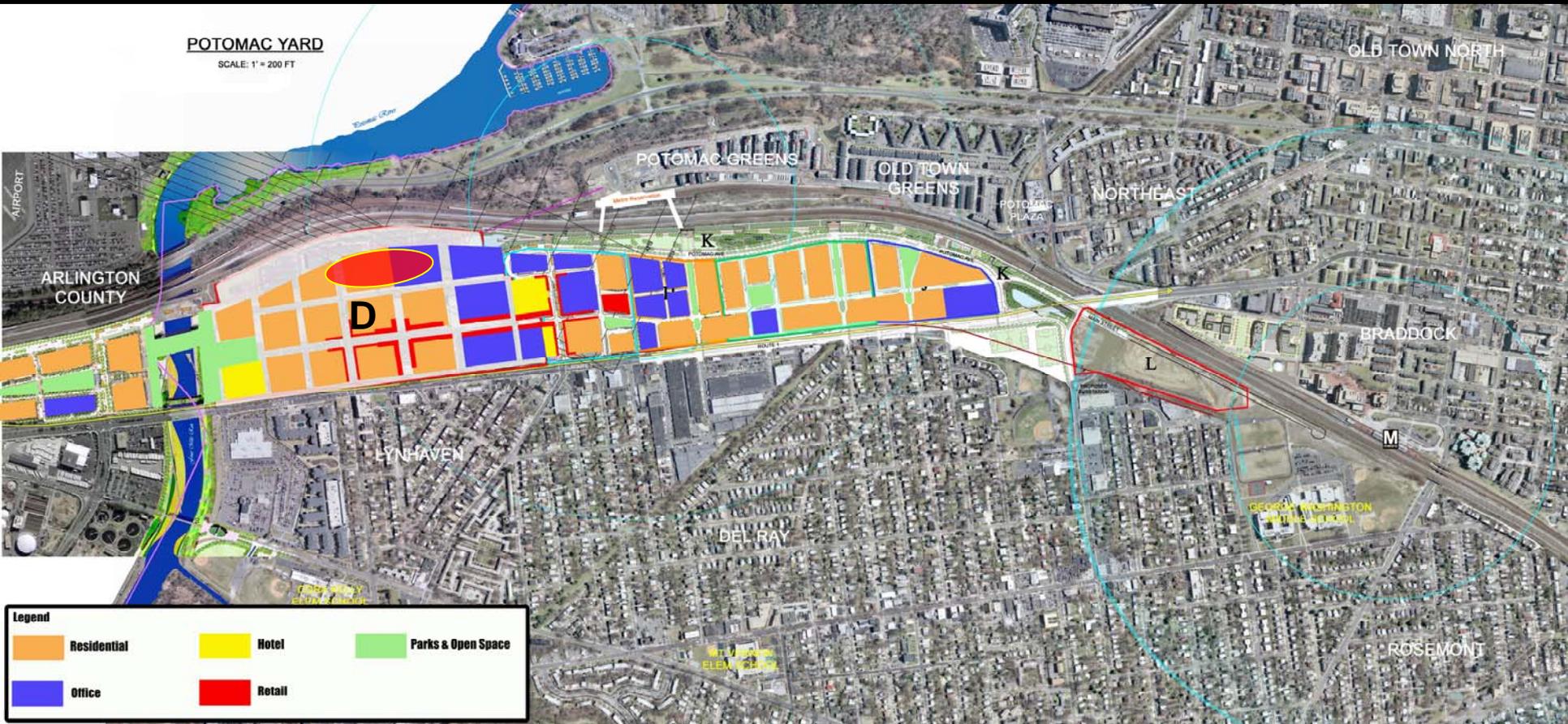
Aerial Option



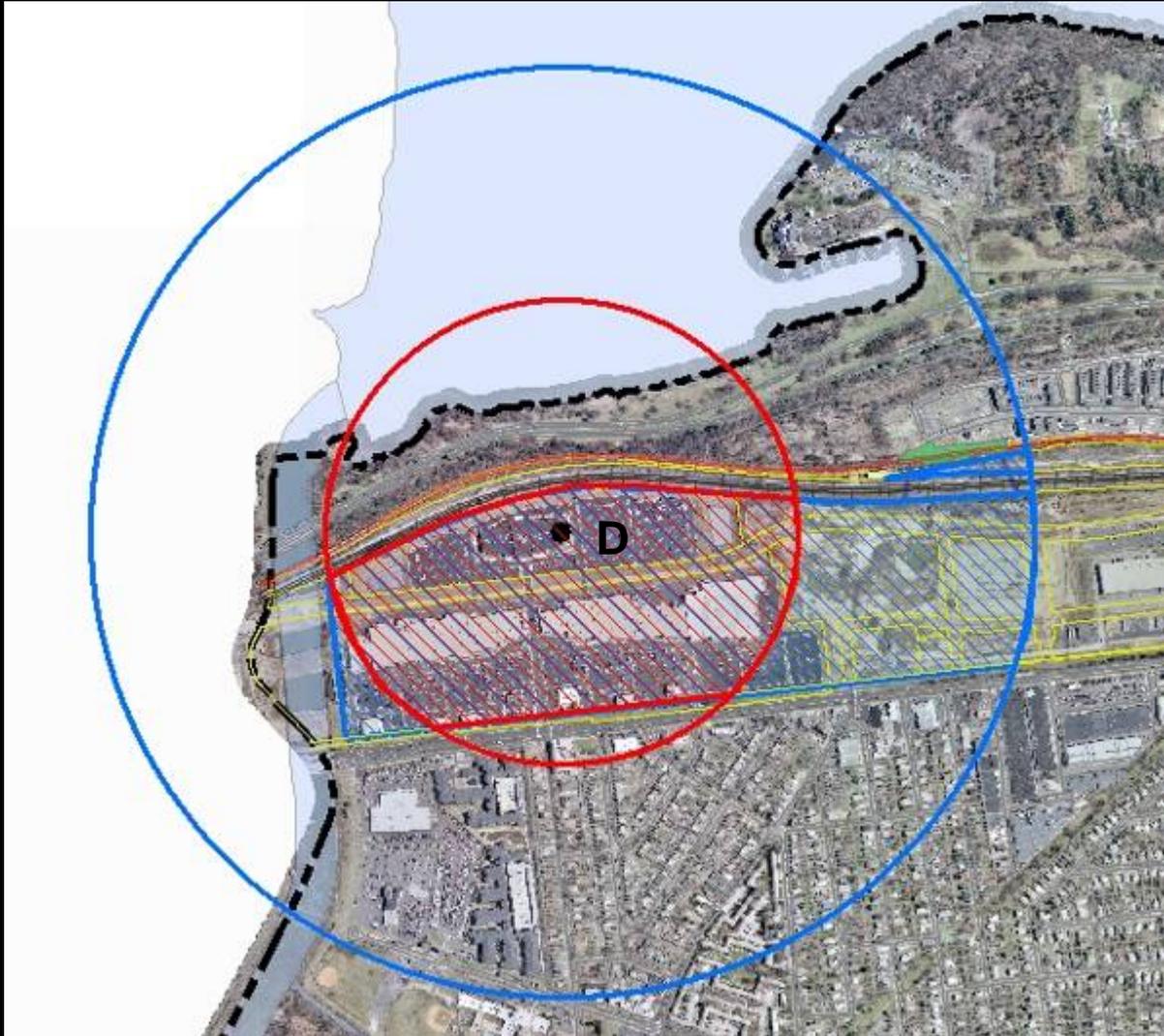
Alternative D

- Aerial Alternative
- Aboveground center-platform station
- 10.0 million sf of potential development within ¼ mile walkshed, 14.5 million within ½ mile
- Least accessible from the east side due to distance and need to access via pedestrian bridge across CSX
- Requires construction of about 8,000 feet of track
- Aerial segment south of the new station negatively impacts Landbays G & H
- Capital costs approximately \$230 to \$300 million.

