

CONFIDENTIAL
Do Not Distribute Due to
Public Safety/Security

PRELIMINARY PLANS PRESENTATION

DuFief Elementary School

Addition/Facility Upgrade

Prepared for
Montgomery County Board of Education

January 2020

Preliminary Plans Presentation

DuFief Elementary School

Addition/Facility Upgrade

15001 DuFief Drive
Gaithersburg, Maryland, 20878

Montgomery County Board of Education

| | |
|--------------------------|----------------|
| Mrs. Shebra L. Evans | President |
| Mrs. Brenda Wolff | Vice President |
| Ms. Jeanette E. Dixon | Member |
| Dr. Judith Docca | Member |
| Ms. Patricia O'Neill | Member |
| Ms. Karla Silvestre | Member |
| Mrs. Rebecca Smondrowski | Member |
| Mr. Nathaniel Tinbite | Student Member |

Montgomery County Schools Administration

| | |
|---------------------------|--------------------------------------------------|
| Dr. Jack R. Smith | Superintendent of Schools |
| Mr. Seth P. Adams | Director, Department of Facilities Management |
| Ms. Adrienne L. Karamihas | Director, Division of Capital Planning |
| Mr. Dennis Cross | Facilities Team Leader, Division of Construction |
| Mr. Gary Mosesman | Team Manager, Division of Construction |
| Mr. James Duffy | Project Manager, Division of Construction |
| Mr. DJ Connelly | Facility Planner, Division of Capital Planning |

DuFief Elementary School Addition/Facility Upgrade

WMCRP Architects

Facility Advisory Process Involvement

Involvement

The preliminary plans for the DuFief Elementary School project were developed based on the educational specifications prepared by Montgomery County Public Schools (MCPS). Through a series of public meetings, several design alternatives were developed and evaluated. The proposed plans presented herein were reviewed and subsequently modified in accordance with recommendations and suggestions received during the schematic design meetings.

Participants in Facility Advisory Process

| | | |
|-----------------------|------------------|--------------------------|
| Mr. Gregg Baron | Principal | DuFief Elementary School |
| Ms. Kim McWilliams | Staff | DuFief Elementary School |
| Ms. Amanda Kipfer | Staff | DuFief Elementary School |
| Ms. Alicia Nicholls | Staff | DuFief Elementary School |
| Ms. Carolyn Skrodzki | Staff | DuFief Elementary School |
| Ms. Diane Aubley | Staff | DuFief Elementary School |
| Ms. Amanda Eisenhower | Staff | DuFief Elementary School |
| Ms. Michelle Walfish | Staff | DuFief Elementary School |
| Ms. Heather Kauffman | Staff | DuFief Elementary School |
| Ms. Alison Wolski | Staff | DuFief Elementary School |
| Ms. Vicki Ellison | Staff | DuFief Elementary School |
| Mr. Matt Yates | Staff | DuFief Elementary School |
| Ms. Fran Solovieff | Staff | DuFief Elementary School |
| Ms. Kersti Weddle | Staff | DuFief Elementary School |
| Ms. Andrea Sosias | Staff | DuFief Elementary School |
| Ms. Jennifer Coon | Staff | DuFief Elementary School |
| Ms. Kerry Rudy | Staff | DuFief Elementary School |
| Mrs. Brandy Miller | Community Member | DuFief Community |
| Mr. Richard Coon | Community Member | DuFief Community |
| Ms. Nathalie Noon | Community Member | DuFief Community |
| Mrs. Julie Rivera | Community Member | DuFief Community |

Facility Advisory Process Involvement (continued)

Participants in Facility Advisory Process (continued)

| | | |
|------------------------|------------------|---------------------------------|
| Mrs. Chinita Sinkler | Community Member | DuFief Community |
| Ms. Leslie Everhart | Staff | Academy CDC |
| Ms. Margaret Valentine | Staff | DuFief Elementary School |
| Ms. Alicia Nicholls | Community Member | DuFief Community |
| Ms. Carolyn Skrodzki | Community Member | DuFief Community |
| Ms. Michelle Walfish | Community Member | DuFief Community |
| Ms. Roxanne Shively | Community Member | DuFief Community |
| Mr. Doug Duncan | Community Member | DuFief Community |
| Mr. Michael Dame | Community Member | DuFief Community |
| Mrs. M Deneise Hammond | Principal | Rachel Carson Elementary School |
| Mrs. Wendy Eldred | Community Member | DuFief Community |
| Ms. Crispin Taylor | Community Member | DuFief Community |
| Mr. Tatiano Psuvek | Community Member | DuFief Community |
| Mr. Ian Spellman | Community Member | DuFief Community |
| Mrs. Trish Taylor | Community Member | DuFief Community |
| Mr. Amrit Singh | Community Member | DuFief Community |
| Mr. Kunal Suryavanshi | Community Member | DuFief Community |
| Mr. Herman S. Basra | Community Member | DuFief Community |
| Mrs. Leilani Micalizzi | Community Member | DuFief Community |
| Ms. Runako Allsopp | Community Member | DuFief Community |

