

Baltimore County Public Schools

Magnet Schools Assistance Program Grant Application (2017–2022)

Program Narrative

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COMPETITIVE PRIORITIES

COMPETITIVE PREFERENCE PRIORITY 1: NEED FOR ASSISTANCE

(a) The Secretary evaluates the applicant's need for assistance under this part, by considering the costs of fully implementing the magnet schools project as proposed.

Baltimore County is the third largest county in Maryland, spanning almost 700 square miles that form a horseshoe shape to the west, north, and east of the city of Baltimore. The County is home to more than 800,000 residents who live in a diversity of urban, suburban, and rural communities. Baltimore County Public Schools (BCPS), the county's sole local educational agency, serves more than 112,000 students in grades prekindergarten through 12 in 173 schools, centers, and programs—making it the nation's 25th largest school system. The student population is diverse: 40.0% of students are White, 38.9% are African American, 8.9% are Hispanic/Latino, 7.1% are Asian, 4.6% are multi-racial, and less than 1% is either American Indian or Pacific Islander. Almost half of BCPS students (45.1%) are eligible for free and reduced price meals (FARMS) and 11.7% receive special education services. BCPS students represent more than 108 countries and speak 85 languages; 4.5% of students are English language learners (ELLs).

BCPS is requesting a five-year grant in the amount of \$15,000,000 from the Magnet Schools Assistance Program (MSAP) to develop five new and significantly revise one whole-school magnet programs in schools that are currently experiencing minority group isolation (MGI) among African American students. Three magnet programs on the west side of the County will serve to create a K-12 International Baccalaureate (IB) magnet pathway with a thematic focus on global studies; two programs on the east side of the County will create a 6-12 Health Science pathway; and one additional east side program will create a 6-12 IB pathway leading into

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BCPS's existing IB program at Kenwood HS. Collectively, the six schools currently serve a total of 4,525 students across grades K-12.

Taken together, we estimate the magnet program activities will cost \$29,915,944 over five years. The requested MSAP grant will cover 51.9% of the total project cost, and BCPS is prepared to commit the remaining 48.1% with in-kind personnel and other resources necessary to support full project implementation over the five years. As such, funding from MSAP is required in order to ensure that all aspects of the whole-school magnet programs are planned, developed, and implemented with an adequate level of resources to make sure that they are effective in meeting the project objectives and have the capacity to be sustained after federal funding ends. MSAP funding will be essential in supporting the following vital components:

- **Creating and implementing high-quality thematic programs that will promote equity and diversity by expanding the high-quality educational options available to BCPS students.** Curriculum development of inquiry- and project-based thematic units of study in the magnet themes will invigorate teaching and learning across the magnet schools for the purpose of improving student academic achievement and provide attractive options for students within and outside of the schools' attendance zones.
- **Executing a comprehensive, multi-pronged outreach and recruitment campaign at the District and school levels to inform families and community members of the new program options,** including in-person events such as the District's Magnet Expo and magnet application meetings, print brochures and informational sheets, magnet websites in multiple languages, advertisements in local print and radio media, extensive social media efforts, community outreach, and presentations in feeder schools.

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- **Designing and providing intensive and ongoing professional development for magnet staff in order to transform teaching and learning across the six schools and improve student achievement** that will build the capacity for the magnet programs to continue effectively after the federal funding period.
- **Establishing and expanding partnerships with business, community, and educational institutions to provide authentic thematic experiences for students and teachers** and bring to life the inquiry- and project-based approaches that will guide classroom implementation of the thematic curricula.
- **Building a strong management and staffing plan to lead the effective development and implementation of the magnet programs and ensure efficient and timely coordination of MSAP resources to achieve the project's objectives** under the direction of the BCPS Office of Magnet Programs (OMP) and facilitated by a Project Director with extensive experience developing and implementing magnet programs.
- **Implementing a comprehensive and rigorous formative and summative evaluation** of the project over its lifespan that will include a well-designed impact study to produce evidence of promise on the effects of the program on student achievement outcomes.

(b) The Secretary evaluates the applicant's need for assistance under this part, by considering the resources available to the applicant to carry out the project if funds under the program were not provided.

In 2016, Maryland's governor reduced the education funding bill adopted by the general assembly by \$68 million which resulted in a \$2.9 reduction for BCPS. In 2017, the state allocation for education funding is expected to decrease even further, by \$1.9 million.

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Additionally, the overall revenue projections for the state have been falling steadily over the past few years and are projected to decrease by \$800 million in FY2018. If these projections become reality, state funding for BCPS may drop even more than expected.

And yet, BCPS remains committed to implementing key strategies that are outlined in its *Blueprint 2.0: Our Way Forward*, the five-year strategic plan for BCPS—many of which require significant financial commitments. For example, the development of personalized learning environments through the expansion of digital learning, implementation of 1:1 technology programs, and creation of digital platforms and software are important, yet expensive investments for BCPS. The resources allocated to these initiatives, as well as other priorities across BCPS, have increased over the past four years. The current operating costs of Students and Teachers Accessing Tomorrow (S.T.A.T.), BCPS's personalized and digital learning initiative, alone are significant—about \$60 million each year. Notwithstanding the importance of these initiatives, the costs have implications for the level of resources that are available for other educational priorities.

At the same time, student enrollment in BCPS has grown 6.1% from 2011–12 to 2016–17, and is expected to grow by another 4% in the next five years. Some student populations that require the most intensive supports are growing faster than the total student enrollment; for example, the proportion of students with multiple disabilities has increased 19.4% and of ELLs has increased 37.7% over the past five years (BCPS FY18 Proposed Operating Budget). The growth in high-need populations has required significant increases in budget allocations to support instructional positions and additional resources for these groups.

Thus, while it is evident that BCPS is strongly committed to the principles of equity and

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excellence outlined in the MSAP Statute, the District requires additional financial supports in order to develop whole-school magnet programs that will advance and sustain these goals. Taken together, the magnet programs will impact close to 4,600 students each year and will enhance options available for families across our County.

(c) The Secretary evaluates the applicant's need for assistance under this part, by considering the extent to which the costs of the project exceed the applicant's resources.

The commitment of Superintendent Dance, accompanied by the Board of Education's approval of amendments to the BCPS's Voluntary Desegregation Plan to reduce or eliminate MGI in each of the six proposed magnet schools, is evident. And yet, the costs of fully implementing the BCPS magnet initiative as designed will exceed available resources. Given the budgeting priorities outlined in the Superintendent's budget to support the initiatives required to bring the goals of the *Blueprint 2.0* to fruition and the current fiscal climate within Baltimore County, BCPS would be challenged to implement the magnet program as designed without support from the MSAP grant. Importantly, the incremental per pupil expenditure associated with the implementation of the magnet program is more than \$600 in excess of the standard per capita allocation per student.

(d) The Secretary evaluates the applicant's need for assistance under this part, by considering the difficulty of effectively carrying out the approved plan and the project for which assistance is sought, including consideration of how the design of the magnet schools project—e.g., the type of program proposed, the location of the magnet school within the LEA—impacts on the applicant's ability to successfully carry out the approved plan.

Each of the six targeted schools, as highlighted earlier in this section, currently experiences

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MGI among African American students. Data from identified magnet feeder schools and non-public schools that are located in close proximity to the proposed magnet schools indicate that attracting a more diverse student population to support reduction or elimination in MGI is both achievable and reasonable for each of the schools. The comprehensive magnet programs that have been designed to attract new students and promote equitable access among the school's current student populations to high-quality, whole school programs require a level of funding that cannot be provided solely through local funding sources. As stated earlier, BCPS has committed to providing 48.1% of the total cost of implementation, but requires support from MSAP for the remaining 51.9%.

BCPS's proposed magnet initiative includes a comprehensive plan that will attract a more diverse population of families to the six magnet schools, thus reducing minority-group and socioeconomic integration and improving student achievement levels. Support from the MSAP is critical in order to ensure that all aspects of the whole-school magnet programs are planned, developed, and implemented with rigor and fidelity, that they are effective in meeting the project objectives, and that they have the capacity to be sustained after federal funding ends.

COMPETITIVE PRIORITY #2: NEW AND REVISED MAGNET SCHOOLS PROJECTS AND STRENGTH OF EVIDENCE TO SUPPORT PROPOSED PROJECTS

The Secretary determines the extent to which the applicant proposes to carry out a new evidence-based (as defined in this notice) magnet school program or significantly revise an existing magnet school program using evidence-based methods and practices, as available, or replicate an existing magnet school program that has a demonstrated record of success in increasing student academic achievement and reducing isolation of minority groups.

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With support provided from the MSAP, BCPS is proposing to develop five new magnet programs and significantly revise one existing magnet program. New whole-school IB programs will be created at Woodmoor ES, Windsor Mill MS, Middle River MS, and New Town HS; a new whole-school health science magnet will be created at Golden Ring MS; and a whole-school health science magnet will replace the existing magnet program-within-a-school at Overlea HS. The nature and significance of the magnet programs, and the rationale for the significant revision, are described in Table 6 in the Attachments.

Professional development (PD) is an essential component of the BCPS magnet initiative and will be fundamental to achieving the project objectives, and specifically the goal to build capacity within the magnet schools to provide rigorous, theme-based instructional programs. Through the magnet initiative, BCPS will provide PD using two models that research has shown to be effective in improving student achievement: IB and Discovery Education. As described in citation 1, there is strong evidence that IB has produced positive and statistically significant improvement on student academic outcomes. Citation 2 describes the high quality research findings and promising evidence for the impact of the Discovery Education model on student achievement. The significance of these two models in the BCPS magnet initiative is further described in the Quality of Project Design and outlined in the project logic model.

Citation 1: (Included in Attachments)

Coca, V.; Johnson, D.; Kelley-Kemple, T.; Roderick, M.; Moeller, E.; Williams, N; and Moragne, K. (2012). Working to My Potential: The Postsecondary Experiences of CPS Students in the International Baccalaureate Diploma Programme. University of Chicago Consortium on Chicago School Research.

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Across all six magnet programs, BCPS will provide extensive PD from the International Baccalaureate Organisation (IBO) to support the development and implementation of inquiry-based curriculum units of study. In the whole-school IB magnet programs, IB curricula and practices will be implemented in all content areas. The two health sciences programs will benefit from training specific to IB Diploma (DP) and Middle Years Programme (MYP) components that focus on health sciences, sports sciences, and biological sciences. There is strong evidence in academic research that the IB program has positive impacts on student learning outcomes, including preparing students for success in college and careers. IB will be a critical component in the project design across all six schools and will be implemented through PD and thematic curricula to achieve the goals and objectives of the MSAP to increase student achievement and college and career readiness.

Citation Outcomes: This study found that students who participated in the IB DP were statistically more likely than a matched comparison group (selected using a two-stage propensity score matching process) to attend a four-year college. The data showed that 77.2% of the IB DP cohort attended a four-year college, compared with 53.3% of the matched comparison group, a difference that was statistically significant ($p < .01$).

The proposed BCPS magnet programs will use IB instructional strategies and curriculum materials to support improved academic achievement among all students and prepare them for college and beyond. These outcomes will be measured using state standardized assessment scores aligned with college and career readiness standards. Outcomes related to postsecondary attainment will be tracked using data from the high school guidance offices. Students in the IB DP at New Town HS will be eligible to receive an IB diploma (as evidenced in letters of

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support), which can earn students college credits at many local colleges and universities.

Relevance to Proposed Project: The intervention used in the study is the IB DP. The IB DP consists of coursework in six courses across core subject areas that are taken over two years for a total of 12 high school credits. The program has three core requirements: theory of knowledge IB course, extended essay, and service learning project.

The BCPS magnet initiative will implement the IB DP (using the same core courses and IB requirements as presented in the study) at New Town HS, which will be open to all New Town HS students. The magnet initiative will also create IB Primary Years Programme (PYP) and MYP at four schools to prepare students for the DP at New Town HS. The IB framework will also guide the development of health sciences coursework at Golden Ring MS and Overlea HS, which will be available to all students at each of these schools. As described in the Quality of Project Design, IB offers MYP and DP science coursework focused on health and sports sciences. These coursework frameworks will be integrated into the health sciences magnet programs to provide access to rigorous IB-level thematic instruction, in addition to the interdisciplinary units and new electives. Furthermore, the student outcomes measured in the study, state assessments and postsecondary enrollment data, be also be collected and analyzed for the project evaluation and by program staff to measure the impact of IB on student outcomes.

Citation 2: (included in Attachments)

Leow, C. (2013) Gaining Ground in Science Achievement: Impact of the Discovery Education Digital Curriculum Alignment Strategy in Miami-Dade Title I Public Schools 2010–2012. Leow Research, Philadelphia, PA.

BCPS will also provide extensive PD in the two health sciences magnet programs from

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Discovery Education. There is promising evidence and a growing body of research that PD and curriculum resources provided by Discovery Education have positive effects on students' science achievement—a relevant outcome for the BCPS magnet initiative, specifically in the new health science and biomedical technology programs. Discovery Education is a national learning organization that works with school districts to integrate innovative instructional approaches and learning technologies into instruction across all content areas with primary focuses on math and science. For the five years of the grant, BCPS will partner with Discovery Education to provide rigorous and job-embedded professional learning for school leaders and teachers to build capacity in the areas of innovative instructional practices and project-based learning. PD will include training and coaching sessions and job-embedded instructional support in a lab environment.

Citation Outcomes: The study examined the impact of Discovery Education PD and instructional resources on all Title I schools in Miami-Dade County Public Schools from 2010 to 2012. Since all Title I school received the intervention, a randomized control trial was not possible. Thus, researchers used propensity score matching to identify a statistically similar group of Title I schools across the state of Florida who did not use Discovery Education services to measure the effect on science achievement scores for 5th and 8th grade students—the grade levels in which the Florida Comprehensive Achievement Test (FCAT) in science was administered. Researchers conducted t-tests to determine baseline equivalence of the pre-test scores of the two groups, and used similar analyses to assess post-intervention differences. The study found the scores of 8th grade students in the treatment schools (Discovery Education schools) increased by 8.7 points over the study period and that scores of 8th grade treatment

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students exceeded scores of comparison student by 6.7 points, a difference that was statistically significant ($p < .01$).

The proposed BCPS magnet programs will use Discovery Education to provide PD related to science instruction. Outcomes for this intervention will be measured using student scores on Maryland Integrated Science Assessment (MISA) for students in grades 5 and 8, and the End-of-Course (EOC) Assessment in Biology for high school. These standardized test measures are similar to those used in the cited study (FCAT).

Relevance to Proposed Project: The intervention assessed in the study was PD provided by Discovery Education to Title I schools in Miami-Dade County Public Schools to transform science instruction with the goal of improving student achievement in science. The PD included workshops and sessions to build teacher capacity to integrate innovative technologies into science instruction, as well as job-embedded coaching and modeling.

As evidenced in the logic models, the BCPS magnet initiative will implement the Discovery Education model in the two proposed health science/biomedical technology magnet programs to build teacher knowledge and skills in using digital content and formats and to expand project-based learning opportunities into core content instruction. The PD will be designed to improve student learning across subject areas, including science content and the process skills embedded in the magnet thematic curriculum. Through the project evaluation, student achievement in science will be assessed using student scores on the MISA that is administered annually to students in grades 5 and 8 and the EOC in Biology for high school. Scores will be analyzed over the five-year grant period to measure growth in science outcomes among the cohorts of students in the school-wide magnet programs each year. Similar to the cited study, BCPS will implement

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PD from Discovery Education as a means to increase teacher knowledge and skills in using innovative and digital curriculum materials and instructional strategies to provide engaging science instruction; and as result, students will demonstrate improved science outcomes as measured by standardized test scores.

COMPETITIVE PRIORITY #3: SELECTION OF STUDENTS

The Secretary determines the extent to which the applicant proposes to select students to attend magnet schools by methods such as lottery, rather than through academic examination.

As outlined in Table 5 in the Attachments, BCPS will develop whole-school magnet programs in six schools that serve geographic attendance zones. All students who reside within the attendance zones of the schools will gain automatic admission into the magnet programs. BCPS students who reside outside of the attendance zone will be eligible to apply and will be selected using a random lottery process. Academic criteria will **not** be a factor in the admission process for students who reside within the attendance zone OR in the random lottery process for applicants who reside outside of the attendance zone.

For each of the six magnet schools, in the event that the number of applicants is less than the number of available seats, all applicants will be granted admission. In the event that the number of applicants exceeds the number of available seats, the following process will be used for Golden Ring, Windsor Mill and Middle River MS, and for Overlea and Newtown HS:

1. Available seats will be filled with students whose parents are BCPS employees whose work site is the magnet school;
2. A random lottery will be conducted to fill all remaining available seats and to generate a wait list; and

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3. Wait-list students will be assigned a wait list number that corresponds to their placement in the wait list. If a student who is offered a seat declines the offer, that seat will be offered to wait-listed students in ascending order of their wait list number, beginning with the student who has wait list #1. Seats will be offered to wait-listed students until all available seats have been filled or the wait list is exhausted.

For Woodmoor ES, there will also be a priority for siblings, thus the process will be:

1. Available kindergarten seats will first be filled with students who have an older sibling who is attending Woodmoor ES and who will continue to attend the school the following year
2. Same as #1 above (child of employee priority)
3. Same as #2 above (random lottery)
4. Same #3 above (wait list)

COMPETITIVE PRIORITY #4: INCREASING RACIAL INTEGRATION AND SES DIVERSITY

The Secretary determines the extent to which the applicant proposes to increase racial integration by taking into account socioeconomic diversity in designing and implementing magnet school programs.

Numerous studies show a close relationship between socioeconomic status (SES) and racial/ethnic background, suggesting that efforts to integrate schools by SES can have implications for racial diversity, and by extension, the resulting academic outcomes as well (Mickelson, 2016). According to the National Center for Education Statistics, the percent of children living in poverty varies systematically by racial/ethnic group. For example, while 38% of African American children and 30% of Hispanic/Latino children were living in poverty in

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2013, only 10% of White and Asian students were living in poverty that same year (Musu-Gillette, 2016). The patterns are intensified when examined at the school level. In 2014, 42% of students of color attended a high-poverty school compared to only 8% of white students (PolicyLink/PERE, National Equity Atlas, 2014).

Research findings demonstrate a strong relationship between racially-integrated schools and academic performance in core subject areas such as reading, mathematics, and science. After controlling for individual and family background, attendance at a racially-diverse school is found to be positively correlated with increases in academic exam scores. A February 2016 report by The Century Foundation found that “attending racially diverse schools is beneficial to *all* students and is associated with smaller test score gaps between students of different racial backgrounds, not because White student achievement declined, but rather that Black and/or Hispanic student achievement increased” (Wells, et al., 2016).

Research also points to the substantial impact of economic desegregation—separate from and in addition to racial/ethnic integration—on student achievement. Recent large-scale studies show a strong correlation between a school’s concentration of poverty and lower levels of student achievement (Poverty & Race Research Action Council, undated). More specifically, low-income students who attend schools with middle-class peers achieve significantly higher academic outcomes than low-income students who are enrolled in schools with concentrated poverty. In fact, at least one study suggests that the overall SES composition of a school has a greater impact on student achievement than an individual’s familial economic background (Kallenberg, 2013).

Finally, attendance at a racial and socioeconomically integrated school also results in higher

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gains in 21st century skills and resulting outcomes. Students attending a diverse school, for example, are more likely to enter STEM career fields and are more likely to have higher occupational and income attainment, in part due to their increased capacity for critical thinking, collaboration, and interpersonal competence (Mickelson, 2016; Partnership for 21st Century Learning, 2016; Professional Learning Exchange, 2008). It is worth highlighting that these interpersonal competencies accrue not only to students of color, but to the white students attending diverse schools as well. According to the National Coalition on School Diversity, “the complex, more flexible thinking that white students develop from these exchanges [that take place in diverse schools] is an essential academic benefit flowing from diverse classrooms” (Siegel-Hawley, 2012 p. 2).

The correlation between race/ethnicity and socioeconomic status highlighted in the aforementioned research is a reality that BCPS struggles with and is seeking to address with the proposed magnet initiative. Demographic data for all students in BCPS (presented in Table 1) show that African American and Hispanic students in BCPS are more likely to have low SES, as measured in the District by eligibility for FARMS, than other students.

Specifically, as shown in the table, 59.6% of African American students and 62.5% of Hispanic students in BCPS are eligible for FARMS—rates that are more than 15 percentage points higher than the District average (44.5%). Furthermore, these disparities are observed within each geographic area of the county—including the areas in which the proposed magnet schools are located (Northeast, Northwest, and Southwest).

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Table 1: Percentage of Students by Race/Ethnicity and Eligibility for FARMS

	BCPS		Southwest		Northwest		Northeast	
Race/Ethnicity	Enrollment	FARMS	Enrollment	FARMS	Enrollment	FARMS	Enrollment	FARMS
			N	%			N	%
All Students	112,139	44.5%	21,358	53.2%	23,779	46.3%	25,447	43.9%
Asian	7,909	39.7%	2,101	65.1%	1,175	33.1%	2,234	33.3%
Black or African American	43,579	59.6%	10,048	61.7%	15,467	53.2%	8,489	62.1%
White	44,904	26.1%	6,115	29.9%	4,022	16.7%	11,529	29.1%
Hispanic/Latino	9,934	62.5%	2,095	68.2%	2,177	60.3%	1,880	62.1%
Other	5,813	50.3%	999	54.8%	938	44.0%	1,315	48.2%

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In all decisions related to the siting of schools and special programs, including magnet programs, BCPS takes students' SES and MGI into consideration. In planning for the 2017–2022 MSAP grant, the District planning team also considered SES in the strategic siting of the proposed magnet programs as a means to achieve the goal of reducing MGI. All six of the proposed schools (as shown in Table 2) have MGI among African American students; five of the six schools have proportions of students who are eligible for FARMS that are higher than the District average. The proposed magnet schools mirror the pattern observed across the District showing the intersection of race and SES. These schools were selected with the goal that by reducing MGI, the schools would also achieve greater socioeconomic integration.

