PROJECT SCHEDULE

PFRC & BLPC MEETINGS

| BLPC #1 (4/8) | Introductions and Process |
| PFRC #1 (4/15) | Introductions and Process |
| BLPC #2 (4/20) | Site Planning and Design Principles |
| BLPC #3 (5/4) | Site Planning Options |
| PFRC #2 (5/14) | Site Planning |
| BLPC #4 (5/18) | Building and Learning Environments |
| BLPC #5 (6/1) | Preliminary Concepts |

→ PFRC #3 (6/11) Preliminary Concepts
BUILDING SITE GOALS

PHASE 1 OPPORTUNITIES / CHALLENGES

• Double-loaded corridor with natural light for classrooms
• Efficient connection to existing building circulation
• New entry that supports site access and circulation
• Accommodates future Phase 2
BUILDING SITE GOALS

PHASE 1 OPPORTUNITIES / CHALLENGES

- Double-loaded corridor with natural light for classrooms
- Efficient connection to existing building circulation
- New entry that supports site access and circulation
- Accommodates future Phase 2
• Historic preservation as evaluation criteria for site plan and massing
• Historic significance is both architectural and cultural
• View of south facade from Old Dominion and relationship of building to field historically significant
• Prefer options where addition is east of music wing (A3) or low at west end and under courtyard (A, A1, A2)
• Prefer options that minimize site disturbance
• Local historic designation hearing on June 17
• Upcoming workshop on July 15
APS Stratford Project
Transportation Analysis Overview

Stratford PFRC #3
June 11, 2015
Recent and upcoming project activities
• Vehicular traffic
• Intersection operations
• Evaluation of site options
• Other strategies to mitigate site impacts
• Preliminary ped/bike access recommendations
Recent & Upcoming Project Activities

- Williamsburg site visit – May 27, 2015
- VDOT/County Meeting – June 9, 2015
- Five Points Meeting with County – June 24, 2015
Signal at Old Dominion & new driveway is warranted for outbound only, outbound + inbound, but NOT inbound only

Signal would be suitable at midpoint location (as shown in Option C)
- Concerns about driveway location too close to Lorcom & Old Dominion (C1 & G)

Any inbound driveway scenario requires widening Old Dominion

Concerns about U-turns on Old Dominion with right-out options (C, C1, G)

Concerns about directing traffic through Five Points with right-in option (G)

Arlington County expects an aggressive TDM plan for the site

One-way streets are not consistent with Arlington County transportation planning approach
VEHICULAR TRAFFIC
1. APS middle school **drive rate is higher in the morning** than afternoon.

2. Traffic analysis assumes **35% drive rate as a baseline**, and **30% drive rate in a Transportation Demand Management (TDM) Scenario**.

3. Future middle school morning traffic will be **concentrated over a shorter period** compared to current conditions, and will occur earlier than the highest peak of morning rush hour traffic.

4. With these assumptions, **some intersections in the area will experience increased delay**. Degree and location of intersection delay varies between site options.
1. MORNING vs AFTERNOON
1. Drive rate is higher in the morning than afternoon

Average Travel Modes: APS Middle Schools
(Source: 2013 and 2014 APS GO! Student Travel Tallies)

- Family vehicle rate is higher in the AM than in the PM, amounting to 60% more cars.

<table>
<thead>
<tr>
<th></th>
<th>Walk</th>
<th>Bike</th>
<th>School Bus</th>
<th>Family Vehicle</th>
<th>Carpool</th>
<th>Transit</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. MS, Morning</td>
<td>20.3%</td>
<td>3.0%</td>
<td>42.6%</td>
<td>26.6%</td>
<td>4.7%</td>
<td>2.3%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Avg. MS, Afternoon</td>
<td>29.8%</td>
<td>3.2%</td>
<td>46.4%</td>
<td>16.7%</td>
<td>1.9%</td>
<td>1.5%</td>
<td>0.4%</td>
</tr>
</tbody>
</table>
2. FUTURE DRIVE RATE ASSUMPTIONS
2. Traffic Analysis: Drive Rate Assumption

“Drive Rate” = \( \% \text{ students in family vehicle} + \frac{\% \text{ students in carpool}}{2} \)
## 2. Traffic Analysis: Drive Rate Assumption