Facility Advisory Process Involvement

| | | |
|---------------------|------------------|----------------------------------------|
| Mr. Thomas Young | Community Member | DuFief Community |
| Ms. Carolyn Carlson | Community Member | DuFief Community |
| Mr. John Kasha | Community Member | DuFief Community |
| Ms. Leslie Nordly | Community Member | DuFief Community |
| Ms. Liat Shapira | Community Member | DuFief Community |
| Ms. Sherry Fischer | Community Member | DuFief Community |
| Mr. Don Elin | Director | Academy CDC |
| Ms. Aashima Mehta | Community Member | DuFief Community |
| Ms. Brandy Miller | Community Member | DuFief Community |
| Ms. Cynthia Taylor | Community Member | DuFief Community |
| Mrs. Sanna Saude | Community Member | DuFief Community |
| Ms. Weiming Ouyang | Community Member | DuFief Community |
| Ms. Jillian Storms | Architect | Maryland State Department of Education |
| Mrs. Wei Shen | Community Member | DuFief Community |
| Ms. Kathy Estes | Community Member | DuFief Community |

Project Information

Background/History

| | |
|---------------------------------------------------------|-----------------------------------------------------|
| Location: | 15001 DuFief Drive Gaithersburg, Maryland, 20878 |
| Cluster: | Thomas S. Wootton Cluster |
| History and Square Footage of Existing Building: | 1975 Original School Building 59,013 square feet |
| Site Size: | 10 acres |

DuFief Elementary School was constructed in 1975 as a pod configuration open concept school. Identified as having infrastructure, building quality, and indoor environmental challenges, this building was identified as needing significant improvements.

Additionally, projections indicate that enrollment at Rachel Carson Elementary School will exceed capacity by 92 seats or more by the end of the six-year planning period. To address the enrollment growth at Rachel Carson Elementary School, the Board of Education approved the expansion of DuFief Elementary School to accommodate the overutilization of Rachel Carson Elementary School.

Expenditures were approved to provide capacity and facility upgrades at DuFief Elementary School. Although the Board of Education requested that the project be completed in September 2021, The County Council delayed the project to September 2022. An FY2019 appropriation was approved for planning to begin architectural design and planning for this project. An FY 2021 appropriation is recommended for construction funding. In order for this project to be completed on this schedule, county and state funding must be provided at the levels recommended in the CIP.

A boundary study is recommended to reassign students from Rachel Carson Elementary School to DuFief Elementary School. The anticipated scope of the boundary study will include Rachel Carson and DuFief elementary schools as well as the Lakelands Park and Robert Frost middle schools and Quince Orchard and Thomas S. Wootton high schools to review the secondary school articulation patterns. The Board of Education will take action on the scope of the boundary study on November 26, 2019. The boundary study will begin spring 2020, with Board of Education action scheduled for March 2021.

DuFief Elementary School Addition/Facility Upgrade

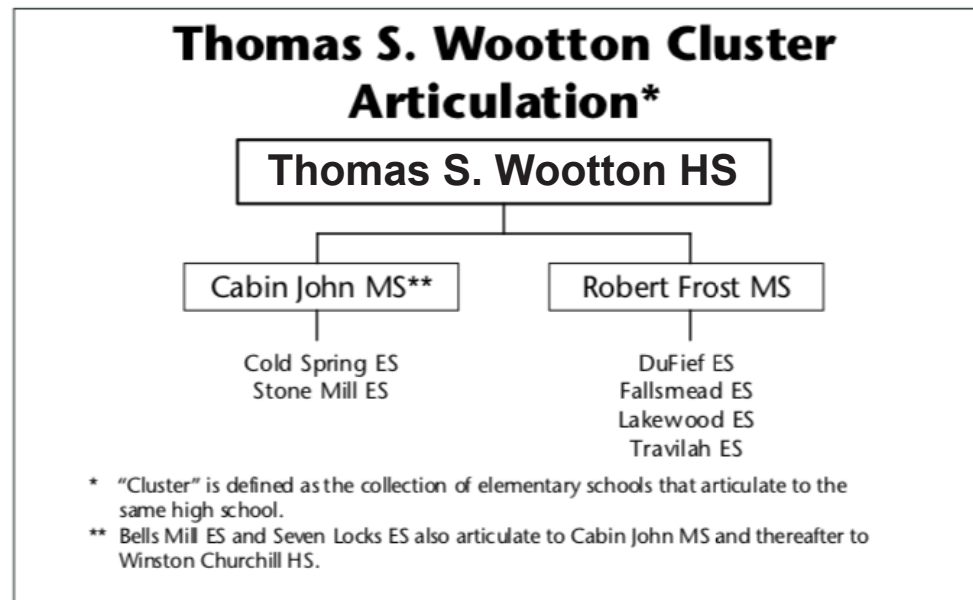
WMCRP Architects

Project Information (continued)

Educational Program Objectives

The objectives of this project are to construct a replacement Elementary School and to address the increase in student enrollment of Rachel Carson Elementary School. Following the guideline provided in the Regulation FAA-R4 *Long-range Educational Facilities Planning*, the proposed replacement facility will be designed for a capacity of approximately 740 students including the core spaces.