Table 2: Proportion of African American and Eligible for FARMS in Magnet Schools

School	Total Enrollment	African American N (%)	FARMS N (%)
Woodmoor ES	531	482 (90.8%)	454(75.3%)
Golden Ring MS	684	428 (62.6%)	452 (66.1%)
Middle River MS	825	348 (42.1%)	528 (64.0%)
Windsor Mill River MS	495	452 (91.3%)	305 (61.6%)
Overlea HS	954	647 (67.8%)	520 (54.5%)
New Town HS	1,036	945 (91.2%)	431 (41.6%)
District Total	112,139	43,579 (38.9%)	49925 (44.5%)

Source: BCPS Student Enrollment Counts (Oct. 1, 2016)

All six schools are also located in areas that are more racially, ethnically, and socioeconomically diverse than their student populations. In planning for the grant, the District

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conducted a comprehensive analysis of student enrollment and demographic data for BCPS schools located in close proximity to each magnet school to identify schools from which a racially, ethnically, and socioeconomically diverse population of students could effectively be attracted. Using these data, the team identified feeder schools for each proposed magnet school with proportions of African American students that are lower than the District average (Table 3) and a number of schools that also had lower proportions of FARMS eligible students. The feeder schools identified to support reduction in MGI and socioeconomic integration are presented in the following table.

Table 3: Magnet Feeder Schools and Proportions of African American (AA) and FARMS Eligible Students (2016–17)

	School	% AA	% FARMS	School	% AA	% FARMS
Magnet	Woodmoor ES	89.7%	75.3%	Windsor Mill MS	91.3%	61.6%
Feeder Schools	Arbutus ES	8.2%	54.8%	Arbutus MS	16.6%	44.1%
				Catonsville MS	19.4%	25.6%
Magnet	Golden Ring MS	62.6%	66.1%	Middle River MS	42.2%	64.0%
Feeder Schools	Dundalk MS	30.5%	55.8%	Dundalk MS	30.5%	55.8%
	Perry Hall MS	22.2%	27.3%	Perry Hall MS	22.2%	27.3%
Magnet	New Town HS	91.2%	41.6%	Overlea HS	68.8%	54.5%
Feeder Schools	Catonsville HS	27.9%	26.2%	Dundalk HS	25.2%	48.6%
	Franklin HS	41.3%	29.8%			

Source: BCPS Student Enrollment Counts (Oct. 1, 2016)

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Thus, by the strategic siting of the proposed magnet programs in schools that have both MGI and high rates of FARMS and in neighborhoods within the county that are more diverse than the student populations of the schools, BCPS is considering socioeconomic integration in its proposed strategy to reduce MGI.

SELECTION CRITERIA

(a) Desegregation

The Secretary reviews each application to determine the quality of desegregation-related activities.

BCPS History of Magnet Programs

BCPS has a long-standing commitment to diversity and equity as evidenced in Board Equity Policy 0100 which guides the system's efforts to provide all BCPS students with a high-quality education, help all students achieve rigorous academic achievement levels, and help to eliminate disparities or barriers that may impede student success. In the pursuit of equity and excellence, BCPS has offered magnet programs since 1993 as a strategy to provide enhanced innovative and high-quality educational options for students of all backgrounds and promote diversity within schools as part of the District's voluntary desegregation plan.

The magnet programs were originally created as a component of the District's *Great Expectations for 2000: Shaping the Vision* strategic plan. From 1993 to 1995, BCPS opened 16 magnet schools with support provided by funding from the MSAP and created plans for opening 10 more programs using local funding. In 2004, in response to findings from a 2002 comprehensive audit of the District's magnet programs that highlighted a need for expanding programs and developing K-12 magnet pathways, BCPS again applied for and received a MSAP

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grant. Since then, BCPS has maintained each of the magnet programs established under the two previous MSAP grants. BCPS currently offers more than 110 magnet programs in a wide variety of themes, including STEAM, language immersion, arts, communications, engineering, and information technology that are located in six elementary, nine middle, and 15 high schools.

In July 2012, S. Dallas Dance became superintendent of BCPS. Dr. Dance brought with him a strong commitment to equity and diversity, which is evidenced throughout BCPS's *Blueprint 2.0: Our Way Forward*, the five-year strategic plan for BCPS that was developed under his leadership. Aligned with his focus on equity, one of Dr. Dance's first initiatives as Superintendent was organizing five community forums across the county to collect feedback from parents and community members about magnet programs. These forums were facilitated in the fall of 2012 and produced the recommendation that the District conduct a comprehensive audit of magnet programs to provide data and recommendations for enhancing equity of access to and delivery of magnet educational opportunities within BCPS.

In 2013 the audit was conducted by an external evaluator who provided a number of recommendations including to: expand opportunities for vertical pathways for magnet themes; secure new resources to enhance and enrich the District's magnet offerings; and determine the appropriate placement and equal distribution of magnet program options in the east, west, and central areas of the county—all of which fell under one overarching recommendation to create a Magnet Task Force with representation from District and school leaders, teachers, and community members to initiate a strategic planning process.¹

¹ Results of the audit are found at:

<http://www.bcps.org/schools/magnet/BCPS-Magnet-Audit-Final-Report-111913-FINAL.pdf>.

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In 2014, the BCPS Magnet Task Force convened and developed a five-year strategic plan for magnet programs, which highlighted five goals: 1) develop a system-wide portfolio of equally-accessible magnet programs; 2) provide greater access to magnet program information for all segments of the BCPS community; 3) ensure a fair and equitable admissions process for all magnet programs; 4) provide effective administration of magnet programs; and 5) establish rigorous curriculum and instructional standards for all magnet programs. To support progress toward achieving these goals, the Magnet Task Force recommended BCPS pursue funding under the MSAP to expand BCPS magnet programs. BCPS's new magnet initiative addresses the recommendations of the magnet audit and Task Force by proposing to create three new vertical magnet pathways in the west and east areas of the county to increase equity of access and promote diversity in schools that are experiencing minority group and socioeconomic isolation.

(1) The Secretary determines the extent to which the applicant demonstrates the effectiveness of its plan to recruit students from different social, economic, ethnic, and racial backgrounds into the magnet schools.

BCPS views magnet schools as a critical systemic tool for achieving the dual goal of equity and excellence. As confirmed by the March 21, 2017 resolution to approve an amended voluntary desegregation to *expand magnet programming in six BCPS schools that are proposed in this application, the Board "believes it is in the best interest of its students to promote diversity within its schools and to give all students the opportunity to learn in an environment that reflects our pluralistic society."* The amended voluntary desegregation plan and approved Board resolution are included in the Attachments. In the plan, the Board identifies that notwithstanding the District's past efforts to promote diversity, there remain schools, including

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the proposed magnet schools that experience MGI, defined in the plan as “schools in which the proportion of one or more racial/ethnic student groups exceeds the system-wide average.”

All six of the proposed magnet schools experience MGI among African American students according to the District’s definition. In five schools, the proportion of African American students exceeds the District average by more than 15 percentage points; at the remaining school, it exceeds the average by just over three points, so the MSAP will help eliminate MGI at that school. The proposed schools and the proportion of African American students and those eligible for FARMS are listed in Table 4.

Table 4: Minority Group and Socioeconomic Isolation in Proposed Magnets (2016–17)

School	Total Enrollment	African American N (%)	FARMS N (%)
Woodmoor ES	531	482 (90.8%)	454 (75.3%)
Golden Ring MS	684	428 (62.6%)	452 (66.1%)
Middle River MS	825	348 (42.2%)	528 (64.0%)
Windsor Mill River MS	495	452 (91.3%)	305 (61.6%)
Overlea HS	954	647 (67.8%)	520 (54.5%)
New Town HS	1036	945 (91.2%)	431 (41.6%)
District Total	112,139	43,579 (38.9%)	49,925 (44.5%)

Source: BCPS Student Enrollment Counts (Oct. 1, 2016)

The magnet initiative will be effective in reducing or eliminating MGI in the target magnet schools by recruiting a diverse population of students from different social, economic, ethnic, and racial backgrounds using a multi-faceted approach that includes: 1) development of magnet

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programs with strategically-selected, high-demand themes; 2) identification of magnet feeder schools and non-public schools within close geographic proximity to the magnet schools and with diverse student populations from which to attract students; and 3) an aggressive and targeted marketing outreach strategy.

Strategic selection of magnet themes: The BCPS grant planning team reviewed magnet application data trends, recommendations from the Magnet Task Force, and community survey data gathered during the magnet audit to select two high-demand themes that will prepare students to succeed in college, careers, and industry in the Baltimore County area. Taken together, these data suggested that developing vertical thematic pathways in IB and Health Sciences will address community and industry demand, align with the instructional goals of the District, and promote diversity in schools with MGI.

The new magnet IB programs will create the first K-12 IB pathway in the District, meeting a demand that was articulated by community members in a 2013 survey. According to the community survey responses, 54% of respondents indicated that they would like IB programs to be offered in more locations in BCPS. The survey represented a diverse group of community members, based on race, ethnicity, family income, and geographic location in the County. National research also shows a high demand for IB schools. For example, a 2014 study reported that there are approximately 800 IB schools across the U.S., and that IB's popularity is growing, largely due to its focus on global context and its reputation as a rigorous academic program (U.S. News & World Report, 2014). Furthermore, nearly half of the two- and four-year colleges and universities in Maryland award college credits (up to 30 credit hours) for IB exams and diplomas. As highlighted in the letters of support (see Attachments), many local institutions

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actively recruit BCPS graduates with IB certificates and diplomas. By offering magnet IB programs, BCPS will position its students well to pursue and succeed in postsecondary education, and thus better prepare them for high-demand careers.

The data supporting the selection of the health sciences magnet theme are equally compelling. On the same community survey, 72% of respondents requested that biomedical/health science programs be offered in more locations. Furthermore, BCPS's health science-related magnet programs are currently among the District's most popular programs. In 2016–17, all of the District's existing health science-related programs were significantly oversubscribed—1,476 applications were submitted for only 312 seats. These data suggest the demand greatly exceeds the supply for these programs. This is not surprising given that health science and medical-related occupations currently represent nine of the 15 fastest growing occupations in the Baltimore Metropolitan Area, according to data from the Maryland Department of Labor, Licensing and Regulation (www.dllr.state.md.us/). The area hosts 16 major hospitals and medical centers, is home to renowned medical and teaching institutions, including the University of Maryland Medical Center and Johns Hopkins Bayview Medical Center (JHMBC), and has a rapidly expanding number of physical and mental health clinics and assisted living/senior care facilities. Graduates of BCPS health science programs will have a wide array of future opportunities in the area.

Finally, both of the proposed themes are also directly aligned to the instructional focus of the District's strategic plan and the key initiatives that have been instituted by Superintendent Dance (as described in the Quality of Project Design) to support the District goal to develop globally competitive graduates of BCPS.

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Magnet feeders and non-public schools: The grant planning team also conducted a comprehensive analysis of student enrollment and demographic data for BCPS schools and non-public schools located in close proximity to each magnet school to identify schools from which a racially, ethnically, and socio-economically diverse population of students could effectively be attracted. Using these data, the team identified 3-5 feeder schools for each proposed magnet school with proportions of African American students that are lower than the District average (Table 5).

Table 5: Magnet Feeder Schools and Proportions of African American (AA) and FARMS Eligible Students (2016–17)

	School	% AA	% FARMS	School	% AA	% FARMS
Magnet	Woodmoor ES	89.7%	75.3%	Windsor Mill MS	91.3%	61.6%
Feeder Schools	Halethrope ES	11.8%	69.2%	Arbutus MS	16.6%	44.1%
	Lansdowne ES	23.8%	72.6%	Catonsville MS	19.4%	25.6%
	Arbutus ES	8.2%	54.8%	Lansdowne MS	29.4%	74.4%
	Balt. Highlands	22.9%	76.8%			
Magnet	Golden Ring MS	62.6%	66.1%	Middle River MS	42.2%	64.0%
Feeder Schools	Holabird MS	12.0%	64.8%	Holabird MS	12.0%	64.8%
	Stemmers Run MS	27.3%	63.9%	Stemmers Run MS	27.3%	63.9%
	Gen. J. Stricker MS	18.8%	64.6%	Gen. J. Stricker MS	18.8%	64.6%
	Dundalk MS	30.5%	55.8%	Dundalk MS	30.5%	55.8%
	Perry Hall MS	22.2%	27.3%	Perry Hall MS	22.2%	27.3%

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Magnet	New Town HS	91.2%	41.6%	Overlea HS	68.8%	54.5%
Feeder	Catonsville HS	27.9%	26.2%	Kenwood HS	39.0%	53.7%
Schools	Lansdowne HS	29.1%	54.3%	Patapsco HS	24.7%	51.5%
	Franklin HS	41.3%	29.8%	Dundalk HS	25.2%	48.6%

The planning team also identified non-public schools located within a two-mile radius of each proposed magnet school (four-mile radius for high schools) and used data from the most recent Private School Universe Survey (2013–14) to determine the racial and ethnic composition of students attending those schools. The data showed that for the proposed magnet schools on the west side of the County (Woodmoor ES, Windsor Mill MS, and New Town HS), there were approximately 7,086 students attending non-public schools in the area with a racial/ethnic composition that is 75% White, 12% African American, 5% Asian, 6% Multi-racial, and 2% other ethnicities. Similarly, for the proposed magnet schools on the east side (Golden Ring MS, Middle River MS, and Overlea HS), there were approximately 2,270 students attending non-public schools in the area with a racial/ethnic composition that is 75% White, 11% African American, 6% Asian, 4%, Hispanic, and 4% Multi-racial. These data indicate that there are substantial numbers of students and families who can potentially be attracted to high-quality programs in the new magnet schools, thereby helping to reduce MGI among African American students in the schools. Additionally, the programs will be appealing to families that are currently choosing to take on the cost of a private education for their children because the public school options available to them do not meet their children’s needs.

Aggressive and targeted marketing and outreach: One of the best ways to attract a more

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diverse population of students to the magnet schools is by developing effective and targeted outreach and recruitment strategies. Research suggests that districts should use a comprehensive approach to outreach that includes information centers, direct mailing of literature in multiple languages, and advertisements in a variety of media outlets (Frankenberg & Siegel-Hawley, 2008). Furthermore, when outreach is effective, magnet school choice programs have been successful in achieving greater levels of integration by race/ethnicity as well as level of parental education (Betts et al., 2006). BCPS has developed a multifaceted approach to outreach and recruitment that will include the strategic use of District- and school-level resources to share information about the magnet programs with a diverse group of families and community members through print materials, web-based and virtual promotion, social media, in-person events, community partners, and effective word-of-mouth marketing. Over the past four years, BCPS has seen a 30% increase in the number of applications to magnet programs, from 13,159 in 2013 to 17,164 in 2016. Each year, applicants represent a diverse group—approximately 45% African American, 33% White, 6% Asian, and 5% Hispanic students—which generally reflects the demographic diversity of the BCPS student population. The diversity of the applicant pool will support the District in meeting the goal of reducing MGI in the new magnet schools.

Outreach and recruitment will be a joint responsibility of the MSAP Marketing and Recruitment Supervisor, working under the direction of the Magnet Project Director, and the individual magnet schools. The Marketing and Recruitment Supervisor will work with each school to develop and implement targeted and aggressive outreach and recruitment strategies that reflect the unique characteristics of the community and are fully aligned with MSAP statute and the Office for Civil Rights' guidance on the voluntary use of race.

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BCPS hosts an annual system-wide Magnet Expo, attended by more than 5,000 families each year that allows parents and students to learn about program options, speak to magnet program staff and current students, and explore different program options. The District will develop various school- and program-specific marketing materials (brochures, fliers, posters, web presence, social media presence, mailings, etc.) for the new magnet programs that will be provided in English and six other predominant languages—Arabic, Burmese, Chinese, Spanish, Urdu and Vietnamese—at the Expo and other events. The Marketing and Recruitment Supervisor will work intensively in the school communities to highlight opportunities to build partnerships for marketing with local community organizations. The BCPS Office of Communications and Community Outreach will work with the OMP to develop a marketing plan that will include the creation of informational videos for the MSAP grant schools that can be shared on BCPS TV and to generate news stories that will help to publicize the new program offerings. OMP will collaborate with the BCPS Area Advisory Councils and the Special Education Citizens Advisory Council to distribute information to broad segments of the BCPS community.

School-based recruitment for the magnet schools will be especially important because the students, teachers, administrators, and parents are the individuals who best know the schools and can best advertise them. The full-time, MSAP-funded Site Magnet Coordinator at each school will develop a school-based marketing and outreach plan to build on the activities and strategies that are conducted by the District. Targeted marketing will focus on BCPS families choosing private school options, community service agencies, faith-based organizations, and private daycares and preschools. Open Houses and showcases of student learning will be conducted for

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the families and community members; paper and electronic informational flyers and brochures will be shared with families in neighboring feeder schools; and presentations will be made by magnet staff and students at feeder schools and community events such as block parties and fairs. Furthermore, each school will develop a magnet page on the school’s website to highlight student and teacher achievements in the magnet program and to share information about the magnet theme and resources. Each school will develop a magnet program Facebook page and Twitter account to share information with families in real time. Each school will designate a staff member to act as the Family and Community Engagement (FACE) Liaison. The FACE Liaison will attend PD offerings provided by the BCPS Office of Family and Community Engagement and to schedule the BCPS Parentmobile to conduct outreach in the community and as a resource during school magnet events. The Parentmobile serves as an educational resource center that travels to schools, community events, neighborhoods, and businesses. Parent Services Representatives assist parents and community members in accessing information about BCPS and its schools in order to support learning at home.

Each school also will work with District staff to ensure that they have access to resources to provide verbal and written information about the programs with native speakers of languages other than English. They will work to recruit bi- or multi-lingual staff, parents, and community members to interface with parents so that they feel welcome and understand the information that is shared. A projected timeline of these outreach and marketing activities is presented below.

Table 6: BCPS Annual Marketing Timeline

Month(s)	Activity	Responsibility Center
October	Distribution of magnet applications and brochures,	Marketing and

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Month(s)	Activity	Responsibility Center
	District-wide Magnet Application Meetings and Magnet Expo	Recruitment (MS), OMP
October - November	Individual school-based Magnet Showcase Events and Open Houses, targeted outreach to feeder schools and community events, dissemination of school marketing materials	Magnet Site Coordinators (SC), Principals, and school-based staff
Ongoing	Outreach to local media and social media posts, school tours	MS, SC
November	All magnet applications due	OMP
January - February	Continued dissemination of marketing materials and outreach efforts	MS, SC
March	Mail magnet decision letters	OMP
April - September	Analyze late application data and conduct targeted outreach	PD, MS, SC

(2) The Secretary determines the extent to which applicant demonstrates how it will foster interaction among students of different social, economic, ethnic, and racial backgrounds in classroom activities, extracurricular activities, or other activities in the magnet schools.

The District’s aggressive outreach and recruitment plan, in concert with an equitable, efficient, and race-neutral student selection process (described in the Selection of Students Competitive Preference Priority 3), will ensure that the BCPS magnet schools attract and enroll

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an increasingly diverse population of students and families over the five-year project. However, there is ample evidence to suggest that attracting a diverse student body does not guarantee that, once enrolled in magnet schools, students of different backgrounds will develop positive interactions in the absence of educational and structural strategies known to foster positive intergroup relationships and to support all learners to succeed in the magnet program (Bifulco, Buerger, & Cobb, 2012). Some important strategies identified in the literature for promoting student interaction include implementing a culturally responsive pedagogy and providing opportunities for project-based learning experiences.

Cultural competence refers to the ability to effectively understand, communicate with, and interact with people of different cultures and involves awareness of one's own cultural worldview, attitude towards cultural differences, knowledge of different cultural practices and worldviews, and cross-cultural skills (Ben-Ari & Strier, 2010). Culturally responsive teaching requires awareness of the cultural differences of students and an adjustment in teacher attitude (Colbert, 2010). Suggested strategies for developing cultural competencies in the classroom include building relationships with students and parents, listening empathetically, looking for cultural interpreters in the school or community, and using available resources such as books, articles, files, and audio files (Pratt-Johnson, 2006).

As outlined in the core values of the *Blueprint 2.0*, BCPS “is committed to doing whatever it takes to ensure that every student learns and succeeds, regardless of race, ethnicity, gender, socioeconomic status, language proficiency, or disability,” and the belief that “every student will be successful when provided high expectations and sufficient, appropriate supports.” To achieve these core values, BCPS, through the work of its Office of Equity and Cultural Proficiency

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(ECP), is conducting a multi-year training to build understanding of equity and cultural competence across the District and all schools, including the proposed magnets. ECP developed an equity curriculum that is based on the extensive research presented in “Creating Courageous Conversations: A Field Guide for Achieving Equity in Schools” and is fully aligned with the goals articulated in BCPS’s *Blueprint 2.0* to raise the academic bar and decrease achievement gaps. Training based on the curriculum provides staff with tools to analyze the role and impact of race and ethnicity as they create racial and ethnic disparities in schools and to establish a common vocabulary of excellence that is used for all students regardless of background. The ultimate goal of the work is to build cultural competence across schools and systemically interrupt predicted racial disparities. All six proposed magnet schools are participating in the training. The training will support the magnet programs by building capacity of teachers and staff to provide culturally responsive instruction, helping them better understand how to identify students’ individual strengths as well as cultural identities, and supporting implementation of strategies that foster positive learning environments and interactions among students of different social, economic, ethnic, and racial backgrounds.

Another key strategy for fostering interactions among students that will be implemented across the six magnet program is **project-based learning** (PBL). PBL, in which students learn through research and application, is important in encouraging the development of higher-order thinking skills beyond those used in a typical learning environment as “students learn to work independently and take responsibility when they are asked to make choices. The opportunity to make choices, and to express their learning in their own voice, also helps to increase students’ educational engagement” (Buck Institute for Education, n.d.). By using PBL approaches, the

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magnet program will integrate the intentional use of **cooperative group learning** into classroom instruction as a pedagogical strategy for fostering interactions among students. While definitions of cooperative learning vary, the key components are the deliberate use of group work with the groups composed of students of varying academic achievement levels, backgrounds, or perspectives. Collaborative learning techniques are student-centered and are designed to increase the achievement of all students involved in the activity. In fact, according to the National Coalition on School Diversity, “classrooms [that] are structured around cooperative group learning...help to maximize the benefits of diversity.” According to Slavin and Cooper (1999), “Because cooperative learning groups encourage positive social interaction among students of diverse racial and ethnic backgrounds, they have great potential to facilitate the building of cross-ethnic friendships and to reduce racial stereotyping, discrimination, and prejudice.”