Alternative D (Aerial Option) Land Use Analysis

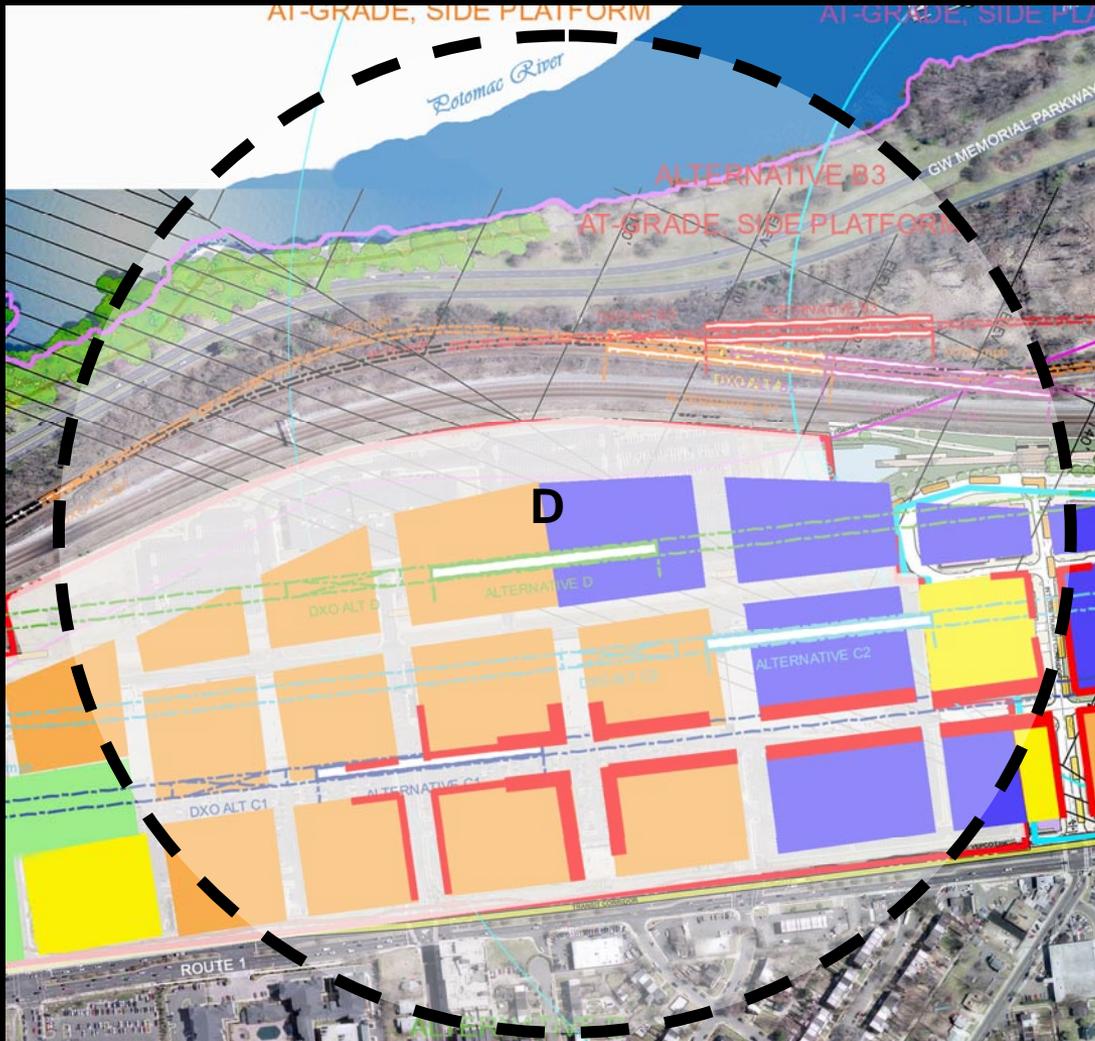


Alternative D (Aerial Option) Land Use Analysis



Total
Undevelopable Area = ~80%

Alternative D (Aerial Option) Land Use Analysis



1/4 Mile

Office: 15%
 Other: 11%
 Residential: 74% (4750 Units)
 Total: 9.6 Million Sq. Ft.