The chart below indicates the articulation of students in the Thomas S. Wootton Cluster.



Project Information (continued)

Educational Program Objectives

The following data includes student enrollment projections compared to capacity, demographic characteristics, and program capacity table for elementary schools in the cluster for the school year 2019-2020:

| Schools | | Prelimin. 19-20 | Projections | | | | | | | |
|----------------------|-------------------|--------------------|-------------|-------------|--------------------------------------|-------------|-------------|-------------|-------------|-------------|
| | | | 20-21 | 21-22 | 22-23 | 23-24 | 24-25 | 25-26 | 2029 | 2034 |
| Thomas S. Wootton HS | Program Capacity | 2142 | 2142 | 2142 | 2142 | 2142 | 2142 | 2142 | 2142 | 2142 |
| | Enrollment | 2116 | 2075 | 2070 | 2081 | 2031 | 2034 | 2022 | 2023 | 2006 |
| | Available Space | 26 | 67 | 72 | 61 | 111 | 108 | 120 | 119 | 136 |
| | Comments | | | | Planning for Maj. Cap. Project | | | | | |
| Crown HS | Program Capacity | | | | | | | 2700 | 2700 | 2700 |
| | Enrollment | | | | | | | 0 | 0 | 0 |
| | Available Space | | | | | | | 2700 | 2700 | 2700 |
| | Comments | | | | | | | Opens | | |
| Cabin John MS | Program Capacity | 1057 | 1057 | 1057 | 1057 | 1057 | 1057 | 1057 | 1057 | 1057 |
| | Enrollment | 1040 | 1057 | 1055 | 1038 | 1048 | 1070 | 1072 | 1012 | 930 |
| | Available Space | 17 | 0 | 2 | 19 | 9 | (13) | (15) | 45 | 127 |
| | Comments | | | | | | | | | |
| Robert Frost MS | Program Capacity | 1084 | 1084 | 1084 | 1084 | 1084 | 1084 | 1084 | 1084 | 1084 |
| | Enrollment | 1029 | 1016 | 1048 | 1033 | 1015 | 1003 | 1002 | 1048 | 1112 |
| | Available Space | 55 | 68 | 36 | 51 | 69 | 81 | 82 | 36 | (28) |
| | Comments | | | | | | | | | |
| Cold Spring ES | Program Capacity | 458 | 458 | 458 | 458 | 458 | 458 | 458 | | |
| | Enrollment | 332 | 336 | 362 | 374 | 354 | 346 | 337 | | |
| | Available Space | 126 | 122 | 96 | 84 | 104 | 112 | 121 | | |
| | Comments | | | | | | | | | |
| DuFief ES | Program Capacity | 427 | 427 | 427 | 753 | 753 | 753 | 753 | | |
| | Enrollment | 316 | 327 | 319 | 316 | 315 | 310 | 308 | | |
| | Available Space | 111 | 100 | 108 | 437 | 438 | 443 | 445 | | |
| | Comments | Boundary Study | | | Project Complete | | | | | |

Project Information (continued)

Educational Program Objectives

The following data includes student enrollment projections compared to capacity, demographic characteristics, and program capacity table for elementary schools in the cluster for the school year 2019-2020:

| | | | | | | | | | | |
|---------------------|------------------|------|------|------|------|------|------|------|------|------|
| Fallsmead ES | Program Capacity | 551 | 551 | 551 | 551 | 551 | 551 | 551 | | |
| | Enrollment | 565 | 548 | 567 | 574 | 578 | 567 | 557 | | |
| | Available Space | (14) | 3 | (16) | (23) | (27) | (16) | (6) | | |
| | Comments | | | | | | | | | |
| Lakewood ES | Program Capacity | 556 | 556 | 556 | 556 | 556 | 556 | 556 | | |
| | Enrollment | 461 | 447 | 441 | 432 | 439 | 443 | 442 | | |
| | Available Space | 95 | 109 | 115 | 124 | 117 | 113 | 114 | | |
| | Comments | | | | | | | | | |
| Stone Mill ES | Program Capacity | 694 | 694 | 694 | 694 | 694 | 694 | 694 | | |
| | Enrollment | 588 | 589 | 585 | 585 | 568 | 565 | 575 | | |
| | Available Space | 106 | 105 | 109 | 109 | 126 | 129 | 119 | | |
| | Comments | | | | | | | | | |
| Travilah ES | Program Capacity | 526 | 526 | 526 | 526 | 526 | 526 | 526 | | |
| | Enrollment | 341 | 330 | 320 | 314 | 314 | 330 | 323 | | |
| | Available Space | 185 | 196 | 206 | 212 | 212 | 196 | 203 | | |
| | Comments | | | | | | | | | |
| Cluster Information | HS Utilization | 99% | 97% | 97% | 97% | 95% | 95% | 94% | 94% | 94% |
| | HS Enrollment | 2116 | 2075 | 2070 | 2081 | 2031 | 2034 | 2022 | 2023 | 2006 |
| | MS Utilization | 97% | 97% | 98% | 97% | 96% | 97% | 97% | 96% | 95% |
| | MS Enrollment | 2069 | 2073 | 2103 | 2071 | 2063 | 2073 | 2074 | 2060 | 2042 |
| | ES Utilization | 81% | 80% | 81% | 73% | 73% | 72% | 72% | 72% | 71% |
| | ES Enrollment | 2603 | 2577 | 2594 | 2595 | 2568 | 2561 | 2542 | 2530 | 2500 |