As described in the Quality of Project Design section, PBL and cooperative learning will be key components of the new magnet programs through the development of partnerships with Modern Teacher, i2 Learning, and Discovery Education. Through these partnerships, BCPS will provide extensive PD to support teachers across the six magnet schools to implement PBL approaches to build collaborative learning experiences for all learners. Teachers will work to develop PBL units of study anchored in the BCPS curriculum. Through these units, students will gain skills and competencies in collaboration and communication, critical thinking and problem solving, and creativity and innovation; and will learn how to interact with peers, adults, and organizations and participate in experiences that build college and career readiness.

(3) The Secretary determines the extent to which the applicant demonstrates how it will ensure equal access and treatment from eligible project participants who have been

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traditionally underrepresented in course or activities offered as part of the magnet school, e.g., women and girls in mathematics, science, or technology courses, and disabled students.

As stated in Board Equity Policy 0100, “*The Board of Education of Baltimore County (Board) believes that every student in the school system should receive an education that maximizes his/her potential to become a globally competitive graduate. Disparities on the basis of race, special education status, gender, ethnicity, sexual orientation, English language learner (ELL) status, or socioeconomic status are unacceptable and are directly at odds with the belief that all students can achieve.*” This policy is in accordance with Title VI and Title VII of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; Section 503 and Section 504 of the Rehabilitation Act of 1973, as amended; the Americans with Disabilities Act of 1990, as amended; the Civil Rights Act of 1991; and the Maryland State Human Rights Laws. BCPS adheres unconditionally to nondiscrimination practices that ensure equal access and treatment for all of its students in all curricular and extracurricular programs.

The policies to ensure equal access and treatment are also fully aligned with guidance provided by the USDOE Office for Civil Rights on the voluntary use of race to achieve diversity and avoid racial isolation in elementary and secondary schools (Ali & Perez, 2011). The BCPS magnet schools will be **whole-school programs** that engage all students in rigorous, theme-based instruction and enrichment activities. As noted in the CPP 3 narrative, BCPS will use a race-neutral student selection process to enroll new students from outside the schools’ attendance zones. Furthermore, participation in magnet activities will *not* require any financial contributions from students or their families.

The BCPS Master Plan defines how the school system will ensure that all students will

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graduate from high school and reach high standards, as established by BCPS and state proficiency levels in reading, language arts, mathematics, science, and social studies. Key strategies of the BCPS Master Plan include:

- Provide for the consistent and systematic implementation of the curriculum in all content areas, which includes differentiated curriculum for ELLs, special education, gifted and talented, and honor students.
- Develop, implement, and monitor intervention programs for students who have not demonstrated proficiency in reading, language arts, mathematics, science, and social studies.
- Educate all students with disabilities in accordance with the objectives defined in the students' Individualized Education Plans (IEPs) so that they learn the body of knowledge presented in the classroom to the maximum extent possible.
- Provide supports and services, modifications, and adaptations of curriculum, instructional methodology, and/or materials based on student needs.

BCPS also believes that the District and schools must take a proactive role in providing adequate supports and resources to ensure that all students can attain high levels of achievement, including those who have traditionally been underrepresented in courses or activities that will be offered as part of magnet school programs. An essential component to ensuring equal access and treatment is by setting high standards that all students are expected to meet, regardless of their gender, racial or ethnic background, educational needs, or income level. It is recognized, however, that some students have greater difficulty in meeting these standards when they are confronted by certain academic, social, or emotional challenges. This section describes some of the major efforts the proposed magnet schools are making to ensure equal access and treatment.

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These efforts demonstrate that BCPS is in full compliance with Section 427 of the U.S.

Department of Education’s General Education Provisions Act (GEPA) (see Attachments).

Support for All Students in Mathematics, Science, or Technology Courses

Underrepresentation of girls and racial and ethnic minority groups—particularly of African American and Hispanic students—in STEM fields and courses of study is well documented by research (Chen & Thomas, 2009; National Science Foundation, 2013). At the same time, literature highlights the advantages to pursuing these fields, both in terms of employability and future earnings, as well as the cognitive benefits that STEM brings to all aspects of education (Malcolm & Webster, 2014). For these reasons, strategies that support participation among all groups of students, including both those who are traditionally underrepresented in STEM and groups who participate more frequently, is of utmost importance to providing equitable access and opportunities. Research and literature have highlighted effective strategies for promoting participation in STEM among all groups. Specifically, the following strategies have strong or moderate evidence of their impact on fostering participation among girls and underrepresented groups in STEM: activities that connect math and science to careers of interest among students, explicitly teaching students that academic abilities are expandable and improvable and building students’ confidence in math and science performance, and providing students with informative feedback about their performance (Halpern, et al, 2007)

Research further indicates that one of the best ways to build interest in STEM among children and adolescents—and especially students from racial and ethnic minority groups—is to provide hands-on applications of STEM learning (Hayden et al., 2011; Ilumoka, 2012). Opportunities for students and teachers to engage in explicit teaching and learning of STEM

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content and concepts within the context of real-world examples have been shown to build interest among students in STEM, including girls and racial and ethnic minority groups (Hayden et al., 2011). And, building interest in STEM is a fundamental component in preparing students to persist in STEM postsecondary and career opportunities (Hayden et al., 2011). Furthermore, supplementing engaging, hands-on classroom experiences with out-of-school STEM activities have proven to increase student engagement and motivation to pursue STEM fields (Maton et al., 2009). Additionally, effective practices also include: providing opportunities for students to learn from female and racial/ethnic minority college or graduate students in classroom activities; providing community outreach and recruitment for STEM experiences; use of collaborative learning opportunities, hands-on learning experiences, and differentiation of instruction; and employing strategies actively designed to negate stereotypes, such as inclusive examples and including instructors from a diversity of backgrounds (Hayden et al., 2011).

According to the Next Generation Science Standards (NGSS), “strategies to support economically disadvantaged students include: (1) connecting science education to students’ sense of ‘place’ as physical, historical, and sociocultural dimensions, (2) applying students’ funds of knowledge and cultural practices, (3) using project-based science learning as a form of connected science, and (4) providing school resources and funding for science instruction.” All K-12 science and STEM courses across BCPS are being aligned to NGSS and integrating project-based learning as an important strategy to provide real-world connections for students. BCPS has partnered with National Alliance for Partnerships in Equity (PIPE) to examine and address inequities in STEM and CTE courses and pathways across the District. PIPE is a data-driven process focused on improving access and increasing participation, completion, and

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transition of underrepresented groups in programs of study, including females in engineering and information technology programs of study as one example. PIPE is designed to increase the academic performance and program completion of underserved students in STEM programs by providing professional growth opportunities for educators to improve classroom pedagogy and instruction.

BCPS is also expanding access for all students to hands-on learning through project-based approaches in STEM through its Mobile Innovation Labs. Mobile Innovation Labs serve as portable makerspaces in which students across the District can access resources, knowledge, and materials, and as an incubator for authentic, innovative learning. The mobility of the lab will allow for all students to be exposed to and have opportunities to become interested in STEM.

The magnet programs will build upon these district-wide initiatives to expand access and participation among all students, including underrepresented populations in STEM programming, by offering a diversity of learning experiences for all learners. Examples of the kinds of experiences that will be implemented in each new magnet school include: development of edible learning gardens, First Lego League robotics clubs and competitions, whole-school Green initiatives to promote environment awareness and conservation, Blue Bird House and EcoTrekks clubs in which students engage in outdoor exploration and experiential learning, Hour of Code and Vex IX computer programming events, Math Counts and Chemathon competitions, and Maryland Engineering Challenges. Taken together, these experiences offer a range of opportunities that will appeal to a diversity of student interests.

Support for Students With Special Learning Needs

In BCPS, **services provided to students with disabilities** align directly to the *Blueprint 2.0*

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and include a continuum of services ranging from consultative services to direct services, both inside and outside of the general education setting. Decisions for how students receive the services are made by an IEP team and are based on the services needed to implement the students' IEPs in the least restrictive environment. Services include: inclusive education (ranging from 16:1:0.5 to 10:1:0.5); self-contained classes, including Kindergarten Early Childhood Learning Support Classroom (9:1:1) and Behavior and Learning Support (9:1:1); and other related services, including speech and language services, counseling, and adaptive physical education. BCPS provides special education services to 11.5% of its students through a range of models. The proportion of students with disabilities at the proposed magnet schools and the models of services provided are listed in Table 7. The BCPS Office of Special Education will help to provide PD and create instructional supports and tools to meet the needs of students with disabilities at the proposed magnet schools.

Table 7: Models of Special Education Services and Proportion of Students with Disabilities (SWD) in 2015–16, by Magnet School

Schools/Proportion of SWD	Special Education Service Models
Woodmoor ES (9.1%)	Inclusion
Golden Ring MS (16.3%) Middle River MS (14.0%) Windsor Mill MS (15.0%) Overlea HS (16.4%)	Inclusion, Functional Academic Learning Supports (FALS), Behavior Learning Supports (BLS)
New Town HS (15.9%)	Inclusion, BLS, Communication and Learning Support (CALs), and Asperger's and Autism

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Source: 2016 Maryland State Report Card

Services for ELLs in BCPS provide both explicit English language development instruction from highly qualified ESOL teachers and support in grade level or content classes. BCPS uses the Sheltered Instruction Observation Protocol (SIOP) model for non-ESOL teachers who are working with ELLs. The model focuses on making all content comprehensible for those who are not yet proficient in English. In ESOL classes, students benefit from curriculum that is aligned with newly-developed Council of Chief State School Officers (CCSSO) English Language Proficiency (ELP) Standards and Common Core State Standards (CCSS). At the secondary level, ELLs have courses designed to familiarize them with American culture, academic and social norms, and American history to build scaffolds in core content. Across BCPS, 3.9% of students are ELLs. The proportion of ELLs at the proposed magnet schools ranges from 0% at Middle River MS and New Town HS to 9% at Woodmoor ES.

Academic supports for struggling learners within BCPS are provided in a multi-tiered support services approach that promotes early and systematic interventions for all students and determines the need for additional interventions on the basis of student response and progress monitoring. Tier 1 supports are universal and are provided to all students on a school-wide basis. Tier 2 supports refer to targeted interventions provided to individual students or groups of students on the basis of a more complex need. Tier 3 supports refer to more intensive interventions. These services will address the needs of individual students and create environments in which all students receive the tools needed to excel and succeed in the magnet programs.

In addition, each proposed magnet school will provide a variety of instructional supports to

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learners who need additional help, including peer mentoring programs facilitated at individual schools; district-wide extended day and extended year learning programs that allow students to recover credits in a self-paced, blended learning environment; and various research-based reading and mathematics interventions such as iREADY and Ascend that allow students to receive customized instruction and close critical cognitive gaps.

(4) The Secretary determines the extent to which the applicant demonstrates the effectiveness of all other desegregation strategies proposed by the applicant for the elimination, reduction, or prevention of minority group isolation in elementary schools and secondary schools with substantial proportions of minority students.

In addition to the strategies highlighted throughout this section, the BCPS magnet initiative is using strategic geographic placement of the new magnet programs and providing transportation for out-of-zone students to attend the magnet programs **at no cost to the grant** as additional strategies to promote desegregation.

Geographic placement of proposed magnet programs: By increasing the supply of magnet programs and creating vertical thematic pathways in geographic areas that currently lack magnet programs, BCPS will create attractive options for a diverse population of families and thus support the desegregation goals of the grant. The six proposed magnet schools are located in the east and west regions of the District and strategically placed in areas that do not currently have magnet programs. As noted earlier, results from the District's 2013 audit of magnet programs highlighted the need to expand opportunities in these two geographic areas and to provide vertical pathways for students to continue in study of a theme from K-12.

The development of an IB K-12 whole-school magnet pathway on the west side will be an

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attractive option for families in those communities who currently have no access to elementary magnet programs or to rigorous IB programming. Furthermore, the expansion of the IB programming on the east side to create a 6-12 IB whole-school pathway will increase interest in the existing IB DP at Kenwood and provide a more robust pipeline of students to take advantage of the DP. Additionally, the Health Science 6-12 whole-school magnet pathway on the east side will provide options for students who previously had no access (based on geographic location of magnet programs) to magnet programs with this theme—which as stated earlier is among BCPS’s most popular.

Transportation: Providing transportation to magnet programs, at no cost to families and at no cost to the grant, will support the desegregation goals of the grant by providing opportunities for students who live outside of the local attendance boundaries of the new magnet schools to attend the programs without the burden of providing their own transportation. Each proposed magnet school will have a designated transportation zone that encompasses the region in which the school is located (east/west).

(b) Quality of Project Design

The Secretary reviews each application to determine the quality of the project design.

(1) The Secretary considers the manner and extent to which each magnet school program will improve student academic achievement for all students attending each magnet school program, including the manner and extent to which each magnet school will increase student academic achievement in the instructional area or areas offered by the school, including any evidence, or if such evidence is not available, a rationale based on current research findings to support such description.

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The proposed BCPS magnet initiative is fully aligned with and supportive of BCPS's *Blueprint 2.0 Our Way Forward*, the District's ambitious five-year strategic plan that serves as a road map to "ensure that every student is prepared for his or her chosen college and/or career path and to create a culture of deliberate excellence...for ourselves and all of our students." The *Blueprint 2.0*, which builds upon the District's previous Blueprint for Progress, was developed in 2012 through a collaborative process that engaged staff, students, parents, and other community leaders and stakeholders in identifying the needs and strategies to help the District achieve its goal to have every student graduate globally competitive.

The alignment of the magnet program to the four goals of *Blueprint 2.0* is as follows:

Goal 1: Academics. BCPS works to ensure that every student participates in a rigorous instructional program designed to raise the academic bar and close achievement gaps. The magnet initiative will support these efforts by creating, implementing, and sustaining six new whole-school magnet programs that engage students in rigorous academic pathways.

Goal 2: Safety. BCPS is committed to provide caring environments for teaching and learning. The magnet initiative will address this goal by providing PD to help teachers effectively meet the needs of all learners and foster collaborative learning environments.

Goal 3: Communications. BCPS produces timely, transparent, and widely available communication about BCPS's initiatives and activities. The magnet initiative will align with this goal by creating and implementing a multi-pronged outreach and communications strategy and promoting communications between families and schools through magnet program activities.

Goal 4: Organizational Effectiveness. BCPS works to maximize organizational efficiency and effectiveness by engaging in strategic efforts that employ rigorous, relevant, and reasonable

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performance standards. The magnet initiative will support organizational effectiveness with the well-defined management plan (see Quality of Project Management) and an ongoing continuous improvement process built into the magnet program design (see Quality of Project Evaluation).

Fundamental to all BCPS initiatives is the value of equity. Under Dr. Dance, BCPS initiated an “equity transformation” which started in 2013 with the adoption of Policy 0100 by the Baltimore County Board of Education (described in the Desegregation section) and implemented through the adoption of two district-wide initiatives: S.T.A.T. and Passport Schools, a district-wide Spanish-language acquisition initiative. S.T.A.T. is the multi-year transformation of BCPS into a complete 21st century technology learning environment to prepare globally-competitive graduates. BCPS is in the process of redesigning curriculum in the core content areas to redefine what instruction will look like in a blended learning environment, while placing a stronger emphasis on critical thinking and analytical skills. The second initiative, Passport Schools, is being implemented to ensure that every student becomes proficient in a second language. Students will use laptops, provided through the 1:1 digital conversation of S.T.A.T., to begin learning Spanish in kindergarten and extend through graduation.

The magnet initiative will help realize the District’s equity transformation by bringing innovative, evidence-based academic programs to six schools that are minority-group isolated and have student academic achievement levels that are lower than district-wide averages. The magnet programs will include strong thematic curricula that are aligned with District and CCSS; extensive PD in the areas of inquiry and project-based learning to transform teaching and learning; and exciting and engaging enrichment opportunities for students and teachers to engage in real-world, globally-focused experiences offered through strong community and business

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partnerships. The magnet programs will be supported by the full complement of resources and efforts that encompass the District’s equity transformation and by school staff, leadership, and community to ensure that the programs are sustained and enhanced after federal funding ends.

Academic Instruction and Supports of Magnet Programs

As stated in the core values, “BCPS is committed to doing whatever it takes to ensure that every student learns and succeeds, regardless of race, ethnicity, gender, socioeconomic status.” Yet, many students struggle to meet grade level standards as measured by state assessments. Furthermore, with the transition to CCSS, students are expected to meet increasingly challenging benchmarks in order to prepare them for college and careers. As a result, the proportion of students who meet the standards in English Language Arts (ELA) and math, as measured on the Partnership for Assessment of Readiness for College and Careers (PARCC) assessments, which were first administered in the 2014–15 school year, are even lower than the proportions on the previous Maryland State Assessments (MSA). Furthermore, data show that there are significant achievement gaps for students by racial and ethnic background, eligibility for FARMS, and students with disabilities (SWD).

Results on PARCC assessments are presented in Tables 8-10; data are not presented when the number of students is less than 10. Data show that the academic achievement of students in the six proposed magnet schools falls below district-wide averages. For example, at Woodmoor ES, the proportion of students in Grades 3-5 who met or exceeded the standards lagged the district-wide average by 20.8 percentage points in ELA and by 18 percentage points in math.

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Table 8: Percentage of Students who Met/Exceeded Standard on Spring 2016 PARCC ELA and Math (Grades 3-5)

Student Group*	Woodmoor ES		BCPS	
	ELA (N=236)	Math (N=237)	ELA (N=25,876)	Math (N=26,030)
All Students	16.5%	21.5%	37.3%	39.5%
Black/African American	17.2%	22.0%	23.0%	23.5%
Hispanic/Latino	8.3%	16.7%	23.4%	26.3%
SWD	9.1%	9.1%	9.0%	10.9%
Eligible for FARMS	16.8%	20.3%	22.0%	23.3%

*Data are presented only for subgroups for which the number of students was greater than 10.

Similar trends are seen in the proposed magnet middle and high schools. Data in Table 9 show that the proportions of students who met or exceeded the standards in the proposed magnet middle schools lagged the district-wide averages by:

- 18.3 percentage points in ELA and 15.7 points in math at Golden Ring MS;
- 9.6 percentage points in ELA and 13.3 in math at Middle River MS; and
- 18 percentage points in ELA and 14.3 in math at Windsor Mill.

Table 9: Percentage of Students who Met/Exceeded Standard on Spring 2016 PARCC ELA/Math (Grades 6-8)

Student Group*	Golden Ring MS	Middle River MS	Windsor Mill MS	BCPS (District)

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Student Group*	Golden Ring		Middle River		Windsor Mill		BCPS (District)	
	MS		MS		MS			
	ELA (N= 644)	Math (N= 582)	ELA (N= 834)	Math (N= 651)	ELA (N= 504)	Math (N= 395)	ELA (N= 23196)	Math (N= 17832)
All Students	15.4%	6.4%	24.1%	8.8%	15.7%	7.3%	33.7%	22.1%
Asian	39.1%	20.0%	65.2%	25.0%	40.0%	14.3%	57.3%	45.3%
Black/African American	12.6%	4.0%	16.6%	6.8%	15.5%	7.5%	21.6%	9.8%
Hispanic/Latino	15.0%	7.5%	21.8%	6.7%	12.5%	0.0%	23.0%	10.5%
White	23.4%	11.8%	29.0%	9.8%	--	--	43.4%	34.1%
Two or more races	0.0%	0.0%	28.8%	14.6%	7.7%	10.0%	33.0%	20.4%
SWD	4.1%	1.0%	3.7%	1.0%	0.0%	1.5%	4.1%	3.5%
Eligible for FARMS	15.3%	5.4%	17.8%	6.3%	13.0%	5.3%	19.8%	9.9%

*Data are presented only for subgroups for which the number of students was greater than 10.

On the PARCC English 10 assessment, the proportion of high school students who met or exceeded the standards at the proposed magnet high schools, Overlea HS and New Town HS, lagged the district-wide average by 34.5 percentage points and 8 percentage points, respectively. On the Algebra I assessment, the proportions lagged the district-wide average by 25.4 percentage points at Overlea HS and by 18.5 point at New Town HS (Table 10).

Table 10: Students Scoring at Passing on Spring 2016 PARCC English 10 and Algebra I

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Student Group*	Overlea HS		New Town HS		BCPS	
	English 10 (N=225)	Algebra I (N=107)	English 10 (N=232)	Algebra I (N=87)	English 10 (N=7532)	Algebra I (N=8499)
All Students	8.4%	0.0%	34.9%	6.9%	42.9%	25.4%
Black/African American	4.8%	0.0%	34.4%	5.1%	29.1%	10.6%
Hispanic/Latino	6.7%	--	--	--	28.5%	15.9%
White	12.5%	0.0%	--	--	57.4%	37.7%
SWD	0.0%	0.0%	6.1%	0.0%	5.4%	3.4%
Eligible for FARMS	7.8%	0.0%	31.9%	2.4%	27.5%	12.1%

*Data are presented only for subgroups for which the number of students was greater than 10.

The BCPS proposed magnet initiative will address student achievement needs and work to raise achievement for all students by engaging all learners in project-based learning and integrating evidence-based practices from the IB program across all content areas (described in Competitive Preference Priority 2). The magnet initiative will create vertical pathways in IB and health science which will infuse inquiry-based practices and curriculum of the IB framework that have been proven to be effective in raising student achievement and promoting college and career readiness. At the same time, each school will continue to provide high-quality academic supports, including multi-tiered support services, and services of ELLs and SWD, as described in the Desegregation section to ensure that all learners receive high-quality instruction to enable them to participate and succeed in the magnet programs including curriculum, courses, and extracurricular experiences.