1/2 Mile (excludes 1/4 Mile)

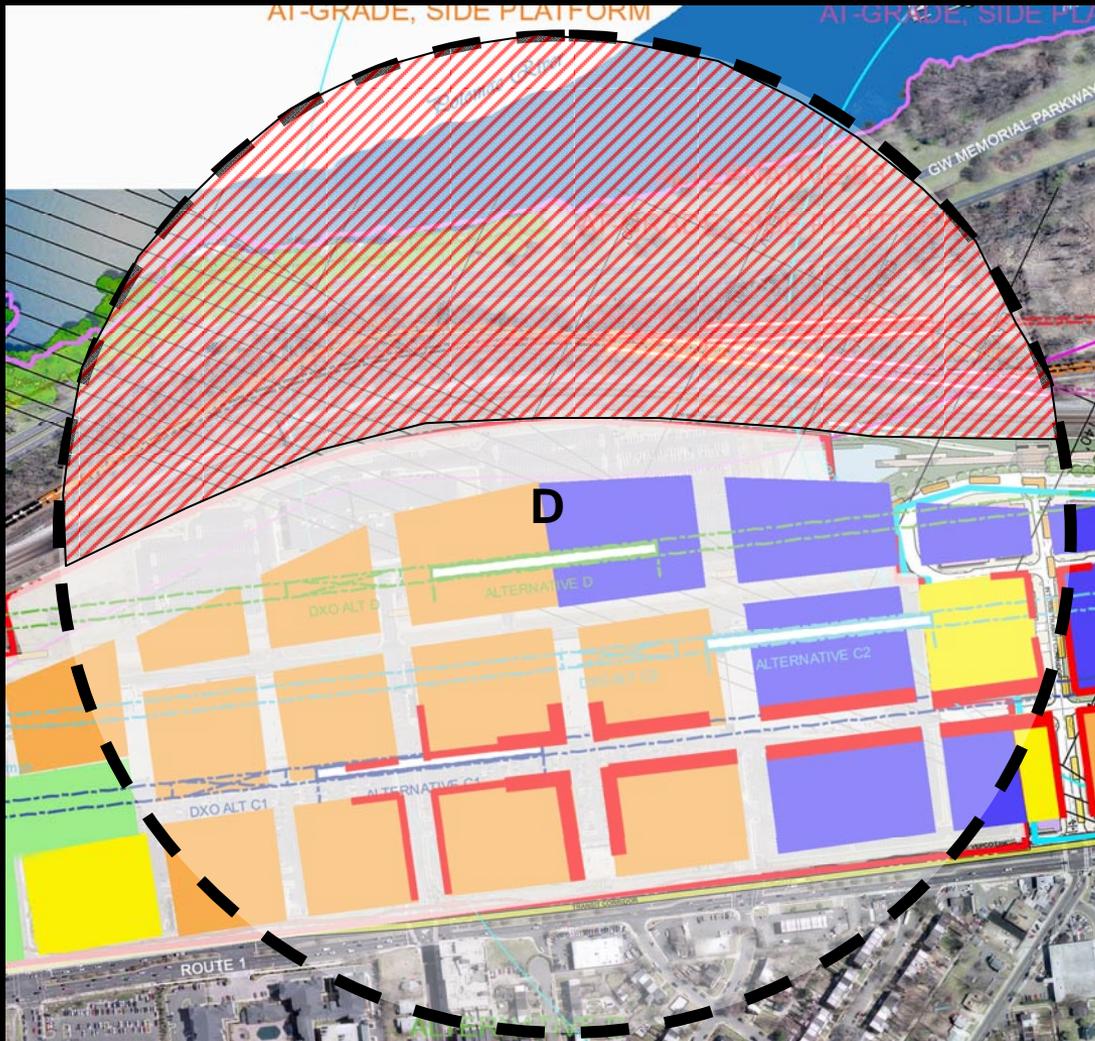
Office: 43%
 Residential: 34% (1185 Units)
 Other: 23%
 Total: 4.4 Million Sq. Ft.

Total

Office: 24%
 Residential: 61% (5935 Units)
 Other: 15%
 Total: 14.0 Million Sq. Ft.



Alternative D (Aerial Option) Land Use Analysis



1/4 Mile

Office: 15%

Other: 11%

Residential: 74% (4750 Units)

Total: 9.6 Million Sq. Ft.

1/2 Mile (excludes 1/4 Mile)

Office: 43%

Residential: 34% (1185 Units)

Other: 23%

Total: 4.4 Million Sq. Ft.

Total

Office: 24%

Residential: 61% (5935 Units)

Other: 15%

Total: 14.0 Million Sq. Ft.