Project Information (continued)

Educational Program Objectives

Demographic Characteristics of Schools

| Schools | 2019–2020 | | | | | | 2018–2019 | | |
|---------------------------------|------------------|---------------------|-----------------------|--------------|--------------|--------------|--------------|--------------|-------------------|
| | Total Enrollment | Two or more races % | Black or Afr. Amer. % | Asian% | Hispanic % | White % | FARMS%* | ESOL%** | Mobility Rate%*** |
| Thomas S. Wootton HS | 2116 | 4.8% | 8.3% | 37.1% | 7.9% | 41.7% | 5.2% | 1.8% | 4.1% |
| Cabin John MS | 1040 | 6.0% | 11.5% | 35.1% | 8.1% | 39.2% | 7.2% | 4.1% | 4.0% |
| Robert Frost MS | 1029 | 4.4% | 11.3% | 38.8% | 7.6% | 37.6% | 5.8% | 2.9% | 5.4% |
| Cold Spring ES | 332 | 8.7% | 3.6% | 41.3% | 5.1% | 41.3% | 0% | 1.8% | 4.5% |
| DuFief ES | 316 | 9.5% | 14.6% | 31.6% | 13.0% | 31.0% | 14.2% | 16.8% | 12.3% |
| Fallsmead ES | 565 | 5.3% | 10.4% | 34.9% | 9.7% | 39.1% | 9.3% | 13.5% | 15.1% |
| Lakewood ES | 461 | 7.4% | 12.4% | 46.2% | 10.4% | 23.0% | 7.1% | 12.4% | 11.1% |
| Stone Mill ES | 588 | 5.3% | 14.1% | 45.9% | 8.8% | 25.9% | 9.1% | 12.4% | 6.7% |
| Travilah ES | 341 | 4.1% | 6.5% | 46.6% | 10.3% | 32.0% | 6.7% | 7.8% | 6.4% |
| Elementary Cluster Total | 2603 | 6.5% | 10.7% | 41.3% | 9.5% | 31.6% | 7.9% | 11.2% | 9.6% |
| Elementary County Total | 76541 | 5.3% | 21.3% | 13.6% | 33.9% | 25.5% | 38.3% | 25.6% | 13.4% |

*Percent of students approved for Free and Reduced-priced Meals Program (FARMS) during the 2018–2019 school year.

**Percent of English for Speakers of Other Languages (ESOL) during the 2018–2019 school year. High School students are served in regional ESOL centers.

***Mobility Rate is the number of entries plus withdrawals during the 2018–2019 school year compared to total enrollment.

Notes: Native Hawaiian/Pacific Islander and American Indian/Alaskan Native categories total less than 1% and were therefore excluded from the table.

Due to federal and state guidelines, demographic characteristics of schools of less than or equal to 5 students per category are reported as 0%.

Project Information (continued)

Educational Program Objectives

Program Capacity Table

(School Year 2019–2020)

| Schools | Grades Served | Capacity (HS @90% MS@85%) | Total Rooms | Support Rooms | Regular Secondary @25 | Regular Elementary @23 | CSR Grades 1–2 @18 | Pre-K @20 | Pre-K @40 | HS @20 | CSR KIND @18 | KIND @22 | ESOL @15 | METS @15 | Special Education Services | | | | | | | | | | | | | | | | | | | | | |
|----------------------|---------------|---------------------------|-------------|---------------|-----------------------|------------------------|--------------------|-----------|-----------|--------|--------------|----------|----------|----------|----------------------------|--------------|---------|----------|---------|--------|--------|--------|------------|---------|----------|---------------|-----------|-------|--------|---------|---------|------------------------|-------|--------------|---------------|--------------------|
| | | | | | | | | | | | | | | | HSM @13 | ELEM LAD @13 | ELC @10 | LANG @12 | LFI @10 | SCB @6 | AAC @7 | AUT @6 | BRIDGE @10 | DHOH @7 | SESS @10 | EXTENSIONS @6 | GT/LD @13 | PD @7 | PEP @6 | PEP @12 | PEP @18 | VISION (Elementary) @7 | OTHER | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | School Based | Cluster Based | Quad Cluster Based |
| Thomas S. Wootton HS | 9-12 | 2142 | 99 | | 94 | | | | | | | | | | | | | | | 3 | 2 | | | | | | | | | | | | | | | |
| Cabin John MS | 6-8 | 1057 | 57 | | 47 | | | | | | | | | | | | | | | 2 | 2 | 6 | | | | | | | | | | | | | | |
| Robert Frost MS | 6-8 | 1084 | 51 | | 51 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cold Spring ES | K-5 | 458 | 24 | 4 | | 18 | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| DuFief ES | K-5 | 427 | 26 | 4 | | 13 | | | | | | 3 | | | | | | | | | | | 5 | 1 | | | | | | | | | | | | |
| Fallsmead ES | K-5 | 551 | 30 | 3 | | 19 | | | | | | 4 | | 2 | | | | | | | | | | | | | | | | | | | | | | 2 |
| Lakewood ES | K-5 | 556 | 30 | 4 | | 20 | | | | | | 3 | | | | | | | | 3 | | | | | | | | | | | | | | | | |
| Stone Mill ES | K-5 | 694 | 36 | 4 | | 24 | | | | | | 4 | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 2 | |
| Travilah ES | K-5 | 526 | 26 | 3 | | 20 | | | | | | 3 | | | | | | | | | | | | | | | | | | | | | | | | |