### Student Travel—Neighborhood Middle Schools

<table>
<thead>
<tr>
<th>School</th>
<th>Walk</th>
<th>Bike</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Gunston</td>
<td>13.5%</td>
<td>1.0%</td>
<td>60.0%</td>
<td>22.0%</td>
<td>3.5%</td>
<td>0.0%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Jefferson</td>
<td>23.0%</td>
<td>6.0%</td>
<td>41.5%</td>
<td>24.5%</td>
<td>2.5%</td>
<td>0.9%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Kenmore</td>
<td>16.5%</td>
<td>0.5%</td>
<td>36.0%</td>
<td>33.5%</td>
<td>3.5%</td>
<td>10.0%</td>
<td>0.1%</td>
</tr>
<tr>
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<td>35.0%</td>
<td>5.0%</td>
<td>32.5%</td>
<td>21.0%</td>
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<td>0.6%</td>
</tr>
<tr>
<td>Williamsburg</td>
<td>13.5%</td>
<td>2.5%</td>
<td>43.0%</td>
<td>32.0%</td>
<td>8.0%</td>
<td>0.2%</td>
<td>0.1%</td>
</tr>
<tr>
<td><strong>RANGE</strong></td>
<td>13.5% – 35%</td>
<td>0.5% - 6.0%</td>
<td>32.5% - 60%</td>
<td>21% - 33.5%</td>
<td>2.5% - 8%</td>
<td>0% - 10%</td>
<td>0.1% - 0.7%</td>
</tr>
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Source: 2013 and 2014 APS GO! Student Travel tallies (AM counts)
## 2. Traffic Analysis: Drive Rate Assumption

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<td><strong>0% - 10%</strong></td>
<td><strong>0.1% - 0.7%</strong></td>
</tr>
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</table>

Source: 2013 and 2014 APS GO! Student Travel tallies (AM counts)
2. Traffic Analysis: Drive Rate Assumption

Range of APS Middle School Drive Rates

- Average MS drive rate (28%-29%)
- Swanson MS (24% in 2013 & 2014)
- Williamsburg MS (41% in 2013 & 32% in 2014)

Source: 2013 and 2014 APS GO! Student Travel tallies (AM counts)
2. Traffic Analysis: Drive Rate Assumption

Range of APS Middle School Drive Rates

- Average MS drive rate (28%-29%)
- Swanson MS (24% in 2013 & 2014)
- Williamsburg MS (41% in 2013 & 32% in 2014)

Assumption: Future MS drive rate will fall in this range, but where?

Source: 2013 and 2014 APS GO! Student Travel tallies (AM counts)
## 2. Traffic Analysis: Drive Rate Assumption

<table>
<thead>
<tr>
<th>School</th>
<th>APS Students Within 1 Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swanson</td>
<td>3,183</td>
</tr>
<tr>
<td>H-B/Stratford</td>
<td>2,560</td>
</tr>
<tr>
<td>Williamsburg</td>
<td>1,753</td>
</tr>
</tbody>
</table>

Source: 2013 student address data
2. Traffic Analysis: Drive Rate Assumption

Existing Ped/Bike Infrastructure
2. Traffic Analysis: Drive Rate Assumption

Potential for TDM: Local Experience

<table>
<thead>
<tr>
<th></th>
<th>Number of Trips</th>
<th>Walk</th>
<th>Bike</th>
<th>School Bus</th>
<th>Family Vehicle</th>
<th>Carpool</th>
<th>Transit</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall 2013</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morning</td>
<td>25490</td>
<td>20%</td>
<td>2%</td>
<td>40%</td>
<td>34%</td>
<td>3%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Afternoon</td>
<td>24140</td>
<td>25%</td>
<td>2%</td>
<td>41%</td>
<td>29%</td>
<td>2%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td><strong>Fall 2014</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morning</td>
<td>30376</td>
<td>23%</td>
<td>2%</td>
<td>42%</td>
<td>29%</td>
<td>3%</td>
<td>0.5%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Afternoon</td>
<td>30037</td>
<td>26%</td>
<td>2%</td>
<td>42%</td>
<td>26%</td>
<td>2%</td>
<td>0.5%</td>
<td>0.6%</td>
</tr>
</tbody>
</table>

*Note: APS has had an active SRTS Coordinator since Fall 2013*
2. Traffic Analysis: Drive Rate Assumption

Potential for TDM: National Experience

SRTS has increased the number of students who walk or bike to and from school.