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The magnet initiative will also include AVID instruction and practices to ensure that all students in each of the schools have the academic supports and motivation to succeed in the magnet programs. AVID is designed to enable schoolwide implementation of proven instructional methodologies and content area best practices to improve outcomes for all students. In BCPS, the program goes beyond the AVID elective course to affect an entire campus by creating a college-going culture that increases the number of students who enroll and succeed in higher education and their lives beyond. Driven by the Writing, Inquiry, Collaboration, Organization, and Reading (WICOR) method, and based on rigorous standards, AVID's curriculum supports high levels of academic achievement for all students and aligns to state and national content standards. To support students in rigorous coursework, AVID students learn organizational and study skills, develop critical thinking, learn to ask probing questions, receive academic help from peers and college tutors, and participate in enrichment and motivational activities to make their college dreams reality.

The **IB and Health Sciences magnet pathway themes** were carefully chosen by BCPS as strong platforms for infusing innovative and research-based teaching methods across the six proposed magnet schools. IB is an evidence-based, whole-school model designed to prepare students for international citizenship by focusing on the dual goals of cognitive and social-emotional development. Recognizing that students will be graduating into a globalized and multi-cultural future, the IBO mission-driven is to “encourage students across the world become active, compassionate and lifelong learners who understand that other people, with their differences can also be right.” At the core of the IB model is the recognition that students should be given the tools to be critical thinkers and should be cultivated as active learners. IB has been

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adopted by more than 4,000 schools internationally. In the United States, the IB program has been implemented extensively in Title I funded schools, demonstrating its position as a good fit for low-income students.

There is strong evidence indicating that IB has statistically significant and positive impacts on student academic achievement and postsecondary success. As described in CPP 2, a rigorous evaluation of the IB DP conducted by the University of Chicago Consortium on Chicago School Research for Chicago Public Schools found that students who participated in the IB program were statistically more likely than a matched comparison group to attend a four-year college (Coca, et al., 2012). The study showed that 77.2% of the IB DP cohort attended a four-year college, compared with 53.3% of a matched comparison group and the difference was statistically significant ($p < .01$).

Similarly, another study conducted with National Center for Education Statistics data found that college enrollment among low-income IB students was considerably higher (79%) than college enrollment among all low-income students nationwide (46%) (Gordon, et al., 2015). Another study found that students who attended IB elementary and middle school programs were more likely to take an advanced placement course in high school than demographically matched students who did not attend an IB program. In this same study, IB students were also more likely to earn a college-readiness-level score on their end-of-course exams (Wade & Wolanin, 2015). A third study also found that once enrolled in college, low-income IB program students continued to perform better than other low-income students. Data showed that 72% of low-income IB students graduated college within six years of enrollment compared with 47% of low-income students nationwide (Casparly, et al., 2015).

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The Health Sciences magnet programs will focus on providing students with opportunities to focus on science and STEM concepts through school-wide, project-based, interdisciplinary units of study and electives that provide students with deeper understanding of and exposure to careers in the health sciences. The instructional program will be aligned with NGSS in order to engage students in real-world applications of science content and project-based learning experiences. A plethora of research has been conducted on the impact of project-based learning on student academic outcomes (see Desegregation section).

The health sciences magnet programs will also integrate instructional practices and curriculum materials from IB into development of the thematic curriculum units. Science teachers from the new Health Science magnets will participate in IB training over the five-year period. The IB DP program offers the two-year Sports, Exercise, and Health Science course (SEHS), which incorporates anatomy and physiology, biomechanics, psychology, and nutrition—studied in the context of sport, exercise, and health—and incorporates experimental opportunities to prepare students for college and careers in the health sciences. The IB MYP includes an integrated science curriculum framework that involve exploration of concepts, skills, and processes from two or more science disciplines, including health, physical, sport, life, earth, and environmental sciences. The SEHS course curriculum will be integrated into the health sciences magnet program at Overlea HS, and MYP’s integrated science curriculum will be used in the interdisciplinary health science units at Golden Ring MS.

The magnet programs will also engage students in lessons and activities to apply health sciences to their own physical fitness and well-being. As described later in this section, the magnet programs will include school-wide health and wellness centers and students will use

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fitness and nutrition tracking technologies to participate in units of study about their own health. There is a growing body of research and evidence reporting a relationship between physical activity and the structure and functioning of the brain, suggesting that “children who are more active show greater attention, have faster cognitive processing speed, and perform better on standardized academic tests than children who are less active” (Kohl & Cook, ed., 2013, p. 4). The Kohl and Cook study recommends teachers engage students in physical activity throughout the school day by providing classroom time dedicated to physical activity, preparing active lessons that require students to stand, move around, and integrate movement into learning.

The development of inquiry and standards-based thematic curricula that meets the needs of all learners will be the cornerstone of each of the whole-school magnet programs. Inquiry-based learning is an instructional technique based on the belief that learners come to class with previous knowledge and experiences and that the teacher’s role is to guide students toward understanding (Carlson, 1999). In this approach, the learner’s own background and experiences are incorporated into the learning process and students are able to connect to the subject matter, find ways to bring their own questions to learning, and investigate to find their own answers. Research shows that an inquiry-based approach can help reduce achievement gaps (Kahle, Meece, & Scantlebury, 2000; Marx, et al., 2004) and produce gains in student learning among all students by race/ethnicity, gender, and socioeconomic background (Kowalski et al., 2009).

Using an inquiry-based approach, each of the magnet programs will integrate **project-based learning** into all aspects of the curriculum in order to guide students to take ownership of learning and develop critical and higher-order thinking skills that will allow them to succeed in any field they pursue. PBL is an innovative approach to education that focuses on creating a

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student-centered learning that supports “deeper learning through active exploration of real-world problems and challenges” (Pellegrino & Hilton, 2012 p. 8). While there is no firm definition of PBL, researchers and practitioners agree upon a set of essential components of a PBL approach. First, PBL units or lessons should be motivated by a driving question or problem to be solved. Secondly, PBL curricula target significant learning goals (Krajcik & Shin, 2014); and lastly, PBL units should use hands-on experiences to promote learning (Condliffe, 2015) and be conducted over a period of time in order for students to delve deeply into research (Parker et al., 2013). Researchers agree that if PBL is designed effectively, it produces significant benefits to students’ learning, including: promoting construction of knowledge, cultivating student engagement, providing scaffolded student learning, encouraging student choice, and supporting student collaboration (Condliffe, 2015).

Integrating an inquiry- and project-based approach with interdisciplinary thematic curricula will also support student **development of important 21st century skills**. These skills are often referred to as “learning and innovation skills,” such as creativity, critical thinking, communication and collaboration, and information media, as well as technology skills (Partnership for 21st Century, 2009). The development of 21st century skills is especially important among low-income and minority students. Studies have shown that success goes beyond intelligence, and that a child’s character in areas of “perseverance, curiosity, conscientiousness, optimism, and self-control” matters more (Tough, 2012). When applied to academics, these non-cognitive skills can help reduce disparities in achievement and educational attainment based on race, SES, ethnicity, and gender (Farrington et al., 2012). The BCPS magnet programs will provide expanded opportunities for all students to participate in curricular and

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extracurricular experiences that will foster the development of these 21st century skills.

To support the transformation of teaching and learning across the magnet schools, each proposed magnet school will develop a **Makerspace Lab** to provide the tools, materials, and instructional supports for students and stakeholders to truly innovate. Makerspaces provide a collaborative studio space for creative endeavors, where learning through hands-on exploration is accentuated. Providing opportunities for engaging applications of media and technology will be at the forefront of the Makerspace Labs' offerings. The Makerspace Lab will also serve as a residency for computer science instruction where students will use the Office of Digital Learning's Scratch programming curriculum and other programming tools. Students can work through the engineering design process and engage in learning experiences using tools such as LittleBits and 3D printers to equip them with skills to make them truly globally competitive.

The magnet programs, through a strong partnership with **i2 Learning**, will offer two week-long summer STEM enrichment programs for rising Grade 5 students at Woodmoor ES, and rising Grade 6 students at Golden Ring, Middle River, and Windsor Mill MS. In these programs, students will engage in PBL in topics such as digital game design, kinetic sculptures, robotics, surgical techniques, and engineering prosthetic devices. i2 Learning will partner with BCPS to provide intensive training for 32 magnet teachers each year to build teachers' capacity to integrate STEM-focused projects aligned to the existing BCPS curriculum and prepare them to lead the summer programs starting in Year 1 of the grant.

The six magnet schools will also partner with Towson University Center for STEM Excellence and the SciTech Learning Lab to participate in **Project Virtue**, a school project that started with students in Sweden in collaboration with the University of Gothenburg. As a real-

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world application, students will analyze the health and quality of the marine environment in the Chesapeake Bay by collecting and analyzing the build-up of organisms through biofilms on submerged plastic discs. Students will build their own collecting racks and share their results with other schools across the globe using the Virtue data site at <http://science.gu.se/english/cooperation/virtue>.

BCPS will also expand **video conferencing** capabilities at Woodmoor ES, Middle River and Winsdor Mill MS, and New Town HS to enhance the local, national, and international experiences of students across the four new IB magnet programs. Two new classroom connections, including one in the media center, will be added at each school. Using video conferencing, students and teachers will have opportunities to collaborate with and learn from other IB students in Maryland, across the nation, and internationally, and to incorporate virtual field trips into the instructional programs and interdisciplinary units.

Golden Ring MS and Overlea HS will be physically transformed into **centers for health science and wellness** in which students and teachers will engage in thematic curriculum units and will integrate physical activity and wellness into learning to promote academic performance. As health science and wellness centers, both schools will be equipped with treadmill desks in 30 classrooms and students will receive physical activity tracking devices (e.g., fitbits) to measure physical activities. Additionally, teachers will receive ongoing PD provided by BCPS Office of Health and Physical Education (see section B-3) about the impact of health and wellness on student outcomes and strategies to integrate physical activity into classroom instruction.

To support integration of physical activity and wellness into instruction, both schools will collaborate on a school-wide interdisciplinary health and wellness unit in each year. In the unit,

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Healthy Body Healthy Minds, students will use digital biometric tools to measure and track health and wellness indicators—steps, blood pressure, sleep patterns, and calories burned. Students will conduct research on the impact of activity and wellness to set personal health goals. Using health and wellness tracking devices, students will track data, calculate progress, and develop strategies for meeting goals. The unit will engage students not only in health and wellness but will integrate math and science concepts, including research, and will require students to create multi-media presentations of findings that will be showcased in a culminating health fair. The schools will collaborate with local health agencies, including JHBMC and the Baltimore County Department of Health and Human Services (DHHS), to host annual interactive community health fairs. At the fairs, students and staff will engage attendees in student presentations from the *Healthy Body Healthy Minds* unit, demonstrate how to perform CPR and first aid, and provide other health and wellness services and activities related to their research.

Magnet School Program Designs:

Each of the proposed magnet schools will implement a **whole-school** magnet program that will engage them in in-depth exploration of the magnet theme through interdisciplinary curriculum units, elective classes, and enriched learning experiences. At the same time, students will engage in rigorous coursework designed around evidence- and research-based instructional practices. The design of each of the proposed programs is presented in the following section.

Woodmoor ES: Magnet School of Global Communications and Science

Woodmoor ES, a K-5 school, will implement the first component of the District's new K-12 IB pathway on the west side of Baltimore County by integrating the philosophies and approach of the IB PYP within the framework of a global communications and science theme. PYP is the

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first program in a sequential path of IB instruction that will continue with the MYP in grades 6-8 at Windsor Mill MS, and the MYP in grades 9-10 and the DP in grades 11-12 at New Town HS.

The central component of the magnet program will be the transition to an inquiry-based method of instruction across the curriculum through the development of thematic units of study and extensive PD provided by the IBO (described in Section B-3) at all grade levels. Teachers will support student efforts to guide their own learning by drawing on prior knowledge, participating in hands-on learning and experiences, and reflecting on what they have learned.

Over the five-year magnet grant, Woodmoor ES will develop and implement a complete instructional program of inquiry for Grades K–5 that addresses all of the principles and requisites of PYP. The program of inquiry is organized around a written curriculum, which outlines what students will learn; the taught curriculum, which details how teachers teach the curriculum; and the assessed curriculum, which identifies the practice of effective assessment in the curriculum. The written curriculum will be designed to incorporate six transdisciplinary themes across the content areas of language, social studies, math, science, arts, and physical education: *who we are*, *where we are in place and time*, *how we express ourselves*, *how the world works*, *how we organize ourselves*, and *sharing the planet*.

Curriculum units addressing each of the transdisciplinary themes will be centered on the **theme of global communications and science**, which will be incorporated into six PYP units at each grade level. The units will be developed, reviewed, implemented, and revised over the first three years of the grant —starting with at least one unit per grade level in Year 1 of the grant, an additional two units in Year 2, and the remaining three units in Year 3 and Year 4. By Year 5, the units will be reviewed and revised and implementation will continue school-wide. The units

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will be developed by collaborative teams of teachers across grade levels to ensure that they are vertically-aligned and address CCSS and BCPS curriculum standards.

By integrating the global communications and science magnet theme into the PYP curriculum framework, the magnet program will engage students and teachers in the study of global ideas and concepts that will teach students about “international mindedness” and provide new experiences for students to develop a global awareness. As a digital 1:1 learning environment, students at Woodmoor are already experienced in using technology to explore and research topics beyond the classroom. The thematic magnet units will provide new and exciting content through which students use technology to explore global issues in science and communication. Examples of thematic units might include a unit on pollution that will engage 3rd grade students in exploring issues of trash in the oceans and developing and presenting solutions to pollution. A unit on population and world hunger in Grade 5 would engage students in research on world hunger and applying their knowledge to create a public awareness campaign about hunger for the World Food Programme.

Beginning in year one of the grant, a STEM teacher, funded outside of the grant, will be hired for the purpose of providing students in the primary grades with a weekly opportunity to engage in critical thinking skills through hands-on and minds-on experiences. Students will develop solutions with the use of science, technology, engineering and math (STEM) skills. Students will also engage in hands-on learning as part of the thematic units in the school’s fully functional TV broadcast studio. In the studio, students will build upon core subject area content knowledge by learning how to research, write, perform, and produce news broadcasts that cover topics studied in thematic magnet units. By preparing news broadcasts, students will explore

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global issues and ideas that extend beyond the school, city, and country they live in and acquire a worldwide perspective. Students will use a variety of media tools to identify, research, and generate a resolution which will be presented through a variety of communication forms, including public service announcements, news broadcasts, or a letter to the editor. Student broadcasts will be shared across grade levels to showcase thematic units for staff and students. Broadcasts will be displayed during parent and community events and on the school website. Students will also have opportunities to participate in summer theme-related experiences with i2 Learning (as described above).

Woodmoor is slated to become a BCPS Passport School in the 2018–19 school year, which will be an integral part of the IB program. As noted above, the BCPS Passport program uses a blended approach to language instruction combining both face-to-face instruction and self-paced digital content. At Woodmoor, Passport will be about more than just the instruction; second language acquisition will be part of the school culture and integrated through morning announcements, vocabulary shared with all grades, signage inside and outside the building, bulletin boards, clubs, and activities the school creates—nurturing an environment where second language acquisition is incentivized and celebrated. Students will also participate in culture-building field trips, such as to foreign language theatre and Latin dance performances and the Walters Art Museum’s Ancient Americas exhibit.

Parents will be invited to participate in the magnet program at Woodmoor through a variety of events designed to provide hands-on family experiences. School-wide family events, including parent information nights, student showcase nights, international nights, and magnet fairs will provide opportunities for parents to learn about what their children are experiencing in

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the magnet program and participate in mini-lessons related to the interdisciplinary units. The magnet team will also share information about the magnet program with parents through newsletters, robocalls, text messages, parent and community learning walks, social media, the school website, and in PTA meetings.

Middle River MS: Magnet School for Global Studies of Science and Technology

Middle River MS is a 6-8 middle school located in the Northeast area of Baltimore County that will form the first component of a 6-12 IB pathway that leads to the existing IB DP and CP at Kenwood HS. (BCPS has developed the MYP for all students in grade 9-10 at Kenwood HS through local funding.) Middle River MS will develop and implement the IB MYP with a thematic focus on **global studies of science and technology**. Middle River is located along a tributary of the Chesapeake Bay with a rich industrial history. The magnet theme will be integrated into an authentic interdisciplinary curriculum that draws on the past and present industry, the continuing environmental challenges, and the impacts of these challenges on the local and global community.

Middle River MS will develop an MYP instructional program in each of eight subject groups—language and literature, individuals and societies, sciences, mathematics, arts, physical and health education, and design (technology). The thematic focus of the MYP interdisciplinary units will be studies of global science and technology. Through these units, students will engage in the exploration of the global contexts outlined in the MYP: identities and relationships, personal and cultural identity, orientations in space and time, scientific and technical innovation, fairness and development, and globalization and sustainability.

Beginning in Year 1 of the grant, all teachers will develop and implement at least one

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interdisciplinary unit per grade level. In Year 2, two units will be developed and implemented, and three units by Year 3 of the grant. Ongoing evaluation, revision, and adjusted implementation of four new units will continue in years 4 and 5. For example, a sixth-grade IB unit of study will focus on how abundance or scarcity of resources affects living systems around the world through coursework in health and physical education, social studies, and science. Students will build on classroom learning with a canoeing field trip to the local wetland ecosystem during which they explore the relationships between abiotic and biotic factors. They will apply these concepts through multimedia research of living systems around the world, including the role of humans in the living systems by making predictions about the health, environmental, economic, and political impacts of climate change as availability of resources changes, including local impacts in the Chesapeake Bay area. In seventh grade, students will participate in a unit about how different regions of the world create, utilize, and consume energy resources. Students would read related texts such as The Boy Who Harnessed the Wind, an inspiring true story about an African teenager that powers his community with a windmill he creates from scrap material. Students will work in the school's new Makerspace Lab to explore the concepts of energy transfer in the context of renewable and non-renewable energy sources, and apply knowledge to designing portable solar ovens and other innovative applications of alternative energy sources.

The interdisciplinary units will be developed by collaborative, cross-content teams with input from students; will be directly aligned with NGSS, CCSS, and District and state standards; and will engage students in inquiry- and project-based learning to explore global issues. Teachers will serve as facilitators, providing tools and resources to teach students based on individual

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learning needs. Teachers will integrate digital resources such as interactive digital maps and stereo microscopes, to support students as they conduct research, engage in collaborative work, and produce multimedia products. At the end of each unit, each grade level will hold a showcase of learning for parents and the community to highlight research through presentations or products.

To extend learning in the units beyond the classroom, Middle River will partner with NorthBay. An outdoor education program that provides environmental and character education programs to middle school students, Northbay will provide hands-on experiential learning experiences for Middle River students and teachers (see letter of support in Attachments). Northbay provides interdisciplinary experiences that integrate CCSS and NGSS with character development. Through outdoor environmental explorations with Northbay, such as studying the impact of humans on marsh life, students and teachers will identify issues in their local community and engage in PBL activities to develop solutions and deeper understanding of global impact. For example, in grade 7, students will conduct an ecosystem study that includes hands-on explorations of the tidal and wetland ecosystems. Students will work outdoors to survey biological communities in order to investigate organism structure, function, and strategies for obtaining and using energy. In eighth grade, students will conduct a canoe-based ecosystem study at Dundee Creek to examine how human activities have impacted the environment by investigating biotic and abiotic factors to evaluate the health of the tidal ecosystem.

Throughout their middle school experience, students at Middle River will also engage in **community-based service learning**, for a total of 50 hours over three years. The Magnet Coordinator will work with classroom teachers to advise students on community service

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opportunities. The service learning activities will be connected with thematic interdisciplinary units, including opportunities in environmental clean-up and care for community members in need. As students engage in service-learning activities, they will collect evidence to demonstrate impact of their activities on themselves and others around them. Students will synthesize their data in personal projects. Students will have choice in presentation format, but will be encouraged to use digital and multimedia tools to tell their story.

The magnet program will also provide students with opportunities to participate in new, **thematic-based elective courses** not available in other BCPS middle schools. The elective courses will be developed beginning in Year 1 and phased in over the five-year grant. Examples of some of the elective courses that will be developed and implemented are:

- **Entrepreneurship for Change:** In this interdisciplinary course, students will design a company and product that responds to a humanitarian need and explore the historical connections while creating their company and designing their product. The course will integrate engineering, social studies, art, math, science, technology, and language arts, into project-based learning in the Makerspace lab to design prototypes of products.
- **Life on the Chesapeake:** In this maritime studies course, students will explore their own areas of interest in research related to the social, cultural, military, political, and/or historical contexts of the Chesapeake Bay. Field trips to the Port of Baltimore will provide hands-on learning experiences to teach students about the port terminals and their impact on the economy, politics, and environment; and to examine the impact of humans on sea life in the Bay.
- **Introduction to Programming and Robotics:** Students will explore the continually

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evolving field of robotics and its growing impact in the 21st Century, including for medical, social, military, environmental, and business uses. Students will learn introductory programming through applications such as Scratch and Spheros.

Communication with Middle River parents on student learning and events related to the magnet theme will occur through newsletters, social media, the school website, and showcases of student learning during Open House nights, parent information nights, and magnet expositions. Parents will be invited to provide ongoing feedback about program offerings and activities through town hall meetings, social media, surveys, and parent conferences, and will be encouraged to share their own knowledge and skills through volunteer opportunities that support the magnet theme.

Windsor Mill Middle Magnet School for Global Communications

Windsor Mill is a 6-8 middle school located in the northwest area of the county that will provide a vertical IB articulation pattern for students who graduate from the Woodmoor ES PYP, as well as access for students from other feeder elementary schools in the area. Windsor Mill MS will develop and implement the IB MYP with a thematic focus on **global communications**.

Communication skills are a fundamental tool in society. Effective communication involves clear expression, active listening, appropriate body language, and the compelling delivery of a message. In the 21st century, new forms of communication are being reshaped at the local, regional, national, and international levels. Today, news media use communication technology to gather and produce text, video, and images from around the world. Through the magnet program, students will gain the tools necessary to resolve the challenging dilemmas that fill today's high-stakes, high-speed world by dissecting the decision-making process. In a real-world

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context, students will identify true problems: hard choices between two right answers, not between right and wrong. The goal is to foster an atmosphere where ethical dilemmas can be solved honestly, openly, and ethically.