Project Information (continued)

Educational Program Objectives

Project Design Objectives

The building design will encourage a flexible approach to accommodate the educational program and maximum connectivity to the surrounding physical environment. Each instructional area will have adequate learning spaces, work areas, restrooms, and storage facilities.

The following are key elements of the project design:

- Minimize footprint to reduce impact on existing DuFief site
- The main entrance of the school will address DuFief Drive
- Provide safe site access (pedestrian and vehicular) with separate bus and student drop-off loops and strategically located curb cuts and crosswalks
- Provide streamlined circulation within the building with appropriate programmatic adjacencies
- Provide accessible community use spaces without sacrificing school security
- Provide site amenities, such as new play equipment, that enhance the site and better serve the community and the adjacent DuFief Park
- Provide a design that responds to the natural environmental features of the site while creating learning opportunities
- Provide courtyards for increased daylight to classrooms and additional learning opportunities

Project Information (continued)

Teaching Stations and Spaces Provided When Complete

(Number of teaching stations calculated in the program capacity is indicated within parentheses)

Classrooms:

| | |
|-----------------------------------------|----|
| Pre Kindergarten Speech and Language | 1 |
| Pre Kindergarten Special Education | 1 |
| Kindergarten Classrooms | 5 |
| Classrooms (Grades 1-5) | 25 |
| Special Ed Classrooms - Learning Center | 5 |
| Psychologist's Suite/Future Classrooms | 1 |
| Music | 1 |
| Dual-Purpose Room | 1 |
| Art | 1 |

Core Facilities:

| | |
|----------------------------------|---|
| Administrative Suite | 1 |
| Health Suite | 1 |
| Multi-Purpose Room with Platform | 1 |
| Kitchen | 1 |
| Library Media Center | 1 |
| Gymnasium | 1 |

Support Spaces:

| | |
|--------------------------------------|---|
| Speech/Language Room | 2 |
| Instrumental Music | 1 |
| Therapy/Support Room | 1 |
| Large Instructional Support Room | 2 |
| Small Instructional Support Room | 3 |
| Learning Center Assessment Room | 1 |
| Learning Center Coordinator's Office | 1 |
| Learning Center File Room | 1 |
| Learning Center Reception | 1 |
| Testing/Conference Room | 1 |
| Support Staff Offices | 2 |
| Counselors Office | 1 |
| Itinerant Staff Office | 1 |
| Staff Development Office | 1 |
| Reading Specialist Office | 1 |
| Workroom | 3 |
| Staff Lounge | 1 |
| Conference Room | 1 |
| Training/Conference Room | 1 |
| Building Services Suite | 1 |
| Compactor Room | 1 |
| General Storage | 4 |
| PTA Storage | 1 |

Project Information (continued)

Site Design

Site Features:

DuFief Elementary School is situated on a 10 acre parcel at 15001 DuFief Drive, Gaithersburg, Maryland, 20878. The site is bounded by DuFief Drive to the west and DuFief Park to the south. The immediate neighborhood on the north and east features single-family dwellings. Multiple curb cuts exist along DuFief Drive and the school shares a parking lot with the adjacent DuFief Park.

The proposed site plan will locate the new building in the approximate location of the existing building with a significant reduction in the building footprint. A dedicated bus loop will be located to the west of the school building. Staff and visitor parking along with a student drop-off loop will be located to the south of the main entrance. Playfields and paved play areas will be consolidated to the east and south of the building. The parking is situated optimally to provide access to the park, playfields and playgrounds for after hours community use. There will be 124 parking spaces, including 5 that are handicap accessible.

Stormwater Management:

A stormwater management system will be provided using the most current environmental site design features and facilities that provide both stormwater runoff quality treatment and quantity attenuation. This system will feature micro-scale bio-retention facilities, infiltration practices, and other low-impact development facilities. Stormwater outfalls will discharge to the existing public storm drain systems in surrounding streets.

Utilities:

All existing utility services and connections, including water, sewer, gas, electric, telephone, and telecommunications, will be upgraded to support the needs of the replacement building. The new water service will be sized to supply the required on-site fire hydrants and to meet the building's fire protection and domestic needs. All upgraded and new service connections will be made to the existing utilities in the roadways adjacent to the site.

Exterior Lighting:

Exterior lighting will be designed to shield adjacent residences from intrusive light glare while maintaining light levels required for site safety and security. The light fixtures will be 100% down-lighting, dark-sky compliant, to minimize light pollution into the night sky. The exterior light fixtures at canopies, building, security, and parking lots will be light-emitting diode (LED) type fixtures that are long-lasting and energy efficient.