A study of 801 schools in the District of Columbia, Florida, Oregon, and Texas found that SRTS increased the proportion of students walking and biking to school, and that these effects built over time. The effect was significant even after adjusting for factors such as school location and demographics, and the study included comparisons to schools that did not participate in the program.16

FIGURE 3 Average Rates of Walking and Bicycling to School by Length of Participation in Safe Routes to School Program

<table>
<thead>
<tr>
<th>Length of Participation</th>
<th>Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before SRTS</td>
<td>18.1</td>
</tr>
<tr>
<td>0.1-1.0 years</td>
<td>20.3</td>
</tr>
<tr>
<td>1.1-2.0 years</td>
<td>21.5</td>
</tr>
<tr>
<td>2.1-3.0 years</td>
<td>23.0</td>
</tr>
<tr>
<td>3.1-4.0 years</td>
<td>26.7</td>
</tr>
<tr>
<td>4.1-5.0 years</td>
<td>32.2</td>
</tr>
<tr>
<td>&gt; 5.0 years</td>
<td>35.8</td>
</tr>
</tbody>
</table>
2. Traffic Analysis: Drive Rate Assumption

Range of APS Middle School Drive Rates

- Average MS drive rate (28%-29%)
- Swanson MS (24% in 2013 & 2014)
- Williamsburg MS (41% in 2013 & 32% in 2014)

Source: 2013 and 2014 APS GO! Student Travel tallies (AM counts)
2. Traffic Analysis: Drive Rate Assumption

Range of APS Middle School Drive Rates

- Average MS drive rate (28%-29%)
- Swanson MS (24% in 2013 & 2014)
- Williamsburg MS (41% in 2013 & 32% in 2014)

Baseline scenario drive rate assumption: 35%

35% drive rate is the 75th percentile of APS middle schools

Source: 2013 and 2014 APS GO! Student Travel tallies (AM counts)
2. Traffic Analysis: Drive Rate Assumption

Range of APS Middle School Drive Rates

- Average MS drive rate (28%-29%)
- Swanson MS (24% in 2013 & 2014)
- Williamsburg MS (41% in 2013 & 32% in 2014)

TDM scenario drive rate assumption: 30%

Baseline scenario drive rate assumption: 35%

Source: 2013 and 2014 APS GO! Student Travel tallies (AM counts)
3. ESTIMATING VEHICLE TRIPS AND PEAK HOUR
## 3. Calculating vehicle trips and peak hour

### New 1,000 Seat Neighborhood Middle School

<table>
<thead>
<tr>
<th></th>
<th>Arrival Peak Hour</th>
<th>Dismissal Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IN</td>
<td>OUT</td>
</tr>
<tr>
<td>Students Drop Offs/Pick Ups*</td>
<td>353</td>
<td>353</td>
</tr>
<tr>
<td>Staff **</td>
<td>62</td>
<td>0</td>
</tr>
<tr>
<td>Visitors ***</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Buses****</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>TOTAL</td>
<td>438</td>
<td>366</td>
</tr>
</tbody>
</table>

Note: Each parent drop off counts as two trips...one to the school and one from the school.

Sources:

* Assumes 35% drive rate
** Neighborhood MS staff surveys (2014)
*** Neighborhood MS visitor surveys (2015)
**** Bus estimates (based on APS averages)
### 3. Calculating vehicle trips and peak hour

**Existing H-B Woodlawn & Stratford**

<table>
<thead>
<tr>
<th></th>
<th>AM</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trips during first peak hour*</td>
<td>179</td>
<td>96</td>
</tr>
<tr>
<td>Trips during second peak hour*</td>
<td>364</td>
<td>266</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>543</td>
<td>362</td>
</tr>
</tbody>
</table>

**New Neighborhood Middle School**

<table>
<thead>
<tr>
<th></th>
<th>1,000 Seat School (High Est.**)</th>
<th>1,000 Seat School (Mid/TDM Est.*** )</th>
<th>1,300 Seat School (High Est.**)</th>
<th>1,300 Seat School (Mid/TDM Est.*** )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM</td>
<td>PM</td>
<td>AM</td>
<td>PM</td>
</tr>
<tr>
<td>Projected trips generated by new Middle School (first peak hour only)</td>
<td>804</td>
<td>505</td>
<td>695</td>
<td>437</td>
</tr>
</tbody>
</table>