Legend

 Residential

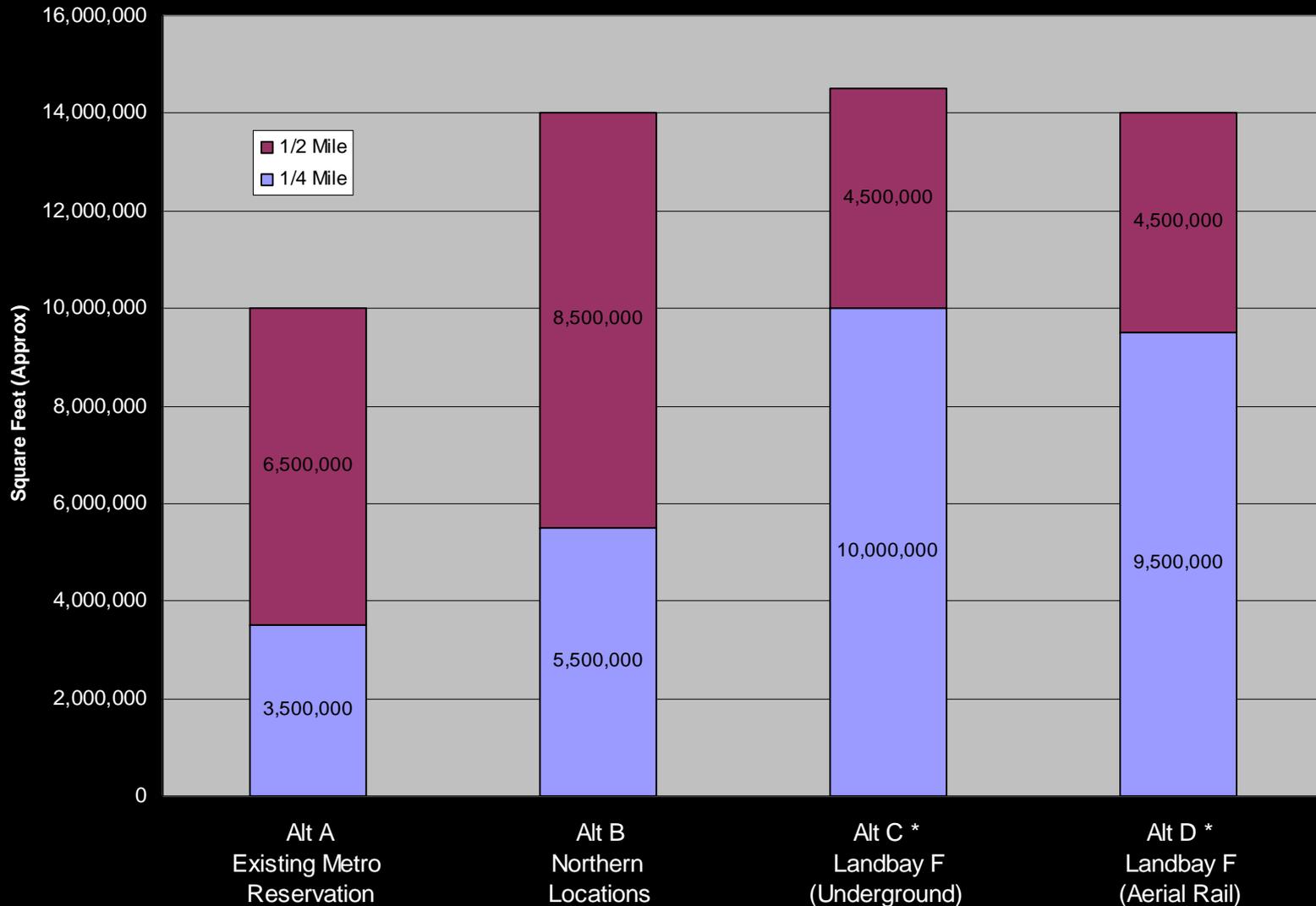
 Hotel

 Parks & Open Space

 Office

 Retail

Metro Station Location Alternatives Potomac Yard Development Potential within 1/4 Mile and 1/2 Mile Walksheds



* **NOTE:** Development for Landbay F was assumed equal (in size and distribution) for each alternative and does not account for likely increases in density for alternatives located within the main body of Potomac Yard.