Project Information (continued)

Building Design

General Description:

The proposed building, designed to meet Montgomery County Public School's educational specifications, is a partial two-story, steel-framed structure with masonry exterior facades. The proposed plan separates the academic areas from the public areas of the building. The public areas, located in the one-story wing at the front, flanking the school entrance, include the administrative suite, multipurpose room, gymnasium, art, music, dual purpose room, and support spaces. The academic wing just beyond main entrance consists of a two-story classroom wing, with the library media center on the second level. The main office is located directly off a secured vestibule for supervision and control. The gymnasium is located adjacent to the playgrounds and playfields. The pre-kindergarten and kindergarten classrooms are located on the ground floor for direct access to outside. Standard classrooms are located on the first and second floors arranged around a large central courtyard.

Classroom Technology:

Classrooms will be designed with wireless network access and interactive whiteboard systems to support the interactive and mobile technologies that allow students to participate in technology enriched learning. The mobile technology will support flexibility to reconfigure classrooms and learning throughout the instructional day. Full building wireless technology will enable schools to access digital content, curricular, and instructional resources with greater flexibility and efficiency.

Code Compliance/Accessibility:

All areas in the school will be designed to meet national and local codes including fire, life-safety, accessibility, and health standards. The proposed building will be in full compliance with the *Americans with Disabilities Act (ADA)*. The proposed building will be in compliance with the Maryland Emergency Management Agency (MEMA) Emergency Shelter Compliance Procedure as required under the *Code of Maryland Regulations (COMAR)*.

Project Information (continued)

Building Design (continued)

Mechanical Systems

The heating and cooling system for the school will consist of a variable refrigerant flow (VRF) system with water-cooled condensing units. The mechanical infrastructure to support the system's condensing units will include gas-fired condensing boilers, a cooling tower, cooling tower distribution pumps, loop distribution pumps, and a plate-and-frame heat exchanger. Ceiling cassette type VRF terminals will provide heating and cooling for the classroom and administration areas throughout the school.

Conditioned outdoor air for the classroom and administration areas will be supplied by a series of rooftop dedicated outdoor air systems, complete with indirectly gas-fired furnaces for heating, direct expansion cooling, and energy recovery for pre-conditioning and tempering of the outdoor air. Airflow supplied from these dedicated outdoor air units will be dehumidified, conditioned, and delivered directly to each space at a room neutral temperature.

Rooftop heat pump units will provide space conditioning and ventilation airflow for the multipurpose room and gymnasium area. Data/IT closets throughout the school will be cooled through individual ductless split type air-conditioning units with low ambient cooling operation.

Automatic temperature controls will be direct digital type controls (DDC). Control system components will be interfaced with the central MCPS energy management control system for remote monitoring and energy management routines.

The HVAC design shall be compliant with the latest applicable codes, and the current Montgomery County Public Schools facilities design standards.

Plumbing System:

The storm sewer, sanitary sewer and domestic water systems will be provided in accordance with the latest Washington Suburban Sanitary Commission (WSSC) plumbing codes and regulations. A combination fire/water service will extend to serve the proposed elementary school. A gas-fired condensing type water heater will generate domestic hot water for the school. The domestic hot water system will be complete with a circulation pump, an expansion tank, and a thermostatic mixing valve. A natural gas service from Washington Gas will be provided. This gas service will be positioned outdoors and located adjacent to the main mechanical room.

Project Information (continued)

New plumbing fixtures will be designed to meet the *Americans with Disabilities Act (ADA)* and utilize water conservation features. Floor-mounted water closets will utilize dual-flush type valves, capable of providing either 1.6 or 1.0 gallons per flush. Urinals will be wall-hung and provided with pint flush valves. Wall-hung cast-iron lavatories will utilize self-closing faucets that supply 0.5 gallons per minute. The water consumption figures noted are equal to or less than what is required by both the current plumbing code for promoting good water conservation practices.

Fire Protection System:

The entire school will be fully-sprinklered throughout with a wet-pipe sprinkler system in accordance with the National Fire Protection Association (NFPA) Standard 13. The sprinkler system will be separated into multiple zones that will align the building's fire alarm pull zones. A fire detection and alarm control panel with voice evacuation will serve initiation devices (smoke detectors and manual pull stations) and notification devices (fire alarm speakers and strobes). Fire alarm annunciator panel with graphic display will be provided at the main building entrance.

Energy Management Statement:

A primary design factor is the conservation of energy. The importance and consideration placed on energy conservation are reflected in the configuration and orientation of the building, the selection of materials, and the mechanical/electrical systems utilized. In addition, a direct digital automatic temperature control system will be provided to monitor and control all new HVAC equipment from a central building management system. The building will be designed to exceed ASHRAE 90.1-2010 energy requirements and International Building Code (IBC), Basic Energy Conservation codes as well as Montgomery County energy conservation codes. The design will incorporate the ANSI/ASHRAE Energy Efficient Design for new buildings.