Similar to the Middle River MS MYP program, students will receive instruction in the eight MYP subject areas to engage students in learning experiences that have a context in, and are related to, real-world experience, and expose students to global perspectives to help foster a common understanding of humanity and a shared guardianship of the world. These contexts are provided through one or more interdisciplinary units provided at each grade level. The magnet program will focus the interdisciplinary units on topics of global ethics related to identities and relationships, personal and cultural identity, orientations in space and time, scientific and technical innovation, fairness and development, and globalization and sustainability. As part of the language acquisition requirements of IB, all students at Windsor Mill will participate in a minimum of 50 hours of Spanish instruction each year. Students will be able to enroll in Spanish 6, 7, and 8 for which they can earn high school elective credits.

For example, in a Grade 7 unit, students might examine the issues and ethics of community safety by researching topics related to community patrol, police relationships, gun control, and community action. Student research would explore the essential question: how can communities design and implement grass-roots programs to promote safe neighborhoods while taking the rights of individuals into consideration? For example, students may read Outcasts United, a novel about a team of refugee boys, the woman who coaches them, and the town that is learning to handle its transformation from a sleepy town to a refugee town. A final student project would have students addressing a problem in a community with a positive, activist-based solution that

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responds to the ethical dilemma such as by developing a grant proposal narrative, mounting a fundraiser, making presentations to local and state leaders, or creating a public service announcement using the school's broadcast studio.

As in Middle River, the interdisciplinary units will be developed by collaborative, cross-content teams and implemented on the same schedule (at least one interdisciplinary unit at each grade level in Year 1, two units developed and implemented in Year 2, three units by Year 3, with the remaining two years dedicated to revision and refinement of the units). All units will be directly aligned with CCSS and BCPS curriculum standards and will engage students in project-based independent and group work learning to research global issues. As a culmination to each unit, all students will create and present a product to an authentic audience that demonstrates their research, understanding, and solutions to the global challenge and/or essential question. Students will be empowered to choose the communications format they will use to present the topics (e.g., videos, blogs, reports, poster sessions). Similar to a dissertation process, student groups will defend their research to an audience of their peers who will pose questions to challenge or confirm the research. At the end of each unit, each grade level will hold a showcase of learning for the community to highlight research through gallery walks and mini-presentations.

By the end of Grade 8, all students will develop and implement a personal MYP project that builds upon the research and inquiry-based learning conducted in the interdisciplinary units. An example of a personal MYP project might be the study of homeless populations and our ethical and moral duty to provide care to the homeless. Students might create plans for resolving this challenge, such as providing portable shelter for homeless people to protect them from excessive

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cold when other shelters are full, or research safe and healthy housing for refugee populations, for which the student would develop shelter blueprints.

To connect classroom learning to real-world experiences related to global ethics and communication, Windsor Mill will provide opportunities for students to attend field trips designed to provide authentic learning opportunities on a variety of global issues. A trip to the Newseum in Washington, D.C., for example, would focus on First Amendment Rights with an emphasis on the freedom of the press. Other field trip opportunities may include local media outlets, such as BET, BCPS TV, MPT, and the Baltimore Sun.

Finally, the magnet program will provide students with opportunities to participate in new, **thematic-based elective courses** at Windsor Mill that are not available in other BCPS middle schools. The elective courses will be developed beginning in Year 1 and phased in over the MSAP funding period. By the end of the grant, students will be able to enroll in a vertical pathway of up to three global communications electives that will extend learning emanating from the interdisciplinary units. Examples of some of the elective courses that will be developed and implemented by Windsor Mill teachers are:

- **Communication Theory:** An introductory course about the history of communication. Students will learn about the role and effect of communication on society and how communication between age groups, racial groups, and social classes differ, and they will learn the importance of communication and its effect on a targeted audience.
- **Broadcast News Writing:** An intermediate course in writing news scripts for live broadcasts. Students will learn how to write a news story, daily announcement, or breaking news update for a targeted audience within an allotted time frame. In this

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course, students will learn how to speak and read clearly in order to present information effectively and succinctly using the school's broadcast studio (described below).

- **Television Production:** Students will learn the fundamentals of studio production by working with camera equipment, creating their own short news videos, and using online and offline production techniques. The course will provide students with hands-on training and the opportunity to work behind the scenes of a TV studio to see how the technical side of broadcasting works when producing a TV show or newscast. Windsor Mills' broadcast room is equipped with three cameras, mixing board, volume board, green screen, and teleprompter and is currently used for production and broadcast of a school-wide news program. With funding from the MSAP, the studio will be updated with state-of-the art equipment.
- **Drone Technology and Aerial Photography:** Students will learn the various aspects of drone technology and aerial photography by working with equipment and software at various user levels. Students will learn how to capture cinematography-style footage for school and other events and to produce videos on a variety of global topics. Students will learn FAA rules and regulations and their impact on drone technology and aerial photography.

Parents will be invited to experience showcases of student learning from the magnet program during Back to School Nights, Family Nights, Magnet and STEM Fairs, and viewings of student-made videos and broadcasts. The magnet team will work with students to conduct presentations of learning during these events and create video productions of the events that will be posted on the school website. The magnet team will also make presentations and show student-made videos

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during PTA meetings, Family Nights, and other school events. The magnet team will encourage parents to volunteer to participate in magnet program activities and events.

New Town High School: Magnet School of Global Citizenship

The whole-school magnet program at New Town High School will be designed with the values expressed by George Santayana that “a man’s feet should be planted in his country, but his eyes should survey the world.” The magnet program will engage students in a rigorous, academic pathway of study that includes the IB MYP in grades 9-10 and the DP and CP in grades 11-12. The IB program will provide a thematic focus on **global citizenship**.

The MYP will follow a design similar to the MYP at Windsor Mill MS to engage all students in grades 9-10 in interdisciplinary units of study that focus on IB global contexts and global citizenship in each of the eight IB-required subject areas—language and literature, individuals and societies, sciences, mathematics, arts, physical and health education, and design (technology). The interdisciplinary units will provide opportunities for students to research and explore topics related to global citizenship.

Two to three interdisciplinary units will be developed by a collaborative team of teachers in each year of the grant and will be fully-aligned with CCSS and BCPS curriculum content. For example, for grade 9, students might engage in a unit on the topic of Global Identity and Home, in which they research the essential question, *How is a person’s identity connected to the idea of home?* Another ninth-grade unit might examine the Human Experience and Loss of Innocence through the essential question, *In what ways is the human experience universal?* For both of these units, students will conduct learning and research in English Language Arts, Biology, Government, Language Acquisition, and Art. In grade 10, sample units might include a study on

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Global Freedom and Oppression in which students examine how individuals' attitudes, beliefs, and values help shape their culture; how freedom from political and religious oppression, and other social forces transforms identity; and whether the struggle for freedom is a universal truth.

As part of these units, students will be able to participate in real-world experiences, field trips, and hands-on extensions of the interdisciplinary units related to the magnet theme. A partnership with the Baltimore County Department of Health and Human Services will provide students with access to guest speakers who will address community issues, connections with internships, and service learning projects, and will provide PD for teachers.

As part of the MYP, all students will engage in a personal project that will require students to conduct research based on the IB theme of Global Citizenship. Each student will select a topic for a project that will focus on a community issue that has global implications (e.g., malnutrition and the lack of access to fresh produce). The development of the project will begin in grade 9 with students completing research and collecting data by the middle of grade 10. The project will be presented to an IB panel in December of grade 10. Students will be provided with ongoing reflection and feedback on their projects at assigned intervals.

In addition to the MYP instruction and interdisciplinary units, the magnet program at New Town HS will provide **magnet elective courses for all students in grades 9 and 10**. Some of these elective courses, which will be developed in Year 1 of the grant, may include: Advanced Art, Interactive Media Production/Digital Art, and Freshman IB Seminar and Sophomore IB Seminar. The IB Seminars will focus on acquiring a positive mindset to accept the rigor that is a part of high school, communicating ideas with others, working successfully in collaborative groups, and understanding how to present strengths and show growth over a year, using Covey's

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The 7 Habits of Highly Effective Teens as a central text.

New Town HS currently offers the AVID program to help students prepare for the rigorous academic coursework offered through the DP and to enable all students the opportunity to enroll in DP courses. AVID teaches skills and behaviors for academic success, provides intensive support with tutorials and strong student/teacher relationships, creates a positive peer group for students, and develops a sense of hope for personal achievement gained through hard work and determination. In order to support enrollment in DP courses by Year 3 of the grant, New Town HS will ensure that all students are exposed to AVID instructional practices, either through the AVID elective or schoolwide instructional strategies using AVID's WICOR framework.

At the end of the 10th-grade year, students will be able to enroll in the IB DP or CP. A minimum of 12 required IB courses will be offered in the following subject areas: English, Spanish, Individuals and Societies (American Government, U.S. History, or World History), Experimental Sciences (Biology Higher Level or HL, Chemistry Standard Level or SL, or Physics SL), Math SL and HL, and Arts (Art and Design and Music Theory). Completion of six required courses, two additional required IB Theory of Knowledge courses, an extended essay, and a 200-hour service learning project will be required for students to become a diploma candidate. Students will receive a diploma after successfully passing a set of external IB assessments. Students who are not in the DP will be able to enroll in IB courses for a certificate.

The CP is a framework of international education that incorporates the values of the IB into a unique program addressing the needs of students engaged in career-related education. CP students take a minimum of two DP courses, a core consisting of four components (personal and professional skills, service learning, reflective project, and language development), and a career-

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related study. For CP students, DP courses provide the theoretical underpinning and academic rigor of the program; the career-related study further supports the program's academic strength and provides practical, real-world approaches to learning; and the CP core helps them to develop skills and competencies required for lifelong learning. At New Town HS, CP pathways will be offered in areas of biomedical sciences, Cisco IT Networking, digital media (including website design, graphic design, and multimedia arts and production), and nutrition sciences. In each pathway, students will complete a series of courses and participate in real-world career exploration experiences, including internships and job shadowing.

Parents will be engaged in the IB program through informational meetings for community members, presentation of information about the magnet program during Freshmen Orientation and Back to School Night, and dissemination of information through telephone and email using BCPS's Connect-Ed communication system. Additionally parents will receive ongoing communication about the program through social media, magnet program newsletters, postings on the school website, and parent conferences. Parents will also have opportunities to participate in parent workshops to learn about IB instructional practices and how students can apply IB coursework in college.

Golden Ring MS: Magnet School of Health Sciences

Through funding provided by the MSAP, Golden Ring MS will transform into the Magnet School of Health Sciences. Golden Ring MS, a 6-8 middle school located in the northeast area of Baltimore County, will develop a whole-school magnet program that engages students in the study of health science topics through interdisciplinary thematic units, theme-based elective courses, schoolwide traits and characteristics, and integration of the National Health Science

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Standards (NHSS) that were developed in May 2015 into core content instruction. The transition to a health science magnet program will transform teaching and learning at Golden Ring by embedding inquiry-based learning approaches throughout the curriculum, offering ongoing staff development and collaboration to incorporate innovative teaching strategies, and fostering strong partnerships with experts in health science fields. Students who graduate from Golden Ring will have the opportunity to automatically continue in a vertical pathway of study in the new health sciences magnet program at Overlea HS.

In addition to the school-wide health and wellness science unit teachers will also develop and implement grade-specific interdisciplinary units to engage students in inquiry and project-based learning to examine health science issues through core content areas. All units will be fully aligned with CCSS, NGSS, BCPS, and state standards. In these learner-centered classrooms, teachers will serve as facilitators, or guides, in the learning process. An example of an interdisciplinary unit entitled *Outbreak* will engage students in the exploration of a fictitious outbreak of a disease such as a virus like Zika. Each grade level will have a different disease and various tasks based on the grade-level curriculum. The unit will include an interdisciplinary examination of the topic, including discussion of the methods of transmission, diagnosis, prognosis, and treatment in science; mapping the geography of the outbreak in order to determine the concentration and ‘epicenter’ of the outbreak in social studies; graphing data to present trends of the outbreak in math; and drafting a service announcement to the public regarding the outbreak and its prevention in language arts. Other interdisciplinary units may include *911 Emergency*, in which students use their knowledge of first aid and apply it to an emergency drill situation, and *The Royal Family*, where students can study the lineage of a

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family that had hemophilia and its impact on the succession of the family's reign in England.

Each unit would include a Career Choice exploration component, in which students select a health-related career and attend an in-person or virtual informational session with a professional in the field of their choice and conduct interviews with professionals through partnerships with JHBMC, Johns Hopkins Bloomberg School of Public Health, JHMSC, and the Baltimore County Department of Health and Human Services.

Starting in Year 1 of the grant, all students will participate in at least one interdisciplinary thematic unit. In Year 2, students will participate in at least two units and by Years 3 through 5 in three units per year at each grade level. During the planning phase of the interdisciplinary units, content area teachers, the magnet coordinator, as well as the Health Science teacher will work together to identify the NHSS Standards that are relevant to each grade level in order to ensure interdisciplinary units are written with these standards as the foundation.

The NHSS will also drive the instruction in **new Health Science elective courses** to be developed and implemented at Golden Ring. Elective courses could include:

- **Introduction to Allied Health.** In this course, students will study human anatomy, medical terminology and process, and first aid and safety practices, and will explore career options in allied health sciences.
- **Anatomy and Physiology** will provide a comprehensive overview of human body systems and stress both the structure and functioning of those systems. Students will also explore biomedical therapy and disease and disorders.
- **Applications and Ethics** will extend the application of concepts learned in previous electives and knowledge of the medical profession by delving into medical ethics and

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legal responsibility. Students will present their research through in-class debates and moot court activities.

- **Health Science Careers** will introduce students to medical terminology and engage them in studies of human organ systems and related health care skills, such as first aid and CPR. Students will explore health science systems and careers to better understand the skills and educational backgrounds needed to pursue jobs in a variety of medical fields.

The elective courses will be developed as a pathway of health science study; however, students will be able to enroll in one to three of the electives based on interest. Embedded within each course each year, students will use effective communication skills, improve writing skills, and develop an understanding of health professional traits and employability skills.

Golden Ring students will have the opportunity to extend their knowledge of current health science topics and investigative tools and techniques through a partnership with Towson University Center for STEM Excellence and the SciTech Learning Lab. Over the course of three years, students will visit the SciTech Learning Lab and participate in unique laboratory activities, aligned with Maryland State Curriculum, that are based on real-world problems and issues, allowing students to engage in scientific and engineering practices while learning content in new and challenging ways. Examples of the laboratory activities currently offered include: DNA Extraction, where students explore the role and function of DNA in living organisms by extracting DNA from fruit; Mystery of the Crooked Cell, in which students use gel electrophoresis to determine whether a patient carries the gene that causes sickle cell anemia; and Natural Products, in which students investigate anti-microbial properties of different plants using bioluminescent bacteria.

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The Health Science magnet theme will also be infused throughout the school with the adoption of traits and attitudes expected of health professionals as the Core Characteristics of Golden Ring MS students and staff. The characteristics will include: willingness to learn, being prompt and prepared, acceptance of criticism, dependability, responsibility, empathy, discretion and tact, enthusiasm, integrity and honesty, self-motivation, initiative, patience, being a team player, competence, flexibility, and having a positive attitude. The characteristics will be highlighted through morning announcements, posted throughout the building, and integrated into instructional lessons in all content areas. By adopting these characteristics school-wide, the magnet program will establish a culture of professionalism and excellence that is required and expected of health science professionals and will benefit students in any career field of choice.

Golden Ring MS students and staff will participate in a school-wide book study each year furthering the theme of health sciences, such as The Hot Zone by Richard Preston. The book tells the account of a fictitious outbreak of the Ebola virus in the suburbs of Washington, D.C. Students and teachers will discuss the impact of the virus and possible preventive measures or solutions to the outbreak if it occurred in real life. The book study will culminate in a celebration with professionals working in a related field of study from identified partnerships including Johns Hopkins Bayview and the Baltimore County DHHS.

Golden Ring MS staff will use a multifaceted approach to engage parents in the new magnet program, including parent workshops on theme-related content and topics such as community health and first aid, as well as through presentations at PTA meetings, newsletters, social media, and the school's website. Family members will be invited to showcases of student learning during Open House nights, parent information nights, and magnet expositions. Staff will develop

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a magnet section of the school newsletter where updates and information can be highlighted and develop a magnet message for BCPS ONE magnet announcements and updates. Parents will be invited to provide ongoing feedback about program offerings and activities through town hall meetings, social media, surveys, and parent conferences.

Overlea HS: Health Sciences Magnet School

Overlea HS will use funding provided through the MSAP to significantly revise its existing within-a-school Academy of Finance magnet program into a whole-school Health Sciences magnet. The new magnet program will provide opportunities for students who graduate from the magnet program at Golden Ring MS to continue their studies in this area, as well as for other students across the County interested in the magnet theme.

Advances in biosciences and biomedical technology continue to drive new innovations in patient care and require stronger relations between industries in developing, testing, and implementing new products and services. The magnet program at Overlea HS will center on integration of health sciences and biomedical technology content into core subject areas through interdisciplinary units and the development of three new magnet course pathways to help prepare students with a strong foundation for the challenges of advanced studies and careers in these fields. Students will be introduced to the concepts, techniques, and teamwork utilized in healthcare biotechnology and research investigation. Students will also have opportunities to apply interpersonal and technical skills while participating in internships.

Additionally, the development of a school-wide focus on biomedical technology will serve as a catalyst to embed inquiry-based learning practices to transform teaching and learning throughout the school. Spearheaded by the science department, in Year 1, teachers will begin to

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map the Biomedical Technology course pathways to other core subject area content to create units of study that focus on topics of biomedical technology through project-based learning strategies, research strategies, digital learning, data analysis, and close reading and writing strategies. For example, the required BCPS health curriculum will be enhanced to include a student research project for the unit on disease and disability. Students may research infectious diseases and the growing fear of bioterrorism and a pandemic flu, and how scientists are using biomedical technology to develop new diagnostic tools for rapid and sensitive detection of pathogens. The theme will also be integrated into the required Biology curriculum through a service learning project in which students will investigate local biomedical issues, such as asthma or airborne allergens, and examine how biomedical technology can address their impact.

Additionally, all 9th grade students will complete a research project in which they will work in teams to research a biomedical technology application and create a multi-media project proposal for the application. Students will assess the applications based on societal need/benefits, technical considerations, resource availability and environmental impact, financial considerations and economic impact, and ethical or moral implications. To support student learning in the units, Overlea HS will collaborate with Golden Ring MS to partner with local health agencies, including JHBMC, JHMSC, and the Baltimore County DHHS, to host annual interactive community health fairs. Overlea HS will also actively pursue the creation of an on-campus community wellness clinic in partnership with the Baltimore County DHHS.

In addition to the school-wide thematic units, students will be able to enroll in elective courses in three new pathways: Dental Assistant, Physical Therapy, and Biomedical Sciences.

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Table 11: Overlea HS Magnet Pathways

Pathway	Grade 9	Grade 10	Grade 11	Grade 12
Dental Assistant	Anatomy & Physiology	AHP 1- Foundations of Medicine and Health Science AHP 2 - Structures and Functions of the Human Body System	AHP 3 - Medical Specialty – Dental Assistant AHP 4 – Dental Assistant Internship	Related Internships and/or AP Science Courses
Physical Therapy	Anatomy & Physiology	AHP 1- Foundations of Medicine and Health Science AHP 2 - Structures and Functions of the Human Body System	AHP 3 - Medical Specialty – Physical Therapy AHP 4 – Physical Therapy Internship	Related Internships and/or AP Science Courses
Biomedical Sciences	Honors Biology	Anatomy & Physiology Biotechnology	Honors Physics, Honors Forensics, AP Biology or AP Chemistry	Microbiology, AP Biology, AP Chemistry, AP Physics, Biotechnology Internship

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The elective pathways and the course offerings will afford students unique opportunities such as Foundations of Medicine and Health Science, which provides an overview of the therapeutic, diagnostic, environmental, and information systems of the healthcare industry; and Academy of Health Professions (AHP 1 and 2), which use inquiry and project-based learning, clinical and internship experiences, and classroom and lab instruction to teach students about the field of healthcare. In addition, the new Biotechnology course combines science research techniques and hands-on laboratory activities to study molecular biology, genetics, recombinant DNA, protein synthesis, aquaculture, hydroponics, biological pest management, electrophoresis, DNA fingerprinting, environmental and ecological management techniques, and bioethics. The pathways will include opportunities for internship in a professional healthcare setting (e.g., hospital or physician's office), an independent research internship with a mentor from a scientific or medical institution or company, and/or opportunities to present their research results to professionals from the scientific or medical community. Students pursuing the full Dental Assistant program can earn further certifications by passing the Dental Assisting National Board Radiation Health and Safety (RHS) and Maryland General Exam (MDG). Additional elective course offerings that will be available to students at Overlea HS by Year 3 of the grant will include Medical Photography and Drawing, Technical Writing, and Emerging Biomedical Technologies and Biometrics.

In each year of the grant, students will have opportunities to extend their knowledge of current health science and biomedical topics in SciTech Learning Lab at Towson University (as described above). Examples of the relevant laboratory activities currently offered include: Crucial Concentration, in which students determine the concentration of protein in different

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sports drinks; and Wildlife Forensics, in which students use DNA gel electrophoresis to test whether tissue confiscated by U.S. Customs officials comes from a great white shark.

Starting in the Year 2 of the grant, JHBMC will partner with BCPS to provide support for Overlea HS students and teachers. Examples of the opportunities available through JHBMC will include: guest speakers to discuss new topics in biomedical and clinical laboratory technology, site visits and service learning opportunities at the JHBMC campus, and mentorship and internships for teachers through PD. Additionally, Overlea HS has developed a partnership with the Community College of Baltimore County (CCBC) Essex to offer opportunities for student enrollment in the Health 101 course and other courses on the Overlea HS campus and at CCBC via a dual enrollment agreement. Overlea HS is also actively pursuing partnerships with local professional sports organizations and the University of Maryland, School of Dentistry to provide learning experiences including guest speakers/teachers, internships for students, and summer externships for teachers.