Sources:
- *March 2015 Driveway Counts and Manual Counts
- **Drive rate assumption: 35% (75th percentile of APS middle schools)
- ***Drive rate assumption: 30% (Assumes 15% of students in a family vehicle shift modes)
3. Calculating vehicle trips and peak hour

Source: March 2015 Driveway Counts
3. Calculating vehicle trips and peak hour

**NEW MS PEAK HOUR**
804 TOTAL TRIPS** (1,000 SEAT SCHOOL)

7:50 AM NEW MS ARRIVAL BELL

**H-B WOODLAWN/STRATFORD PEAK HOUR**
543 TOTAL TRIPS***

8:20 AM H-B ZERO PERIOD

9:24 AM H-B FIRST PERIOD

---

Sources:
*Travel pattern observed at Jefferson MS
**75th percentile neighborhood MS drive rate (2013 and 2014 student tallies)
***March 2015 driveway counts
Speed Study

- Speeding Issues on Old Dominion Drive

- Speed Limit = 30 MPH
  - 85th percentile speed = 32 MPH

- Speed Limit = 25 MPH
  - 85th percentile speed = 23 MPH

- Speed Limit = 30 MPH
  - 85th percentile speed = 31 MPH

- Speed Limit = 35 MPH
  - 85th percentile speed = 45 MPH
63 crashes at study intersections over 3 years (2011-2014)

- 8 crashes resulting in injuries (4 bike/ped)
- 18 collisions occurred during peak arrival and dismissal hours
- 10 involved school-aged drivers
4. INTERSECTION OPERATIONS
Study Intersections

Intersection Counts & Capacity Analysis
Driveway Counts
Speed/Volume Counts

Counts performed March 2015
Existing Intersection Operations

- High-level look at intersection operations
- Frames the future analysis
- Identifies potential challenges for the future
- Traffic model yields lots of data.
- Data points used (for each turning movement):
  - Vehicle Delay
  - Level of Service (strictly based on delay)
  - Volume-to-capacity ratio
  - 95th percentile queue
### Existing Intersection Operations

- **Example Intersection: Lorcom Ln & Military Rd**
  - Eastbound Through/Right Movements

<table>
<thead>
<tr>
<th></th>
<th>Existing New MS Arrival</th>
<th>Existing H-B Arrival</th>
<th>Background New MS Arrival</th>
<th>Background H-B Arrival</th>
<th>Future New MS Arrival – A</th>
<th>Future New MS Arrival – C</th>
<th>Future New MS Arrival – G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay (sec)</td>
<td>14.6</td>
<td>12.8</td>
<td>15.3</td>
<td>13.3</td>
<td>15.1</td>
<td>17.5</td>
<td>17.4</td>
</tr>
<tr>
<td>Level of Service</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>Volume/Capacity</td>
<td>.51</td>
<td>.42</td>
<td>.54</td>
<td>.44</td>
<td>.54</td>
<td>.66</td>
<td>.65</td>
</tr>
<tr>
<td>95th %ile Queue (ft)</td>
<td>149</td>
<td>142</td>
<td>155</td>
<td>147</td>
<td>201</td>
<td>241</td>
<td>238</td>
</tr>
</tbody>
</table>

Delay in seconds, Level of Service: A = Acceptable, B = Reasonable, C = Congestion, G = Gridlock. Volume/Capacity: .51 = .51 times the capacity, .42 = .42 times the capacity, etc.
Challenge Locations

- Northbound approach of Lorcom Ln at Old Dominion Dr
- Eastbound and Westbound approaches of Vacation Ln at Lorcom Ln
- Intersection of Military Rd/Quincy St, Old Dominion & Lee Hwy (Five Points)

*Represents LOS E or F
Evaluation of Site Options
Evaluation Criteria

1. Minimizes adding traffic to intersections and streets that are currently challenging (specifically at Five Points and Lorcom/Old Dominion)
2. Minimizes impacts to local streets (specifically on Vacation Lane and 23rd Street)
3. Doesn’t limit movements as doing so may contribute to congestion
4. Separates modes
5. Provides adequate queuing and turning space for buses
6. Provides adequate queuing space for parent drop-off
7. Provides comfortable pedestrian and bicycle access
8. Accommodates staff, visitor and park/rec parking
### Rating System