Electrical Systems

Power Distribution System:

There will be a 2000-ampere, 277/480-volt main switchboard serving panelboards and transformers in the main electrical room and electrical closets throughout the school. There will be panelboards for mechanical, lighting, emergency lighting, receptacle, and generator standby loads.

Project Information (continued)

Building Design (continued)

Generator Power System:

There will be an onsite outdoor 125-kW natural-gas generator to serve life-safety and standby loads via automatic transfer switches. Life safety loads include emergency egress lighting, exit lights, and fire alarm equipment. Standby loads include teacher station receptacles, telecom room receptacles, kitchen freezer and cooler, energy management system (EMS) panels, elevator cab, sumps pumps, smoke dampers, and heaters/heat trace for rooftop units.

Lighting and Lighting Control Systems:

Energy-efficient light emitting-diode (LED) lighting will be provided throughout. MCPS standard classroom lighting will be provided, which will have lighting relay room controllers, lighting control stations (switches), and ceiling sensors to control lighting fixtures and provide multiple levels of lighting. Emergency lighting will be automatically switched ON during a power outage.

Exterior Lighting:

Exterior lighting will utilize light emitting-diode (LED) lighting fixtures and will be designed to shield adjacent residences from intrusive glare while maintaining light levels for safety and security purposes. The lighting fixtures will be full cutoff with no uplight to minimize light pollution into the night sky. There will be building mounted lighting around the perimeter of the proposed building addition. Wall-mounted fixtures will be designed to shield adjacent residences from intrusive glare while maintaining light levels for safety and security.

Intercom and Sound Systems:

Intercommunications/public address system devices include speakers and call switches. Stand-alone sound reinforcement systems will be provided in the gymnasium, multipurpose room, and music rooms per MCPS standards.

Communications and Security Systems:

School will have communications (data and voice) systems including wireless access points throughout for Wi-Fi. Provisions for audio/visual systems for instructional technology will be provided. Security systems will include door access control (card readers), intrusion detection (keypads and motion detectors), and video surveillance (cameras). Distributed antenna system will be provided for public safety radio for first responders.

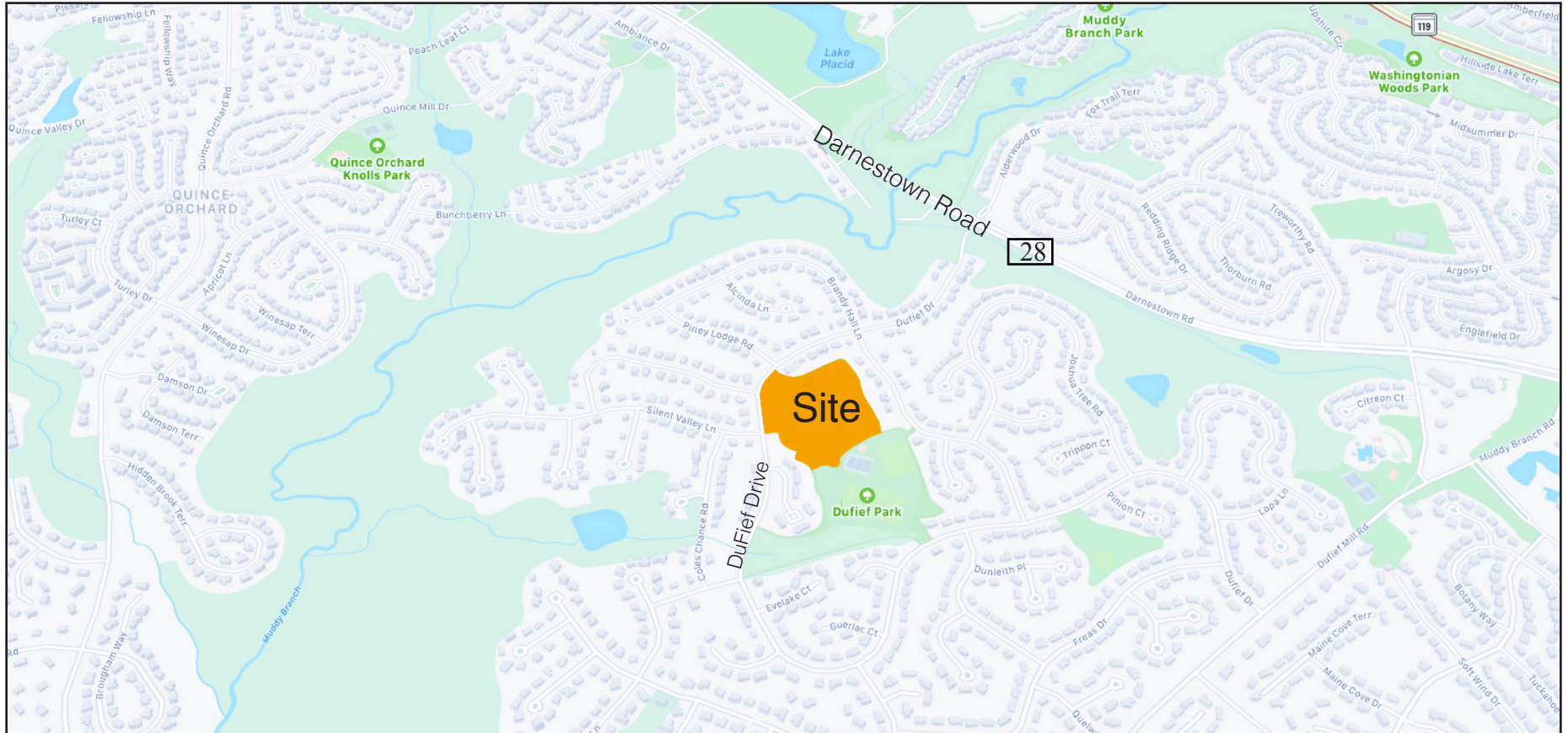
Project Information (continued)