District-Level Family and Community Connections

BCPS understands that parents play a critical role in supporting students to reach their academic potential, and thus has built a **strong parent and family engagement strategy** into the magnet program. The Marketing and Recruitment Supervisor and Site Magnet Coordinators will take an active role in convening parents to participate in various activities that will support their involvement in the magnet initiative and school choice process. Such activities will include parent meetings, topical workshops related to the magnet themes, and family events. Parents will be involved into the Makerspace Labs to observe magnet activities and student learning products. The labs will be used to strengthen home-school connections by engaging families in exciting,

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real-world learning experiences during family and community day and evening events held throughout the school year.

BCPS will partner with Discovery Education to provide parent outreach specifically for the proposed magnet schools. Discovery Education will work with each school to customize “Nights of Innovation” open houses to demonstrate how teaching and learning is being transformed in the new magnet programs. Open to the public, these events will allow parents and the community to experience hands-on, interactive learning stations; examine innovative student work; and explore classrooms that exemplify learner-centered environments. Capacity building is built into the Discovery Education model in which students serve as ambassadors for sharing and disseminating concepts learned in magnet instruction and teachers participate in job-embedded training so they can turnkey the practices learned to peers and other stakeholder groups.

Parents of students in the BCPS magnet schools will be asked to provide support to the outreach and recruitment efforts designed to attract new students to the magnet schools. Parents will be recruited to speak to prospective families about the magnet program during open houses, school tours, and other District- and school-level outreach events. Furthermore, parent feedback will be solicited throughout the school year by administering parent surveys, facilitating question-and-answer sessions at meetings, participating in PTA and School Improvement Team meetings, and informally communicating with parents at school-wide family events. Parents will also directly support school-wide decision making through participation in Magnet Program Advisory Committees.

The Baltimore County Parent Teacher Association will work to create a Magnet Program Foundation to support students and teachers in pursuits related to the theme, possibly using a

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Magnet Program Booster model. For example, the Foundation may support theme-related scholarships for teachers to work at school/community partnership sites in the summers. Additionally, the Foundation may sponsor after-school, theme-related clubs, such as the Kids Can Make a Global Difference and Environmental Advocacy Activist clubs

(2) The Secretary considers the extent to which applicant demonstrates that it has the resources to operate the project beyond the length of the grant, including a multi-year financial and operating model and accompanying plan; demonstrated commitment of any partners; evidence of broad support from stakeholders (e.g., State educational agencies, teachers' unions) critical to the project's long-term success; or more than one of these types of evidence.

BCPS is strongly committed to promoting diversity and parental choice through magnet program offerings. Since 1993, BCPS has operated a large system of magnet programs, most of which were created with funding through the MSAP and have been sustained with local funding provided through the OMP in the Superintendent's budget. BCPS is pursuing the MSAP grant now in response to strong recommendations from the external audit and internal Magnet Task Force for the need to expand magnet program options in order to increase equity of opportunity across the County.

All four of the whole-school magnet programs that BCPS established with MSAP funding provided during the 2004–07 funding cycle have been sustained and expanded. These programs include: Chesapeake HS Magnet Academies in Arts, Multimedia and Communications, Business and Information Technology, Leadership and Humanities, and STEM; Lansdowne High School, Magnet Academies in Arts and Communications, Health and

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Human Services, and Science, Engineering and Information Technology; Lansdowne MS Career and Professional Studies magnet program; and Deep Creek Middle Magnet School of 21st Century Digital-Age Learning. BCPS's OMP provides financial support to the schools through its budget to help the school replenish supplies and equipment. Additionally, each of the principals commit resources from the school-based budgets to support the unique programming needs of the magnet themes and to conduct school-based outreach and recruitment activities.

The BCPS Office of Transportation allocates substantial resources each year to provide free bus transportation to students who reside outside of the attendance zone of the magnet program they attend. BCPS is committed to ensuring the students have equitable access to magnet programs and participation is not limited by or contingent on transportation. As stated in the Desegregation section, BCPS is committed to providing transportation for the magnet programs proposed in this grant, at no cost to the grant or BCPS families.

Commitment of Schools to the Magnet Planning Process

Each school selected to participate in the new magnet initiative engaged in a broad-based, collaborative planning process in developing its program. To structure the process, each school established a magnet planning team composed of teachers, staff, administrators, and parents, and carried out several school-based planning activities to solicit the input of all key stakeholders in the design. The school-based teams met individually with the District planning team several times during the planning process to: provide updates and get feedback and support in designing their programs, ensure that the plans aligned with the District vision and goals for the grant, and to leverage partnerships and resources that were common to schools within each of the two vertical magnet pathways.

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Recognizing that awareness and buy-in at the proposal development stage would set the stage for a seamless transition to implementation, each school-based planning team asked parents and teachers to indicate their support for the magnet program. Table 12 shows the number of parents and staff in each school who expressed support for the magnet program (see documentation in Attachments).

Table 12: Number of Parents and Staff Who Signed Support Forms for Magnet Programs

School	Parents (N)	Staff (N)
Woodmoor ES	157	52
Golden Ring MS	247	42
Middle River MS	118	49
Windsor Mill MS	342	50
Overlea HS	162	48
New Town HS	41	42
Total	1,067	283

Moreover, as highlighted throughout this proposal and as evidenced in letters of support attached (see Attachments), BCPS and the individual magnet schools have garnered **support for their proposed programs from external partners**, including IBO, i2 Learning, Towson University, St. Mary’s College, JHBMC, Modern Teacher, and others.

Capacity-Building Strategies to Support Sustainability

BCPS will institutionalize its magnet programs through strategies that are built into the program development process, including developing and disseminating innovative curricula,

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offering extensive PD and support to its magnet teachers and school leaders, building strong and lasting collaborations with outside partners, and working with parents to enhance their decision-making roles. These capacity-building activities will provide a fertile environment in which the successful project components will continue to flourish after federal magnet funds expire. In recognition of the fact that school redesign initiatives generally take several years to produce results, BCPS will target the use of magnet funds to provide a solid foundation for sustainability. Planning efforts will begin in the initial program year and continue over the five-year grant period to ensure a smooth transition into post-funding implementation.

A key support in building strong and sustainable magnet programs will be a partnership between BCPS and the Magnet Schools of America (MSA) National Institute for Magnet School Leadership (NIMSL). NIMSL will provide a series of workshops for District- and school-based magnet staff based on MSA's Pillars of Magnet Schools, which is a comprehensive set of Standards of Excellence that contribute to exemplary magnet programs. Through the workshops, which will use a variety of tools—including research briefs, Tedtalks, group think tanks, and review of exemplar programs—District- and site-based leadership will work to expand their knowledge of best practices for magnet programs, reflect on their practices, and develop strategic plans for ensuring that the performance goals of the magnet programs are achieved. These will include plans for outreach and recruitment, innovative curriculum and PD, high quality instructional systems, and family and community partnerships. Through the partnership with NIMSL, the magnet schools will integrate Standards of Excellence for magnet programs into all aspects of program development to create effective and sustainable magnet programs designed to improve student achievement and other important outcomes.

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Ongoing Funding Commitment

As outlined in the Management Plan, BCPS and each of the magnet schools are committing to provide significant in-kind resources to support the development and implementation of the magnet programs throughout the five-year grant period. The in-kind staff resources provided by the District and the schools will continue after the MSAP grant period in order to ensure that the programs are sustained and effective to support the long-term performance measure (#4) established by U.S. DOE for the MSAP. Once the federal funding ends, BCPS is committed to continuing to provide local support through funding from the Superintendent's budget for magnet programs and allocated through the OMP.

The six magnet schools receive funding from federal, state, and local funding sources that are aligned with the MSAP objectives and that may be used to help sustain magnet programming. For example, Title I funding for elementary and middle schools is used to support schools in efforts to reduce achievement gaps, increase parent involvement, and build teacher capacity through program monitoring and technical assistance. Additionally, BCPS's Office of Title I provides differentiated support to schools, including supplemental research-based assistance in instruction, data analysis, professional learning, and family and community engagement. The schools also receive Title II funding, which supports improvement of teacher, paraprofessional, and principal quality through high quality PD in the core academic subjects and in improving classroom practices. Each of the proposed magnet high schools receives federal Perkins funds to support Career and Technical Education programs, including the Career, Research and Development, Child Care Services, and Business Management and Finances programs. With support from the OMP, each magnet school will seek out additional

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funding sources to replenish supplies and equipment needed for the programs and continue to provide student field experiences related to the theme. Additionally, as described earlier, the county PTA will work with each school on Magnet Program Foundations to the program using a magnet program booster model.

(3) The Secretary considers the extent to which the training and professional development services to be provided by the proposed project are of sufficient quality, intensity, and duration to lead to improvements in practice among the recipients of those services.

Research on effective teacher PD suggests that training should be intensive, supportive, engaging, content-specific, and aligned with school improvement goals. A meta-analysis of nine experimental studies of teacher PD found that the duration of PD was positively associated with changes in teacher practice and student learning. (Darling-Hammond et al., 2009). PD strategies that provide job-embedded support through coaching are highly effective in providing opportunities for teachers to implement and master new skills (Knight & Cornett, 2009). Furthermore, expert demonstration of a new skill, through modeling, has proven to be an effective technique for teacher learning (Snow-Renner & Lauer, 2005; Desimone et al., 2002). It is equally important that teacher PD be highly engaging and applicable to instruction, such as by employing varied approaches including role playing, classroom observations, and discussions to help teachers see and make direct connections to their own teaching practices (Garet et al., 2001; Yoon et al., 2007).

Research also suggests that teachers benefit more from PD that is directly tied to discipline-specific concepts which they can easily apply in their own classrooms (Darling-Hammond, et al., 2009), and that discipline-specific PD has been shown to have strong positive impacts on student

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learning (Blank, de las Alasm, & Smith, 2007). PD has also been shown to be more effective in improving teachers' knowledge and skills when it is integrated into a wider set of opportunities for teacher learning and development (Garet et al., 2001).

The PD plan for the BCPS magnet initiative will provide experiences that are of sufficient quality, intensity, and duration to lead to improvements in teacher practice. In order to support the transformation of teaching and learning across the six magnet schools, BCPS will provide intensive PD to school leaders, MSAP-funded staff, classroom teachers, and other support staff in each school. The training will focus on evidence-based instructional strategies that will equip teachers with knowledge and skills to conduct inquiry-based instruction, develop and implement interdisciplinary units, and integrate project-based learning into learner-centered environments. BCPS will develop strong and ongoing partnerships with well-respected and qualified organizations, including Modern Teacher, IBO, Discovery Education, i2 Learning, NIMSL, and Touchstone Discussions Project, whose staff development programs have proven effective based on practice and research. Descriptions of these PD partnerships are presented later in this section.

BCPS understands that opportunities for teachers to gain exposure to new concepts from educational experts are important; yet are not entirely impactful if they are not supported by **ongoing and job-embedded professional learning**. As such, the magnet initiative includes structures to foster ongoing, peer-supported learning provided by the MSAP-funded Project Specialist and Resource Teachers (whose roles are described in the Management Plan and Quality of Personnel) and through effective use of school-based professional learning communities (PLCs) and job-embedded coaching. The Project Specialist will provide ongoing

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assistance to the magnet staff across each school to implement PD plans that provide support for classroom teachers. The Resource Teachers will be responsible for providing the support through coaching, co-teaching, and lesson modeling, as well as identifying instructional resources and assisting with curriculum development. The Resource Teachers will also help facilitate conversations in grade-level and/or subject-level PLCs about implementation of magnet curricula and instructional practices highlighted through magnet staff development. During the PLCs, teachers will share best practices, lessons, and curriculum connections that are inquiry- and project-based in order to create a collection of resources for teachers. The job-embedded coaching will expand teachers' exposure to concepts provided during training and create a culture that fully supports the transformation of teaching and learning.

With the comprehensive plan for PD, all MSAP-funded staff and school leaders and instructional staff in each of six magnet schools will be exposed to a minimum of 50 hours of PD for each year of the grant in inquiry-based instruction, project-based learning, and interdisciplinary approaches. As a result, teachers and staff will demonstrate increased collaboration in developing and implementing interdisciplinary instructional units of study and use of inquiry and project-based instruction (as outlined in Quality of Project Evaluation). Collaboration will be supported within and across the six magnet schools with development of a District-level website (i.e., WikiSpace) that allows teachers to share resources and ideas they can incorporate into their lessons.

Modern Teacher is an educational company designed specifically to provide a research-based methodology for supporting schools in transforming into 21st century learning environments that support inquiry-based instruction. For the six grant schools, Modern Teacher

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will provide training and coaching to support the development of instructional strategies, tools, and professional learning to address the complexities of designing effective inquiry-based units and lessons.

At the onset on the grant, Modern Teacher will conduct onsite strategy and leadership sessions to implement a comprehensive needs assessment in order to develop custom professional learning plans for each school. Based on the PD plans, Modern Teacher will provide up to 12 on-site professional learning days in each year of the grant for training, coaching, and curriculum development. Modern Teacher will provide ongoing virtual support to teachers and the MSAP team at each school through webinars, conference calls, and email support. Modern Teacher will also design a series of learning experiences, on-site and virtual, for school leaders and instructional coaches to provide customized training. Lastly, Modern Teacher will develop a customized online platform for BCPS comprising highly engaging, customized simulations and collaboration opportunities for teachers experiencing similar content and training focused on inquiry-based learning and the thematic curricula.

IBO will provide all teachers, school leaders, and student support staff in the four magnet IB schools with Level 1-3 training in IB philosophies and principles to support the development and implementation of IB units for the PYP, MYP, and CP/DP. Trainings will include (1) Level 1 three-day staff development sessions in Year 1 for 40 elementary PYP and 120 middle and high school MYP teachers and staff; (2) Level 2 three-day staff development session for 25 elementary PYP teachers 36 middle and high school MYP teachers in year 2; and (3) ongoing Level 3 training in Years 3 through 5. In all five years, 10 high school teachers will attend IB regional workshops to build capacity across content areas.

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Discovery Education, a national learning organization devoted to innovation in education, will implement the PBL Leader Corps model at Golden Ring MS and Overlea HS to support the health sciences magnet programs. Over the five-year grant, the PBL Leader Corps model will provide sustained, rigorous, and job-embedded professional learning for school leaders and teachers across the two magnet schools to build capacity in the areas of innovative instructional practices and PBL to support differentiated teaching practices. The PD will be scaffolded over the five years. Each year, the PD will include (1) 12 customized trainings for 24 teacher leaders across the two schools; (2) five sessions of experiential PD; (3) the creation of up to 12 Learning Labs at each of the two schools; (4) engaging, interactive PD modules designed to scale the effective integration of technology to all teachers and classrooms; and (5) multiple sessions for school administrators focused on leading the PBL cultural change.

i2 Learning is a national educational organization that partners with institutions of higher education, museums, and research facilities to develop hands-on, research-based curricula for STEM learning in elementary and middle schools. Curriculum partners of i2 Learning include: Massachusetts Institute of Technology, Stanford University, The American Museum of Natural History, The Museum of Science in Boston, Woods Hole Oceanographic Institution, and the Wyss Institute at Harvard. i2 Learning will provide a two-day training each year to a cohort of 32 teachers across the four elementary and middle schools to develop and implement hands-on STEM learning experiences.

Digital Harbor Foundation will provide staff training to support the development and implementation of the new Makerspace labs in each magnet school. Digital Harbor Foundation is a Baltimore-based organization that is dedicated to fostering learning, creativity, productivity,

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and community through education. They created the Center of Excellence in 2014 to train educators how to incorporate making into their own learning environments. In each year of the grant, they will provide training to a cohort of staff from each magnet school on effective integration of hands-on, engineering activities into classroom learning and using the Makerspace lab to foster inquiry-based instruction and enhance the magnet curriculum units.

National Institute for Magnet School Leadership (NIMSL), as described earlier, will provide extensive PD and support in Year 2 of grant to build capacity among school leaders, MSAP-funded staff, and school staff to build effective and sustainable magnet programs aligned with national best practices and magnet standards.

Touchstone Discussion Project will provide customized training to three staff from Windsor Mill MS in each year of the grant to support the integration of the global communications into core content areas. The Touchstones Discussion Project, an educational organization based in Annapolis, provides training to classroom teachers on effective strategies for building listening, speaking, reasoning, comprehension, collaborative problem solving, and teamwork among students. Teachers who participate in the training will provide turnkey staff development during faculty meetings and PLCs.

BCPS Office of Health and Physical Education will provide three PD workshops in each year, at no cost to the grant, on developing and implementing strategies to implement a kinesthetic culture through integration of movement-based activities and lessons into classroom instruction to help increase student focus and improve learning. The strategies are designed to empower students' brains, which will help promote on-task behavior, knowledge retention, and engagement. Teachers will also learn how to use technology, including fitbits and treadmill

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desks, to integrate health and wellness into instruction and analyze data that are collected. Teachers from Golden Ring MS and Overlea HS will participate in workshops together to build collaboration across the health science pathway.

(4) The Secretary considers the extent to which the proposed project is supported by strong theory.

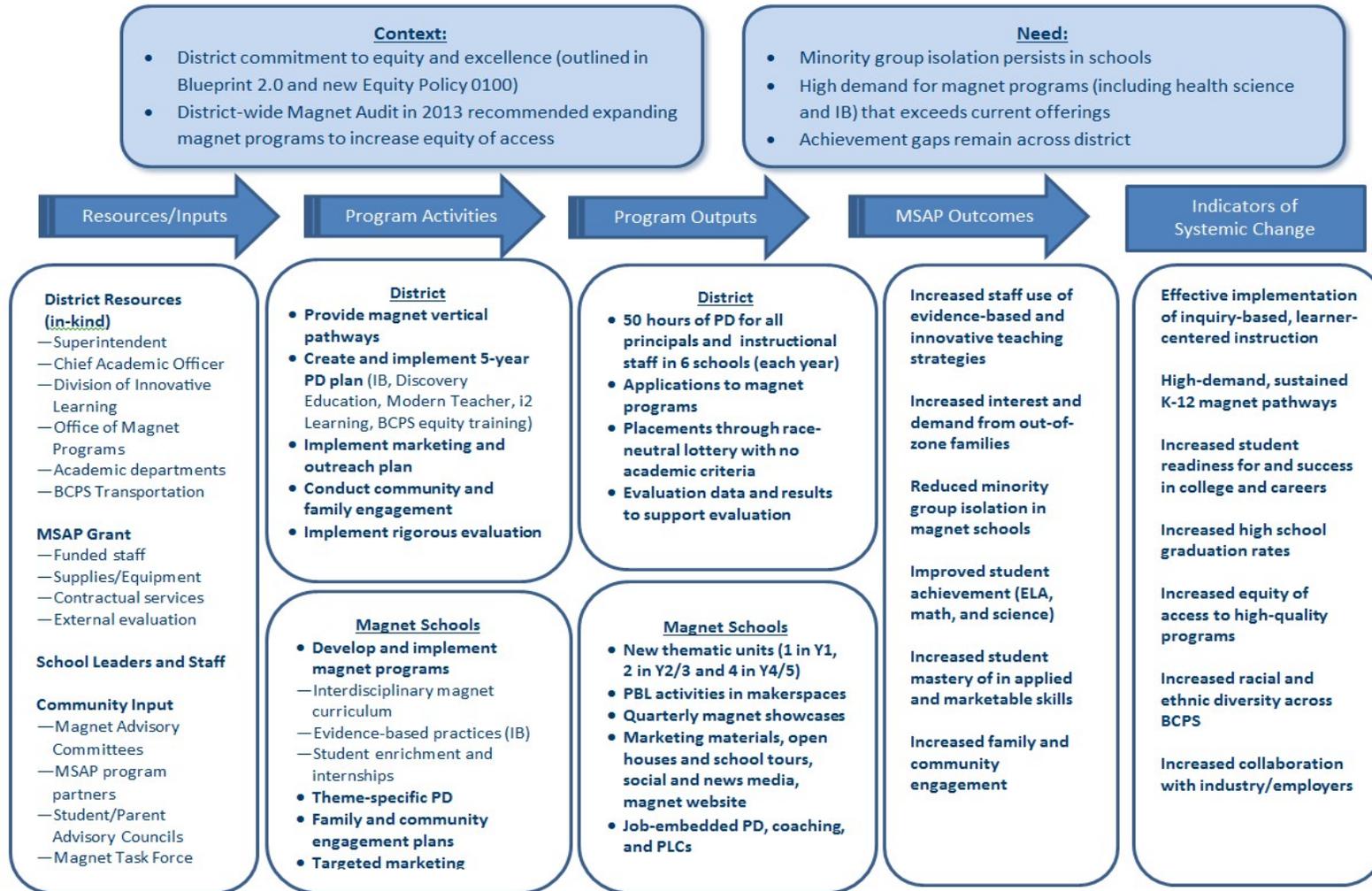
The BCPS magnet initiative is designed with a strong theory of change that is fully aligned with the District's goals as outlined in the *Blueprint 2.0* and will serve to advance the District's mission to increase equity by raising the academic bar for all students and decreasing achievement gaps. **The theory of change states that by transforming teaching and learning in six new whole-school magnet programs through innovative, inquiry-based programs of instruction with a thematic focus, BCPS will increase equity of access to programs of choice, help improve academic achievement and other outcomes for all students, improve teacher knowledge and skills, and reduce minority group isolation among African American students in the magnet schools.**

To support the theory of change, BCPS developed a magnet project logic model which is presented on the following page.

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District Logic Model



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(c) Quality of the Management Plan

The Secretary considers the quality of the management plan for the proposed project.

(1) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks

MSAP Project Management Framework

The management plan for the BCPS MSAP initiative has several core elements that, in combination, will ensure the success of the project and the timely and cost-efficient attainment of all of the project's objectives and performance measures (PMs):

- A leadership and accountability structure in place within BCPS that fosters innovation and rigorous performance standards and provides mechanisms to integrate the new magnet pathways into the District's vision and strategic plan articulated by the BCPS Magnet Task Force;
- An efficient staffing and management structure for the MSAP initiative within and across the six proposed magnet schools, including reporting and accountability mechanisms to ensure the timely, effective, and efficient implementation of all key MSAP activities;
- A detailed project implementation plan to achieve the project's objectives and PMs, supported by a reasonable and cost-effective budget and leveraged in-kind resources designed to promote capacity building and sustainability of the project beyond the federal funding period; and
- A continuous improvement process that engages MSAP stakeholders in ongoing feedback, assessment, and refinement of project activities.