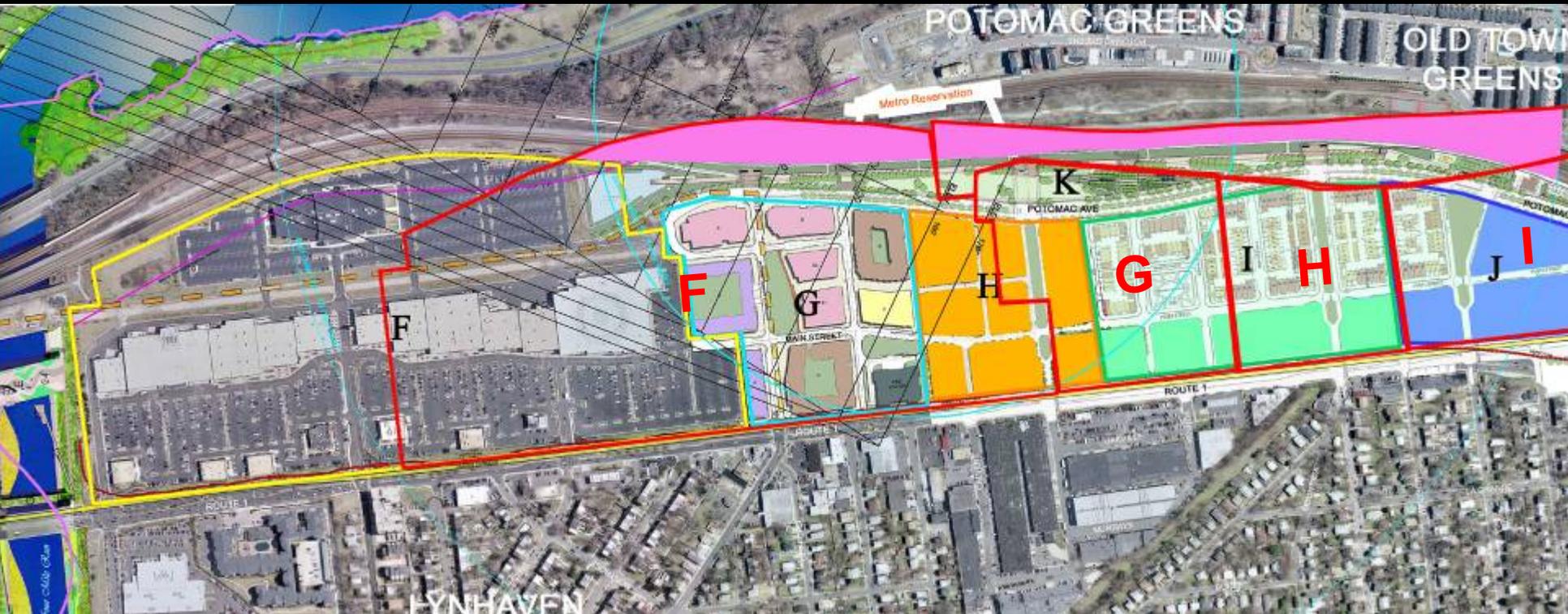
Summary of Alternatives

Characteristic	Alternatives						
	A	B1	B2	B3	C1	C2	D
Station Type	At-grade, side platform	Not Viable	At-grade, side platform	At-grade, side platform	Not Viable	In tunnel, center platform	Elevated, center platform
Approximate development within ¼ mile, million square feet	3.5		5.5	5.5		10.0	9.5
Approximate development within ½ mile, million square feet	10.0		14.0	14.0		14.5	14.0
Construction impacts on Metrorail operations	High		High	Medium		Medium	Medium
Preliminary estimated capital cost, million 2012 dollars	\$140 - 180		\$150 - 200	\$140 - 180		\$410 - 520	\$230 - 300

Note: Some station characteristics will require more detailed analysis in future planning phases. They include environmental impacts, detailed architectural and design characteristics, and operating and maintenance costs.

Discussion and Questions

Comparison of Developable Area Available to Northern Metro Alternative



Approximately 9 acres of developable land is gained by moving the metro station north