Sustainability

The proposed project will be designed with an emphasis on environmental sustainability. The architecture and engineering systems will align with facility management sustainability principals to ensure long term operational effectiveness. The project will be certified with Green Globes at a Two Globe level and meet the *2018 International Green Construction Code (IgCC)*. Key features related to sustainability include the following:

- **High Performance Building Envelope:** High performance insulation and glazing will be utilized to address heat gain and loss through the building envelope. In addition, a light colored roof will be designed to reduce solar heat gain.
- **Daylighting:** The building envelope will include low-e double pane windows providing natural light and views from all teaching spaces.
- **High Efficiency LED Lighting with Occupancy Based Controls:** Sustainable lighting control design in a typical classroom includes low voltage switches and occupancy sensors.
- **High Efficiency Heating, Ventilation and Air Conditioning (HVAC) Equipment:** High efficiency HVAC equipment will be utilized to provide for occupant and thermal comfort within the building at reduced energy consumption.
- **Occupancy and CO2 Demand Control Ventilation:** Carbon Dioxide sensors will be utilized for high occupant density spaces to reduce the quantity of outside air used when the spaces are not fully occupied. This will limit the amount of energy used to heat and cool large spaces, like the gymnasium, while they are unused.
- **Recycled Materials:** Where the use is appropriate, recycled materials will be specified and used for the construction of the building.
- **Construction and Demolition Waste Management:** A plan to divert the construction and demolition material from landfills and incinerators will be implemented during construction.
- **Stormwater Treatment:** Stormwater management facilities will be implemented into the design to address stormwater runoff from new impervious surfaces. These facilities reduce strain on public storm sewers, help the health of local waterways, and combat erosion and flooding concerns during significant storm events.

Vicinity Map

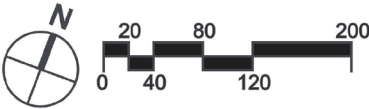


Existing Site Plan



LEGEND

- 1 EXISTING BUILDING
- 2 MAIN BUILDING ENTRANCE
- 3 BUS LOOP
- 4 SERVICE AREA
- 5 PAVED PLAY AREA
- 6 MULCHED PLAY AREAS
- 7 ATHLETIC FIELDS
- 8 RELOCATABLE CLASSROOM
- 9 PARKING

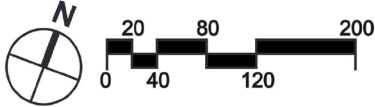


Proposed Site Plan



LEGEND

- 1 REPLACEMENT BUILDING
- 2 MAIN BUILDING ENTRANCE
- 3 BUS LOOP
- 4 SERVICE AREA
- 5 STUDENT DROP-OFF
- 6 PAVED PLAY AREA
- 7 MULCHED PLAY AREA
- 8 KINDERGARTEN PAVED PLAY AREA
- 9 KINDERGARTEN MULCHED PLAY AREA
- 10 PRE-K PLAY AREAS
- 11 ATHLETIC FIELDS
- 12 FUTURE RELOCATABLE CLASSROOMS
- 13 PARKING
- 14 COURTYARD



This page is intentionally left blank

Proposed Elevations



WEST ELEVATION



NORTH ELEVATION

Proposed Elevations



EAST ELEVATION



SOUTH ELEVATION

Proposed Elevations



Project Team, Schedule, and Estimated Construction Cost

Design Team Members

| | |
|---------------------|-------------------------------|
| Architect | WMCRP Architects |
| Civil Engineer | Clark Azar Associates, Inc. |
| Structural Engineer | Structural Engineering Group |
| MEP Engineering | James Posey Associates |
| Traffic Consultant | Symmetra Design |
| Forest Conservation | Norton Land Design |

Project Schedule

| | | |
|----------------------------------|---------|------|
| Preliminary Plans Presentation | January | 2020 |
| Construction Documents Completed | June | 2020 |
| Award Construction Contract | January | 2021 |
| Project Completed | August | 2022 |

Estimated Construction Costs

| | | |
|--------------------|-------------------------|----------------------------|
| Existing Building: | Existing | 59,013 square feet |
| | Demolition | 59,013 square feet |
| | <u>New Construction</u> | <u>103,166 square feet</u> |
| | Total | 103,166 square feet |

| | |
|-----------------------------|--------------|
| Construction Cost Estimate: | |
| Building and Site | \$29,925,000 |