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The **leadership and accountability structure** in BCPS is led by the Superintendent, Dr. S. Dallas Dance, who is responsible for overseeing all aspects of instruction and operations of the District to ensure that all students have equal access to a high quality education. The Superintendent also serves as the liaison to the Baltimore County Board of Education. Upon joining BCPS in 2012, Dr. Dance spearheaded a community effort to develop the *Blueprint 2.0*, the District's five-year strategic plan. To support implementation of the *Blueprint 2.0*, Dr. Dance has worked with District staff and community leaders to institute an array of system-wide initiatives to increase equity and excellence, including district-wide equity training (described in Desegregation section) and S.T.A.T. and Passport Schools (as described in the Quality of Project Design), all of which are well aligned with the goals and objectives of the MSAP.

Dr. Dance is strongly committed to supporting ongoing and open dialogue with the BCPS community both in-person and digitally—a commitment for which his team received the prestigious 2015 Leadership Through Communication Award from the School Superintendents Association, the National School Public Relations Association, and Blackboard. His efforts have served to increase stakeholder participation in BCPS's existing community engagement structures, such as the Annual State of the Schools celebration and annual stakeholder satisfaction surveys; and to create new feedback structures, including the BCPS Parent University and advisory councils, as well as town halls and community forums. Based on input received during one of the first series of community forums conducted during his leadership, Dr. Dance commissioned the district-wide audit of magnet programs which produced the recommendations leading to the current MSAP proposal (see Desegregation section).

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In his leadership and supervisory role, Dr. Dance is advised by a Cabinet of seven District leaders who provide guidance and support on all aspects of District operations. Among these leaders, Chief Academic Officer (CAO) Verletta White will serve to guide the development and implementation of the new magnet pathways through her leadership over all initiatives implemented within the Division of Curriculum and Instruction. Ms. White provides direct oversight of BCPS's eight Assistant Superintendents who supervise principals in the operation of the District's 173 schools and provides management for divisions of Academics, Innovative Learning, Student Support Services, and Special Education. As such, the new magnet pathways will be aligned with curriculum standards and services for students with disabilities to ensure that all students in the proposed magnets have equitable access to high quality magnet instruction as well as a wide array of other student support services.

The MSAP Project Director will work within the Office of Magnet Programs (OMP) to oversee the programmatic and administrative management of the magnet initiative. The OMP oversees the District's system of 111 magnet programs across K-12 and is housed within the Office of Educational Options, which is one of three divisions of the Department of Innovative Learning led by Executive Director Ryan Imbriale under the direction of the CAO. The Department of Innovative Learning is responsible for developing and overseeing comprehensive educational programs to address the needs of a diverse student population through special programs, such as magnets, and by supporting personalized digital learning environments across all schools. The department provides resources and support to the programs to ensure that each program is well designed and implemented in order to raise the academic bar and close achievement gaps. The department is also responsible for coordinating and facilitating the

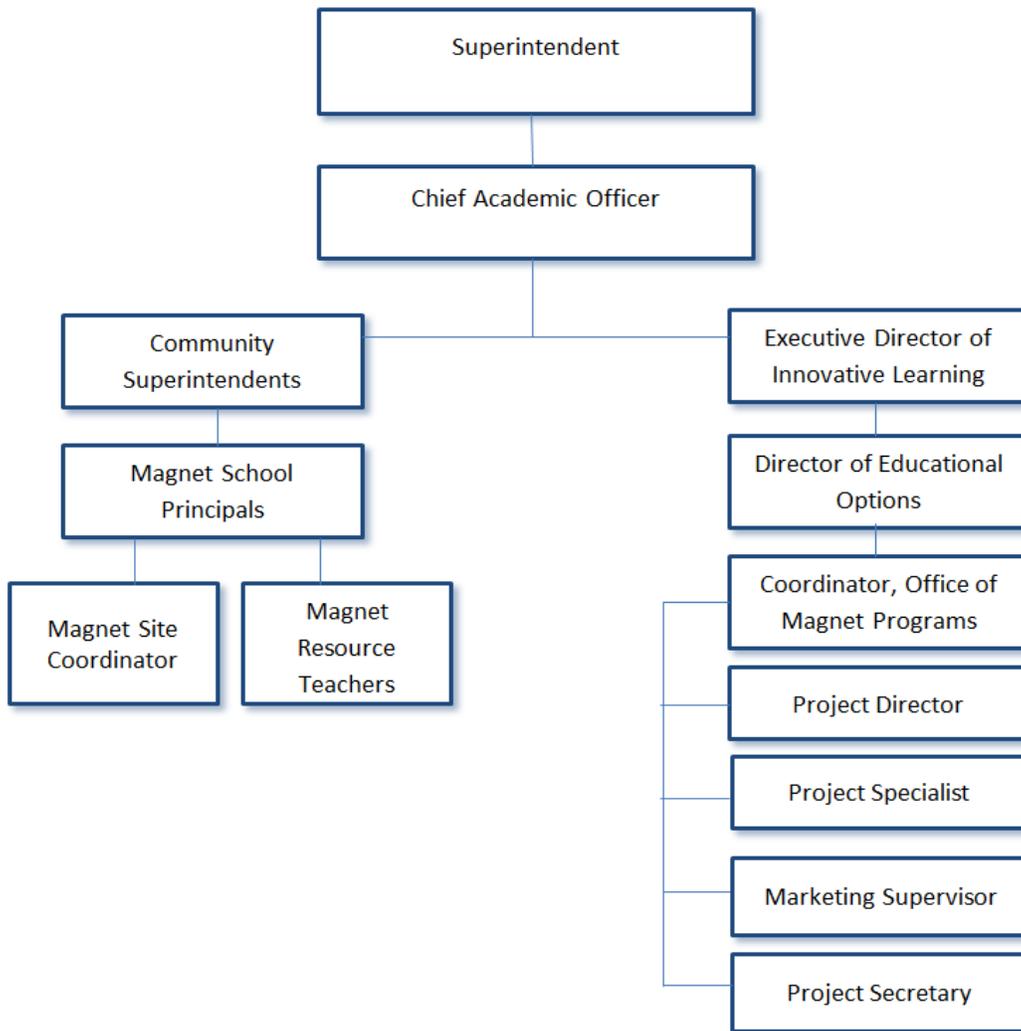
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District’s Magnet Task Force, and acting on recommendations that emanate from the Task Force findings.

The organizational chart below shows the key reporting relationships that touch on the magnet initiative.

Figure 1: Organizational Chart for Proposed BCPS MSAP Initiative



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MSAP Project Staffing and Management Structure

Summarized in the table below is the proposed staffing structure for the BCPS MSAP initiative, followed by a detailed description of the roles and responsibilities of these key funded staff. The staffing plan provides the optimal infrastructure at both the District and school levels to support the attainment of the MSAP initiative’s ambitious objectives and outcomes.

Table 13: MSAP-Funded Staff

Personnel	Number	Level of Effort
District-level Staffing:		
Project Director	1	0.5 FTE
Project Specialist	1	1.0 FTE
Marketing and Recruitment Supervisor	1	1.0 FTE
Project Secretary	1	1.0 FTE
School-based Staffing:		
Magnet Site Coordinators	6	1.0 FTE
Magnet Resource Teachers	6	1.0 FTE

Upon receiving notification of the grant award, BCPS will implement a comprehensive outreach process to recruit and identify qualified staff who will meet the qualifications outlined for each position. The outreach and hiring process will follow BCPS’s Personnel Policy 4003 which underscores “the importance of recruiting and hiring employees with diverse background who support the Board’s commitment to equity,” and ensures that BCPS will “comply with all applicable federal, state, and local nondiscrimination laws regarding employment practices.” To

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recruit qualified applicants for the MSAP positions, BCPS will conduct internal and external job postings and tap into national sources for qualified magnet staff, including Magnet Schools of America, and postsecondary education programs in local colleges and universities.

District-Level Staffing: The MSAP Project Director will work directly with the magnet staff and planning teams at each school to ensure that the magnet programs are developed and implemented in alignment with the purposes of the MSAP statute and the approved grant application and that they are using best practices that will ensure that the PMs of the MSAP initiative are met. In this role, the duties of the MSAP Project Director will include the following:

- Recruiting, hiring, and supervising the District magnet staff;
- Coordinating regular meetings with magnet school staff and collaborating partners to disseminate pertinent information regarding MSAP guidelines and build a professional support network among school-based staff with similar responsibilities and interests;
- Attending professional conferences, including Magnet Schools of America and IB national conferences, to gather and share the most current information about effective magnet school programs with magnet school leaders and staff;
- Overseeing the MSAP Project Specialist on the coordination of all aspects of magnet curriculum and PD with BCPS academic offices and providing program updates to BCPS Executive Leadership;
- Overseeing the MSAP Marketing and Recruitment Specialist in the coordination and alignment of district-based marketing plans with school-based outreach and recruitment efforts;

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- Monitoring all project expenditures and providing school staff with technical assistance in meeting fiscal and budgetary guidelines for the MSAP;
- Serving as the primary liaison to the USDOE MSAP Program Officer and ensuring compliance with all requirements laid out by the USDOE and the Office for Civil Rights;
- Overseeing a rigorous and ongoing process of continuous improvement, which will entail convening regular meetings with magnet principals, parents, teachers, students, and project partners to solicit and share feedback on program activities; and
- Serving as a liaison to the project evaluator, assisting schools and MSAP staff in the collection of required program data and documentation; providing feedback to the evaluator on the evaluation design, instrument development, data collection procedures; and preparing and disseminating formative and required performance reports.

The MSAP grant will support a full-time **MSAP Project Specialist** who will work under the direction of the Project Director. The Project Specialist will be responsible for providing guidance, support, and leadership to the school teams in planning and implementation processes at each magnet school. In this role, the Project Specialist will perform the following responsibilities:

- Participate in regular meetings with school-based MSAP staff to build a professional support network among the school leaders and staff;
- Research and disseminate up-to-date literature and research on areas related to the specific magnet programs, including inquiry-based instruction and PBL, and development of thematic, interdisciplinary, standards-based curricula;

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- Coordinate and facilitate collaboration between the schools' curriculum teams and BCPS academic offices on all aspects of the development and alignment of new magnet curricula with BCPS, NGSS, and CCSS content standards;
- Coordinate district-wide and school-based staff training activities, including those facilitated by outside agencies, such as Modern Teacher and i2 Learning; and
- Attend professional conferences and district-based training (e.g., S.T.A.T, equity) to gather and share the most current information with magnet school staff.

The MSAP grant will support a full-time **Marketing and Recruitment Supervisor** who will work under the direction of the Project Director. The Marketing and Recruitment will be responsible for planning, coordinating, and implementing a comprehensive magnet outreach program and integrating MSAP outreach efforts with the district-wide marketing plans. In this role, the Marketing and Recruitment will perform the following responsibilities:

- Coordinate MSAP program marketing efforts to boost student enrollment, specifically among targeted populations;
- Build, track, and measure effectiveness of marketing efforts;
- Engage creative design, email marketing, and social media resources to develop, manage, and amplify marketing and communication plans around magnet programs;
- Develop and track each school's application and enrollment data to assess progress toward meeting the grant desegregation goals;
- Attend professional conferences to gather and share the most current information about effective marketing strategies for magnet school programs;
- Providing guidance and support to the school-level Magnet Advisory Committees

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(described in Section 2 below); and

- Coordinate regular meetings with school staff to disseminate pertinent information regarding marketing and grant objectives.

Finally, the full-time **MSAP Project Secretary** will support the Project Director on projects related to recruitment, student selection, and preparation of MSAP budgets. The Secretary will maintain all administrative and data files to support program implementation, fiscal monitoring, and the program evaluation. The Secretary will be responsible for communicating with program stakeholders, including families, external partners, and the USDOE, and for assisting the Project Director in scheduling and convening project staff meetings, PD sessions, and marketing events.

School-Level Staffing: The **magnet school principals** will be responsible for overseeing the implementation of the magnet programs in their buildings and ensuring that the magnet school planning teams and the Magnet Advisory Councils communicate regularly. They will also supervise all teaching staff working either directly or indirectly on magnet-related programs and activities, including the Site Coordinators and Resource Teachers whose responsibilities are described below, during and beyond the regular school day and year.

At each school, the magnet grant will pay for the salary of a full-time **Magnet Site Coordinator**, who will have major responsibility for all administrative aspects of the school's magnet program, including budget management, data collection and monitoring activities, outreach and recruitment, and family and community engagement. The Site Coordinator will be responsible for sharing information about the magnet program with members of the school community through the development and distribution of magnet program brochures, social and web-based media, in-person events, and other outreach materials; coordinating and facilitating

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ongoing communications with the school's Magnet Advisory Council; and building business and community partnerships to support the program. Additionally, the Site Coordinator will coordinate all school-level magnet program activities for staff and students, including summer enrichment programs, speakers series, career exploration experiences, and externships and PD for teachers.

In addition, the magnet grant will pay for the salary of a full-time **Magnet Resource Teacher** at each school, who will have major responsibility for planning, implementing, and refining the magnet program and curriculum development. Although their roles will be customized to the curriculum and instructional needs at each magnet school, in general, the Resource Teachers will be responsible for the following activities:

- Supporting school teams and coordinating with BCPS curriculum offices in development and implementation of a unique, integrated, thematic magnet curriculum (IB or Health Sciences);
- Working with teachers to provide direct instruction to students in magnet theme and program offerings (e.g., co-teaching, coaching, lesson modeling, inquiry-based instruction);
- Working with the teachers to develop assessment tools that are tailored to the magnet curricula and revising curricular materials to meet student needs and interests;
- Evaluating school-based PD needs and coordinating and facilitating training; and
- Attending professional conferences and researching up-to-date literature on magnet themes and innovative instructional strategies to support development and implementation

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of schools' magnet curricula, in areas such as inquiry-based and project-based learning, and thematic content areas.

Throughout the five-year grant, the Project Director will convene group meetings with the Site Coordinators and Resource Teachers from the six schools on a monthly basis. These meetings will be held on a rotating basis at the various magnet schools, which will give staff from across the magnet schools an opportunity to experience their colleagues' programs firsthand. Meeting topics will include, for example, tried and true strategies for outreach and recruitment, theme-based curriculum development and implementation, resources for PD and student enrichment, successes and challenges of fostering and implementing educational and business partnerships, strategies for engaging hard-to-reach families (including non-English speaking parents), and evaluation activities and findings. At each meeting, the Site Coordinators will provide an update of their schools' progress in implementing the various components of the program, share effective strategies, and brainstorm solutions to implementation challenges encountered. Other meeting participants will include magnet school principals, and District staff from academic offices, and Offices of Communication and Community Outreach, Equity and Cultural Proficiency, and Career and Technology Education, among others.

At the school level, in addition to the principals, BCPS will provide the services of classroom teachers, professional support staff, and para-educators **at no cost to the grant** to support implementation:

- Classroom teachers will be responsible for providing magnet school students with theme-based instruction, and electives and specials teachers and media specialists will provide direct instruction to students in areas related to the magnet themes at their schools.

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- To ensure that students and their families are able to fully participate in and benefit from the magnet school programs, school-based support staff (e.g., school counselors, social workers) will offer access to services designed to meet students' health, social, and emotional needs.
- Parent coordinators will play a key role in implementing parent outreach activities and representing the interests of parents on the schools' magnet planning teams and MACs.
- Para-educators will be responsible for assisting the classroom teachers in providing magnet school students with theme-based instruction for students with special needs.

In addition to these personnel resources, each school has existing equipment, supplies, and facilities that will be leveraged to support the implementation of the magnet programs in their buildings.

Project Implementation Plan

BCPS seeks to achieve four overarching project-level objectives with the MSAP initiative. These objectives are directly aligned with the purposes of the MSAP and the Government Performance and Results Act (GPRA) measures that have been established by the USDOE for the program. This section lists the four grant objectives (and how each is aligned with the MSAP purposes) along with a summary of the magnet program activities that will be carried out (a detailed description of the activities was provided in the Desegregation and QPD sections). Following this discussion is a detailed project implementation timeline that includes key activities, responsible parties, and target dates by project objective.

Project Objective 1: Reduce or eliminate minority group isolation among African American students in proposed magnet schools. This objective is aligned with the purpose of

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the MSAP to support the *elimination, reduction, or prevention of minority group isolation (MGI) in elementary and secondary schools with substantial proportions of minority students.*

All six proposed magnet schools meet BCPS's definition of MGI as outlined in the District voluntary desegregation plan (i.e., a site is experiencing MGI when the proportion of students in one racial or ethnic group enrolled at the site exceeds the district-wide proportion of students in that racial or ethnic group). The MSAP grant will help reduce or eliminate the isolation of African American students at each of the magnet schools by attracting a new and more racially diverse population of students to the schools through the implementation of a multifaceted approach:

- Integrating outreach for the new magnet programs into BCPS's existing and well-designed marketing strategy that includes multi-media materials, Magnet Expo and information nights, and print, radio, and other advertising;
- A strategic, targeted, and aggressive outreach and recruitment plan to be carried out by each magnet school in its local and surrounding neighborhoods to profile the new programs and themes; and
- A race-neutral student selection process that will ensure equitable access for all students to the magnet programs.

Project Objective 2: Ensure that all students attending the magnet schools meet challenging academic standards and are on track to be college- and career-ready. Objective 2 supports the MSAP purpose for the *development and implementation of magnet school programs that will assist LEAs in achieving systemic reforms and providing all students the opportunity to meet challenging State academic standards.*

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The six proposed magnet schools have not yet been successful in helping all students meet state learning standards, as measured on the PARCC. As of spring 2016, in each of the four proposed elementary and middle magnet schools, less than a quarter of students met or exceeded the state learning standards in ELA, which lagged the district-wide rates of 37.3% for elementary and 33.7% for middle school students. Additionally, less than a quarter of Woodmoor ES students met or exceeded the standards in math compared with 39.5% district-wide. In the three middle schools, less than 10% met or exceeded the math standards compared with 22.1% district-wide. In the two high schools, 8.4% of Overlea HS students and 34.9% of New Town HS students met the standards on the English 10 PARCC compared with 42.9% across the District. In math, 0% of Overlea HS and 6.9% of New Town HS students met the standards in Algebra I compared with 25.4% of high school students district-wide.

The magnet programs will provide new opportunities for all students to meet and exceed the learning standards by providing rigorous, inquiry- and project-based thematic curricula that will be integrated across and within core subject areas. The magnet curricula are designed to support, deepen, and expand the innovative instructional approaches and curricular frameworks that have been put into place as part of BCPS's *Blueprint 2.0* and Superintendent's instructional priorities and will be fully aligned with District and state curriculum standards, CCSS, and NGSS.

Project Objective 3: Ensure that *all* students attending the magnet schools benefit from the magnet's educational offerings and have equal opportunities to gain magnet theme-specific value-added skills and knowledge. This objective aligns with two purposes of the MSAP: to *ensure that all students enrolled in magnet school programs have equitable access to high-quality education that will enable them to succeed academically and continue with*

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postsecondary education or productive employment and to provide courses of instruction that will substantially strengthen the knowledge of academic subjects and the attainment of tangible and marketable career, technological, and professional skills.

The magnet schools will provide whole-school programs that will expose *all* students to theme-based curriculum and enrichment opportunities. The magnet planning teams understand that the needs and interests of students can vary drastically depending upon the opportunities and experiences they have been awarded prior to enrolling in the magnet schools. Therefore, the programs will align with other services in the schools and across BCPS to address the needs of students, including learning, language, economic, behavioral, and other needs (see Section A-3 for a discussion of programs and services to ensure equal access and treatment). The instructional staff who provides services to students with disabilities and ELLs within the proposed magnets will participate in magnet curriculum development to ensure that instructional units and materials are designed to meet the learning needs of all students.

Furthermore, through a wide array of District- and school-based partnerships, the magnet program designs incorporate opportunities for students and teachers to go beyond the walls of their schools and boundaries of their communities to experience the real-world applications of what they are exploring in school (see QPD section). These enrichment activities, which will be scheduled as part of the regular school day as well as in out-of-school-time programs (including after school and summers), will help enhance students' and teachers' content knowledge, build students' repertoire of 21st century cognitive and non-cognitive skills (e.g., communication, collaboration, persistence, self-guided learning), and serve to close the opportunity gap that exists between minority group and socio-economically isolated schools and those serving more

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advantaged peers.

Project Objective 4: Build the capacity within the magnet schools to provide rigorous, theme-based instructional programs that will help promote choice and diversity in BCPS.

Objective 4 supports two purposes of the MSAP: *improving the capacity of LEAs, including through professional development, to continue operating magnet schools at high performance after Federal funding for the magnet schools is terminated and encouraging the development and design of innovative educational methods and practices that promote diversity and increase choices in public schools.*

BCPS has incorporated several mechanisms into the design of each magnet school program to increase the capacity of the school leaders, staff, and parents to implement high-quality magnet programs and to sustain them after the federal funding terminates. BCPS realizes that the MSAP grant provides “seed money” to develop magnet programs and that these mechanisms must be developed and implemented from Day 1 of the grant in order to prepare the schools with the resources and knowledge needed to implement and sustain the programs after the federal funding period. By creating sustainable magnet programs that meet the demand and needs of students and families, BCPS will increase choice and promote diversity for all students.

The BCPS MSAP planning team, in collaboration with the proposed magnet schools, has developed a strong plan of professional development to enhance the knowledge and skills of all instructional staff and school leaders in theme-based topics and evidence-based instructional approaches and to develop rigorous magnet curricula and lessons that will be provided to all students (see QPD for detailed descriptions of curriculum and PD activities). District-level curriculum planning workshops, monthly MSAP meetings, and ongoing knowledge-sharing

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venues to facilitate knowledge sharing across the participating schools and districts will be scheduled. School-level partnerships with outside vendors, including institutions of higher education, organizations with expertise in international and global issues, health institutions, and other community-based organizations, will offer technical assistance in the magnet themes and related instructional strategies being delivered by the schools. In addition, all schools will use PLCs to share best practices with colleagues in their schools and offer peer mentoring.