<table>
<thead>
<tr>
<th>RATINGS</th>
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<tbody>
<tr>
<td>Satisfies criteria and already optimized</td>
</tr>
<tr>
<td>Satisfies criteria but not yet optimized</td>
</tr>
<tr>
<td>Could satisfy criteria with changes</td>
</tr>
<tr>
<td>Doesn’t satisfy criteria and satisfying criteria would be challenging</td>
</tr>
</tbody>
</table>
OPTION A1
OPTION A2
- All traffic enter/exit on Vacation Ln
- Added second through lane at northbound approach of Lorcom Ln at Old Dominion Dr
- Added signal at Vacation Ln at Lorcom Ln, redistributed traffic
- Challenges at:
  - Five Points
  - Lorcom/Old Dominion NB & EB
OPTION C
OPTION C – Intersection Operations

- All traffic enters on Vacation Ln, drop offs exit onto Old Dominion WB
- Added second through lane at northbound approach of Lorcom Ln at Old Dominion Dr
- No Left or U-turn on WB Old Dominion at Thomas St
- Challenges at:
  - Five Points
  - Lorcom/Old Dominion NB, EB, & WB
OPTION C1 – Intersection Operations

- All traffic enters on Vacation Ln, drop offs exit onto Old Dominion WB
- Added second through lane at northbound approach of Lorcom Ln at Old Dominion Dr
- Challenges at:
  - Five Points
  - Lorcom/Old Dominion NB, EB, & WB
OPTION G – Intersection Operations

- Major Challenge at Five Points
- Challenge at Lorcom/Old Dominion NB, EB, & WB
STUDY C2
Other Strategies to Mitigate Traffic Impacts

• Increase % students who walk and bicycle to school
  – Improve pedestrian and bicycle access/safety
  – Establish school attendance boundary that maximizes walk/bike potential
  – Education and encouragement

• Increase % bus eligible students who ride the school bus
  – More convenient bus schedules/stop locations
  – Address bullying concerns
  – Education and encouragement

• Spread parent drop-off and pick-up in space or time
  – Remote parent drop-off (e.g., on Military and/or Lorcom)
  – Stagger arrival and dismissal
Pedestrian and Bicycle Access—Sample Recommendations

- Install pedestrian hybrid beacon on Old Dominion
- Improve pedestrian crossing conditions at Vacation/Lorcom (e.g., with curb extensions, rapid flash beacons, crossing guard)
- Improve pedestrian crossing conditions at Vacation/Military (e.g., curb extensions, rapid flash beacons, crossing guard)
- Construct continuous sidewalks on both sides of Vacation
- Improved pedestrian crossing to upper lot (e.g., curb extension, raised crossing)
- Adjust bike lanes and sharrows on Lorcom so bike lane is in uphill direction.
QUESTIONS?
BUILDING SITING AND MASSING
OPTION A
ENHANCED ACCESS FROM VACATION LANE

- All drop-off and pick-up from Vacation Lane
- Parent drop-off at north entrance
- New bus drop-off with stacking and queuing
- No change to park or west parking
- Maximum field area
- 140 parking spaces
- Cost: $0.5M - $1.0M
OPTION A1

ENHANCED ACCESS FROM VACATION LANE - SWITCH CAR & BUS

- All drop-off and pick-up from Vacation Lane
- Expanded bus drop-off at existing location
- New parent drop-off loop on Vacation Lane
- No change to park or west parking
- Maximum field area
- 155 parking spaces
- Cost: $0.5M - 1.0M
OPTION A/A1
PRELIMINARY MASSING
OPTION A/A1
SECTION VIEW - LOOKING WEST

Phase 1 addition

Connection to existing circulation

Existing classroom block
OPTION A2
ENHANCED ACCESS FROM VACATION LANE

- All drop-off and pick-up from Vacation Lane
- Existing bus loop widened for more capacity
- Parent drop-off south of field
- Parking on parent drive
- No change to Park or west parking
- Maximum field area
- 148 parking spaces
- Cost: $1.0M - $1.5M
OPTION A2
PRELIMINARY MASSING
OPTION A2
SECTION VIEW - LOOKING WEST

Phase 1 addition
Existing historic gym facade
OPTION A3

ADDITION AND NEW ACCESS ON VACATION LANE

• All drop-off and pick-up from Vacation Lane
• Existing bus loop widened for more capacity
• Phase 1 adjacent to music wing
• Parent drop-off loop south of new addition
• Field shifts west
• No change to Park or west parking
• 140 parking spaces
• Cost: $1.0M-$1.5M
OPTION A3
PRELIMINARY MASSING
OPTION A3
CIRCULATION AT PHASE 1 ADDITION

Addition

Existing

SECTION

THIRD FLOOR
319'-2"

SECOND FLOOR
305'-10"

FIRST FLOOR
292'-6"

BASEMENT
275'-2"

7'-10" Corridor

FIRST FLOOR

Addition

N
OPTION C
VACATION LANE TO OLD DOMINION - HIGH ROAD

- Connection from Vacation Lane to Old Dominion
- Existing bus loop widened for more capacity
- New parent drive south of building
- Road at level of existing courtyard
- No change to park or west parking
- Field shifts south
- 160 parking spaces
- Cost: $1.5M - $2.0M
OPTION C
PRELIMINARY MASSING
OPTION C
SECTION VIEW - LOOKING WEST

- Phase 1 addition
- New courtyard
- Existing classroom block
OPTION C1
VACATION LANE TO OLD DOMINION - LOW ROAD

- Connection from Vacation Lane to Old Dominion
- Existing bus loop widened for more capacity
- New parent drive south of building
- Road at level of existing field
- Baseball field at park reconfigured
- Field shifts south
- 130 parking spaces
- Cost: $2.0 - $2.5M
OPTION C1
PRELIMINARY MASSING
OPTION C1
SECTION VIEW - LOOKING WEST

New drive at field level
New entry and heart of school
Existing stair tower
OPTION G
OLD DOMINION LOOP

- New drop-off drive from Old Dominion
- North drop-off loop still in use
- Park fields relocated within the loop
- Renovated entrance at existing building 2nd Floor
- Park access from 23rd St
- 120 parking spaces
- Cost: $3.5M - $4.0M
OPTION G
PRELIMINARY MASSING
**OPTION G**

**PRELIMINARY MASSING**

- Existing loading dock
- New lobby at 2nd floor of existing building
- Phase 1 addition
STUDY C2

VACATION LANE TO OLD DOMINION - ROAD AT SOUTH

- Road at south of site for building flexibility at courtyard
- Maximum queuing for cars on site
- Drop-off / arrival at 1st or 2nd floor level
- Road up to Old Dominion midpoint
- Field shifted
- Parking on road
## EVALUATION MATRIX
### SITE AND BUILDING CRITERIA

<table>
<thead>
<tr>
<th>SITE CRITERIA</th>
<th>OPTIONS</th>
<th>A</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>C</th>
<th>C1</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit disturbance to existing DPR property</td>
<td></td>
<td>green</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>red</td>
</tr>
<tr>
<td>Preserve and enhance existing field uses and site amenities on APS property</td>
<td></td>
<td>yellow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimize environmental impacts: stormwater, non-permeable surfaces, RPA boundary</td>
<td></td>
<td>red</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Provided flexibility for phase 2</td>
<td></td>
<td>red</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance site and building costs ($ only includes road and concept regrading)</td>
<td></td>
<td>yellow</td>
<td>$0.5 - $1.0 M</td>
<td>$0.5 - $1.0 M</td>
<td>$1.0 - $1.5 M</td>
<td>$1.0 - $1.5 M</td>
<td>$1.5 - $2.0 M</td>
<td>$2.0 - $2.5 M</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>BUILDING CRITERIA</th>
<th>OPTIONS</th>
<th>A</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>C</th>
<th>C1</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide an addition that enhances the arrival and internal circulation network</td>
<td></td>
<td>yellow</td>
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<tr>
<td>Respect and compliment existing historic character</td>
<td></td>
<td>red</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Maximize building construction efficiency</td>
<td></td>
<td>red</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Provide optimal daylighting and learning environments</td>
<td></td>
<td>red</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**KEY:**
- Satisfies criteria and already optimized
- Satisfies criteria but not yet optimized
- Could satisfy criteria with changes
- Does not satisfy criteria and satisfying criteria would be challenging
## OPEN SPACE / IMPERVIOUS AREA

### APS PROPERTY (383,328 SF)

<table>
<thead>
<tr>
<th>Building Coverage</th>
<th>Roads / Paving</th>
<th>Fields / Amenity</th>
<th>Open Space</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXISTING</strong></td>
<td>15.0%</td>
<td>23.4%</td>
<td>15.6%</td>
</tr>
<tr>
<td>A</td>
<td>20.3%</td>
<td>24.8%</td>
<td>15.6%</td>
</tr>
<tr>
<td>A1</td>
<td>20.3%</td>
<td>25.4%</td>
<td>15.6%</td>
</tr>
<tr>
<td>A2</td>
<td>22.1%</td>
<td>26.2%</td>
<td>15.6%</td>
</tr>
<tr>
<td>A3</td>
<td>18.3%</td>
<td>23.2%</td>
<td>14.7%</td>
</tr>
<tr>
<td>C</td>
<td>18.6%</td>
<td>28.1%</td>
<td>15.6%</td>
</tr>
<tr>
<td>C1</td>
<td>19.8%</td>
<td>27.0%</td>
<td>15.6%</td>
</tr>
<tr>
<td>G</td>
<td>18.0%</td>
<td>25.7%</td>
<td>15.6%</td>
</tr>
</tbody>
</table>

### DPR PROPERTY (172,609 SF)

<table>
<thead>
<tr>
<th>Roads / Paving</th>
<th>Fields / Amenity</th>
<th>Open Space</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXISTING</strong></td>
<td>20.5%</td>
<td>31.8%</td>
</tr>
<tr>
<td>A</td>
<td>20.5%</td>
<td>31.8%</td>
</tr>
<tr>
<td>A1</td>
<td>20.5%</td>
<td>31.8%</td>
</tr>
<tr>
<td>A2</td>
<td>20.5%</td>
<td>31.8%</td>
</tr>
<tr>
<td>A3</td>
<td>20.5%</td>
<td>31.8%</td>
</tr>
<tr>
<td>C</td>
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<td>31.8%</td>
</tr>
<tr>
<td>C1</td>
<td>21.7%</td>
<td>31.8%</td>
</tr>
<tr>
<td>G</td>
<td>30.5%</td>
<td>29.1%</td>
</tr>
</tbody>
</table>

Note: Estimated percentages based on concept site plans. Paving includes existing sidewalk and proposed roads.
## OPEN SPACE / IMPERVIOUS AREA

<table>
<thead>
<tr>
<th>APS PROPERTY + DPR PROPERTY (555,937 SF / 12.76 AC)</th>
<th>Building Coverage</th>
<th>Roads / Paving</th>
<th>Fields / Amenity</th>
<th>Open Space</th>
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</thead>
<tbody>
<tr>
<td><strong>EXISTING</strong></td>
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<td>46.5%</td>
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<tr>
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<td>41.9%</td>
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<td>14.0%</td>
<td>23.9%</td>
<td>20.6%</td>
<td>41.5%</td>
</tr>
<tr>
<td>A2</td>
<td>15.2%</td>
<td>24.5%</td>
<td>20.6%</td>
<td>39.7%</td>
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<tr>
<td>A3</td>
<td>12.6%</td>
<td>22.4%</td>
<td>20.0%</td>
<td>45.1%</td>
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<tr>
<td>C</td>
<td>12.8%</td>
<td>25.7%</td>
<td>20.6%</td>
<td>40.8%</td>
</tr>
<tr>
<td>C1</td>
<td>13.7%</td>
<td>25.0%</td>
<td>20.6%</td>
<td>40.7%</td>
</tr>
<tr>
<td>G</td>
<td>12.4%</td>
<td>24.1%</td>
<td>20.6%</td>
<td>42.8%</td>
</tr>
</tbody>
</table>

Note: Estimated percentages based on concept site plans. Paving includes existing sidewalk and proposed roads.
• 446 trees surveyed on site
• Fewer than 5 trees identified as highest priority for preservation
• ~10% of trees on site identified in poor condition, many of them dead
• PFRC meeting #4 - July 16, 2015