Continuous Improvement Process

In alignment with continuous improvement and the performance management framework outlined in BCPS's *Blueprint 2.0*, the MSAP grant will be monitored using a six-step process around a framework of Plan, Do, Check, Act. The Plan, Do, Check, Act, which was developed by W. Edwards Deming as a business model that is frequently applied in education. The six steps in the MSAP grant continuous improvement process will include (1) goal setting, (2) implementation and testing of program activities, (3) timely and regular feedback, (4) measuring and monitoring quality of investments, (5) strategies to publicly share information, and (6) opportunities for ongoing corrections.

The MSAP Project Director will convene a Continuous Improvement Working Group comprising members of the District magnet team, representatives from the magnet schools (including funded and non-funded staff), and the external evaluator to guide and modify the process for continuous improvement as the project develops. The Continuous Improvement Working Group will provide high-level direction to ensure the successful implementation of the grant and will serve as a sounding board for ideas and solutions to critical issues that arise through implementation. As discussed in the section that follows, the magnet program

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participants—students, families, teachers, and school leaders—will play an integral and active role in the continuous improvement process to ensure that it provides meaningful and timely information. Furthermore, the project’s external evaluator will conduct a comprehensive formative and summative evaluation of the initiative to provide external feedback on the implementation and effectiveness of program activities (see the Quality of Evaluation Plan section for a detailed discussion of the evaluation design).

A timeline showing the key activities by project objective, relevant benchmarks, and responsibility parties is provided on the following pages.

(2) The Secretary considers how the applicant will ensure that a diversity of perspectives are brought to bear in the operation of the proposed project, including those of parents, teachers, the business community, a variety of disciplinary and professional fields, recipients or beneficiaries of services, and others, as appropriate.

Under the leadership of Superintendent Dance and as described in the Desegregation section, BCPS strongly values feedback from its community and offers effective systems of communication with BCPS stakeholders.

A primary mechanism that will be used to ensure that a diversity of perspectives from all magnet stakeholders is incorporated into the programs will be the Magnet Advisory Committees (MACs) that will be established to support the development and implementation of the new magnet programs. Two MACs will be developed: one will work to support the new Health Science and Biomedical Technology pathway and the other will support the IB pathway.

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BCPS MSAP Project Implementation Timeline

MSAP Objective 1: Reduce or Eliminate Minority Group Isolation						
Key Activities	YR 1 Benchmarks 10/17–9/18	YR 2 Benchmarks 10/18–9/19	YR 3 Benchmarks 10/19–9/20	YR 4 Benchmarks 10/20–9/21	YR 5 Benchmarks 10/21–9/22	Responsible Parties*
<ul style="list-style-type: none"> • Create district-wide marketing and outreach campaign that builds on existing frameworks of OMP communications 	<ul style="list-style-type: none"> • Integrate new magnet programs into OMP literature, brochures, and other existing marketing efforts 	<ul style="list-style-type: none"> • Disseminate information on new magnet programs districtwide and build community awareness of and interest in magnet pathways 				PD, MS, S, D
<ul style="list-style-type: none"> • Design and conduct school-level targeted and multi-faceted outreach to profile the new magnet themes and recruit diverse student population 	<ul style="list-style-type: none"> • Develop, translate and disseminate new promotional materials, outreach to feeder schools, develop community partners 	<ul style="list-style-type: none"> • Disseminate promotional materials, build and expand social media presence, conduct marketing in community locations 				MS, SC, P
<ul style="list-style-type: none"> • Implement a fair, equitable, and race neutral student selection and placement process 	<ul style="list-style-type: none"> • Receive applications for new magnets, integrate into OMP lottery and run race-neutral selection process for 17-18 	<ul style="list-style-type: none"> • Increased number and diversity of applications in race-neutral selection process compared with previous year 				PD, MS, S, D
MSAP Objective 2: Improve Students' College and Career Readiness						
Key Activities	YR 1 Benchmarks 10/17–9/18	YR 2 Benchmarks 10/18–9/19	YR 3 Benchmarks 10/19–9/20	YR 4 Benchmarks 10/20–9/21	YR 5 Benchmarks 10/21–9/22	Responsible Parties*
<ul style="list-style-type: none"> • Design, implement, and refine thematic curricula 	<ul style="list-style-type: none"> • 1 interdisciplinary units focused on inquiry and PBL per grade per school 	<ul style="list-style-type: none"> • 2-3 interdisciplinary units focused on inquiry and PBL per grade per school 		<ul style="list-style-type: none"> • 3-4 interdisciplinary units focused on inquiry and PBL per grade per school 		PS, RT, CT, PP
<ul style="list-style-type: none"> • Incorporate research-based instructional strategies aligned to Blueprint 2.0 	<ul style="list-style-type: none"> • Begin to implement instructional strategies (inquiry, PBL, cooperative learning) to support the implementation of the magnet programs 	<ul style="list-style-type: none"> • Expand implementation of innovative instructional strategies 	<ul style="list-style-type: none"> • Schoolwide implementation of innovative instructional strategies (inquiry, PBL, cooperative learning) 			RT, CT, P
<ul style="list-style-type: none"> • Develop vertical pathways 	<ul style="list-style-type: none"> • Develop forums for vertical articulation planning meetings across schools 	<ul style="list-style-type: none"> • Implement forums for vertical articulation planning meetings across schools 				PD, PS, SC, P, RT, CT
<ul style="list-style-type: none"> • Use formative and summative evaluation to examine impact of magnets on student performance and identify gaps 	<ul style="list-style-type: none"> • Conduct formative evaluation, prepare local school and district reports, analyze data 	<ul style="list-style-type: none"> • Implement program adjustments based on evaluation, conduct formative evaluation and reports 				PD, P, SC, PE

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MSAP Objective 3: Provide Equal Access to Magnet Program Offerings						
Key Activities	YR 1 Benchmarks 10/17–9/18	YR 2 Benchmarks 10/18–9/19	YR 3 Benchmarks 10/19–9/20	YR 4 Benchmarks 10/20–9/21	YR 5 Benchmarks 10/21–9/22	Responsible Parties*
<ul style="list-style-type: none"> Provide staff development in cultural competence and equity for magnet teachers 	<ul style="list-style-type: none"> Equity training provided to staff in all 6 schools 	<ul style="list-style-type: none"> Provide technical assistance to all 6 schools in developing plan to integrate equity and cultural competence across teaching 				ECP, PD, P, SC, RT, CT
<ul style="list-style-type: none"> Adapt thematic curricula and instructional strategies to meet the needs of ELLs 	<ul style="list-style-type: none"> Work with ESOL Department to review and customize all magnet units to meet needs of ELLs 			<ul style="list-style-type: none"> Monitor unit implementation to ensure meeting needs of ELLs 		PS, RT, CT, AD
<ul style="list-style-type: none"> Adapt thematic curricula and instructional strategies to meet the needs of students with disabilities 	<ul style="list-style-type: none"> Work with Special Education Department to review and revise all magnet units to meet needs of students with disabilities 			<ul style="list-style-type: none"> Monitor unit implementation to ensure meeting needs of students with disabilities 		PS, RT, CT, AD
<ul style="list-style-type: none"> Provide enrichment opportunities in and beyond school day to level the playing field for students in high-poverty, MGI schools 	<ul style="list-style-type: none"> Develop partnerships with education and business organizations, and provide 2-week summer learning experiences for students in partnership with I2 Learning. 	<ul style="list-style-type: none"> Foster partnerships with education and business organizations, provide school-year and 2-week summer learning experiences for all students 	<ul style="list-style-type: none"> Maintain partnerships to provide school-year and 2-week summer learning experiences for all students 			PD, PS, SC, MAC, PP, RT, CT

MSAP Objective 4: Build Capacity to Sustain Magnet Programs						
Key Activities	YR 1 Benchmarks 10/17–9/18	YR 2 Benchmarks 10/18–9/19	YR 3 Benchmarks 10/19–9/20	YR 4 Benchmarks 10/20–9/21	YR 5 Benchmarks 10/21–9/22	Responsible Parties*
<ul style="list-style-type: none"> Develop and implement a rigorous plan of PD for magnet program teachers 	<ul style="list-style-type: none"> Draft magnet PD plan for each school 	<ul style="list-style-type: none"> Review, revise and implement PD plans 	<ul style="list-style-type: none"> Implement and assess PD plans 			PD, PS, SC, RT, PP
<ul style="list-style-type: none"> Conduct school-level processes to share best practices and assess program implementation 	<ul style="list-style-type: none"> Use PLC and School Improvement Plan to discuss magnet theme and implementation of innovative instructional strategies 					PS, SC, RT, P, CT, PP
<ul style="list-style-type: none"> Conduct district-level processes to share best practices and assess program implementation 	<ul style="list-style-type: none"> Use monthly MSAP meetings and MACs to discuss magnet theme and implementation of innovative instructional strategies 					PD, SC, MAC, PP
<ul style="list-style-type: none"> Design and conduct a rigorous formative and summative evaluation of the project to inform sustainability 	<ul style="list-style-type: none"> Implement project evaluation, provide formative feedback during bimonthly MSAP meetings, updates to Magnet Task Force and Work Group 					PD, PS, SC, PE, CIWG

*Responsible Parties: PD=Magnet Project Director; PS=Project Specialist; MS= Marketing Specialist; S= Project Secretary; P= Principals; SC=Magnet Site Coordinators; RT=Resource Teachers; CT= Classroom Teachers; PE=Project Evaluator; CIWG=Continuous Improvement Working Group; MAC=Magnet Advisory Committees; PP= Project Partners AD=Academic Departments; ECP = Division of Equity and Cultural Competence; D= Other district staff

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The MACs will serve a critical role in ensuring that a diversity of perspectives is brought to program planning, implementation, and decision-making for the program and that the schools benefit from the most relevant and current knowledge and understanding about the magnet themes, industry connections, and innovative instructional practices. As such, each MAC will be composed of key stakeholders, including parents, students, staff and teachers, school and District leaders, and community representatives and content experts from institutions of higher education, Teachers Association of Baltimore County (union), and business and community partners. As noted above, a representative from each MAC will participate in the Continuous Improvement Working Group convened by the Project Director. Additionally, a representative from each MAC will serve on BCPS's Magnet Task Force to ensure that development of the new pathways is fully aligned with the goals and objectives for magnet programming in BCPS.

The charge of the MACs, which will meet quarterly throughout the grant, will be to:

- Monitor and advise in the development and implementation of the new magnet pathways;
- Review data from BCPS Magnet Task Force to ensure that the new magnet pathways are fully aligned with and support the goals and implementation of the District-level system of magnet programs;
- Identify theme-related resources and opportunities to enhance instructional programs and provide student enrichment and PD opportunities;
- Share perspectives and input from across community stakeholders represented by the MAC members and organizations, such as interests of families related to magnet programming and schedules, opportunities for better alignment of magnet instruction to business and post-secondary programs, and PD needs and interests of teachers;

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- Develop tools and strategies to foster community and business awareness and involvement in the new magnet programs;
- Review formative and summative evaluation data on program progress toward meeting MSAP PM, and where necessary, make recommendations for improvement; and
- Assist in planning and development of theme-related school and inter-school activities and community events.

Within three months of the grant award notification, each school will be asked to provide the names and affiliations of the MAC team members to the Magnet Project Director.

The project's formative evaluation will be designed to collect feedback from all of the key stakeholders of the magnet grant, including the direct beneficiaries of the services (i.e., teachers, students, and parents) as well as key partners, through a wide range of data collection activities, such as surveys, focus groups, and observations. This feedback will be incorporated into the continuous improvement model described earlier in this section so that the program evolves to meet current and emerging needs.

Leverage Existing Communication Structures

BCPS has multiple existing structures in place to engage parents and community members in the decision-making process at the school and District levels. In addition to the MACs, BCPS will tap into these structures to ensure that a diversity of perspectives is integrated into the operation of the magnet program.

The Superintendent's Student Advisory Council and the Parent Advisory Council are examples of structures that may be used to support the magnet programs. These councils are charged with providing advice and feedback to Dr. Dance on school system initiatives as well as

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sharing views and concerns and discussing ideas, goals, and challenges within the system. Members of both councils serve for a year and meet quarterly with Dr. Dance and his leadership team. The 17-member Student Advisory Council is composed of high school students selected to represent each of the county's five geographical areas, along with the student member of the Board of Education and the president of the Baltimore County Student Council. The 16-member Parent Council is composed of parents and guardians who have at least one child in BCPS schools, along with the president of the PTA Council of Baltimore County. The members were selected based on a range of factors, including geography, their children's grade levels, and their areas of experience and interest. At the onset of the grant, leadership from each magnet school will work to recruit members of the magnet school communities, including parents and students, to participate in the district-wide councils and provide feedback to the Superintendent and community on the programs.

Additionally, community members are encouraged to support BCPS through participation in a wide range of Board of Education Advisory and Stakeholder Groups. For each of the school system's five geographic and administrative areas, the Board of Education appoints residents to serve on an Area Education Advisory Council to provide a broader base of citizen input into education. The Education Advisory Council of Baltimore County is made up of five area councils and serves a unique and important role in our school system. Advisory Council members have served as both informed advisors to the Board of Education and as liaisons to the communities they represent. They hold local meetings to provide information about new initiatives, goals and plans, new policies and curriculum, opportunities for advocacy, and legislation affecting the schools, and also take public comment and suggestions at meetings and

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hearings to bring directly to the Board. The Project Director will make presentations to the Advisory Council to engage them in decisions and discussions of magnet programming.

Critically important to the launching and sustaining of new BPCS magnet initiative will be designing and implementing an effective approach to weaving parents and other caregivers into the fabric of the magnet schools and programs. While the literature clearly shows the benefits that accrue to students when their parents/caregivers are engaged in school activities, schools serving large numbers of low-income students in challenged communities are often hard-pressed to garner substantial parent involvement, particularly among parents considered “hard to reach” (Harris & Goodall, 2008). Outreach to traditionally “hard-to-reach” families, which may include non-English speaking, low-income, single parents, and families living in temporary housing, is especially challenging for many schools (Fowler, et al., nd.). Effective strategies that have been identified in literature on outreach to hard-to-reach families include using print and video communications in a variety of languages, using parents from the community as recruiters, and continued contact with families (Fowler, et al., nd).

Taking these findings into consideration, the BCPS magnet initiative will carry out the following practices, which have been found in the literature to be particularly effective in encouraging parents to serve as decision-makers in their children’s schools (Flamboyant Foundation, 2007) and which were highlighted through the District’s audit of magnet programs as promising practices for family engagement:

- Use personalized approaches and phrases to build trust and interest;
- Communicate with parents often and with a variety of communications mediums;
- Organize smaller events, such as grade-level nights, rather than whole-school events;

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- Create venues for families to provide input and receive feedback online and in person;
- Conduct outreach in community spaces, such as libraries, grocery stores, family recreational events; and
- Communicate with parents in native languages and ensure that all school events incorporate bilingual staff members when possible.

(d) Quality of Personnel

(1) The Secretary reviews each application to determine the qualifications of the personnel the applicant plans to use on the project.

For the past 24 years, BCPS has implemented a comprehensive system of magnet programs that have been developed in part with support from the MSAP. For the 2017–22 MSAP project, BCPS will tap into the expertise of District and school-based staff who together have amassed substantial experience developing, implementing, and supervising BCPS’s magnet programs, including the OMP staff, most of whom have been with the office since BCPS’s last MSAP grant in 2004. As described in the following section, the proposed MSAP team includes a group of exceptionally qualified staff to carry out the implementation of the District’s magnet program.

(a) The Secretary determines the extent to which the Project Director (if one is used) is qualified to manage the project.

The proposed Project Director, **Bryan Stoll**, will have programmatic and administrative responsibility for the project. Mr. Stoll will be funded part-time (0.5 FTE) through the grant and will continue to serve in his role as Coordinator of BCPS’s OMP. As the MSAP Project Director, Bryan Stoll will manage the District-level, MSAP-funded staff, including the Project Specialist, Marketing and Recruitment Supervisor, and Project Secretary on all aspects of grant work.

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Mr. Stoll is well versed in the philosophy and best practices of magnet programs and can understand and relate to the communities that our schools serve. He possesses vast experience with administration of successful magnet and other federally-funded grant programs; strong knowledge of curriculum and educational program development and implementation; in-depth educator training and PD experience; strong leadership, management, and interpersonal skills; and demonstrated expertise in the areas of desegregation and curriculum development and implementation. For the past three years, Mr. Stoll has served as a Regional Director for Magnet Schools of America (an elected position), during which he has participated in numerous trainings and presentations related to magnet programs and desegregation topics, such as development of theme-based curriculum and PD, effective family and community partnerships, building sustainable programs, ensuring equitable access to rigorous academic programs, and building cultural proficiency among staff and students.

Mr. Stoll is a skilled researcher, educator, and administrator with 30 years of experience, including 21 years of experience working with magnet programs and schools. At the beginning of his career, Mr. Stoll worked as a science and medical researcher before becoming a science teacher at the middle and high school levels. While he was a science teacher at Woodlawn HS Magnet Program, Mr. Stoll also served as the Applied Research Program Coordinator, where he played a key role in the development of the Applied Research and Pre-Engineering magnet program. Mr. Stoll would go on to develop his expertise in magnet program development as the MSAP Grant Supervisor for the OMP. In this position, Mr. Stoll worked on the development of several federally-funded magnet programs, including the 21st Digital-Age Learning program at Deep Creek Middle School, the Career and Professional Studies program at Lansdowne Middle

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School, and the STEM Academy at Chesapeake High School. Following this position, Mr. Stoll continued his work in the OMP as Magnet Program Supervisor and then Magnet Program Coordinator. Mr. Stoll holds a Master's Degree in Applied Information Technology from Towson University and a Teaching Certificate from Virginia Wesleyan College.

(b) The Secretary determines the extent to which other key personnel are qualified to manage the project.

As described in the Management Plan, the MSAP Project Director will receive support and guidance from a strong structure of District leadership, beginning most importantly with Superintendent Dance, whose expertise and commitment to the MSAP are described in that section. The roles of key District leaders in BCPS operations and in the proposed MSAP project are also described in the Management Plan; the following paragraphs discuss their experience and relevant expertise in supporting the MSAP project. All of the District leaders and staff described in this section will commit their time at no cost to the grant to help ensure that the proposed MSAP project is developed, managed, and implemented effectively and meets all grant requirements and PMs outlined in the application. Résumés for District and school staff who will contribute to the magnet programs are included in the Attachments.

Chief Academic Officer Verletta White will communicate directly with the Superintendent on all aspects related to the MSAP grant. Ms. White is a skilled administrator and educator with extensive experience supporting high quality teaching and learning initiatives and teacher PD. She has provided leadership to schools that achieved National Blue Ribbon status, including Eastern Technical HS, a BCPS magnet school, and Woodholme ES. Ms. White has demonstrated her commitment to improving student achievement and high quality instruction throughout her

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various tenures in BCPS, leading to her current role. While working for BCPS, Ms. White has served as Assistant Superintendent, where she led 34 principals in the northeast area to increase student achievement through improving quality of instruction, as well as Principal and Assistant Principal. She has also served as Executive Director of Professional Development, during which she authored the Guide to High Quality Professional Development for BCPS and conducted ongoing PD for principals, teachers, mentors, school-based staff, and parents. She also created a web-based PD platform for planning and evaluating the District's PD activities. Ms. White will play a critical role in helping to design effective programs within each school and at the District level in order to build the capacity of magnet staff to implement and sustain successful programs. Ms. White holds a Master's Degree in Leadership in Teaching from the College of Notre Dame of Maryland.

Working directing under Ms. Verletta is **Ryan Imbriale, Executive Director for Innovative Learning**, who will work to integrate the MSAP project with BCPS's innovative learning initiatives and strategies and leverage resources to support innovation and excellence across the new magnet programs. As Executive Director, a role he has held since 2013, Mr. Imbriale is responsible for the supervision and coordination of all of BCPS's innovative learning projects, eLearning projects, and magnet programs. Mr. Imbriale also leads the department's efforts to provide leadership to the District's schools and curriculum offices in their design and implementation of the S.T.A.T. initiative. Further, Mr. Imbriale plays a critical role in the implementation of Maryland's educational technology standards by monitoring student literacy goals across the state in this area and collaborates regularly with curriculum offices to integrate technology and innovative learning standards into pre-K through grade 12 instruction. He will

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serve as a key resource in working with each of the magnet schools to design innovative programs that foster the technological skills of students and to infuse state-of-the-art educational technology into theme-based program designs.

Prior to his current position, Mr. Imbriale was Principal of Patapsco Magnet HS for the Arts, Assistant Principal at Perry Hall HS in BCPS, and served as Program Coordinator of Professional Development at Johns Hopkins University, where he supervised external support services to educators and managed a variety of grants and contracts. Mr. Imbriale holds a Master's Degree in Educational Technology from Johns Hopkins University and certification in school administration and supervision from Towson University.

Leeann Schubert, Director of Educational Options within the Department of Innovative Learning, is responsible for overseeing and supervising all activities of the OMP, which will include the new MSAP grant. As Director, Ms. Schubert is responsible for coordinating all the activities of the Educational Options Steering Committee and the Magnet Task Force. Under her leadership BCPS has developed and implemented a magnet strategic plan that has revised school system policy supporting magnet programs, including the shift to a lottery system for all middle school magnet programs. In the three years of her magnet leadership, BCPS has expanded magnet program offerings by 11 programs and significantly revised the entire elementary magnet program to an exposure model with an international studies or STEAM focus thus creating a more aligned vertical pathway to all BCPS middle schools and middle school magnet programs. Additionally, she uses her knowledge of alternative education to maintain public information about the Educational Options Programs for the BCPS website as well as other marketing initiatives. Ms. Schubert holds a Master's Degree in Curriculum and Instruction from Loyola

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University and certification in special education administration and supervision from Johns Hopkins University.

Working closely with and reporting to the Project Director will be the full-time, District-level, MSAP-funded **Project Specialist**, who, as described in the Management Plan, will provide leadership to school-based resource teachers in planning and implementation of the magnet curricula and programs and help build capacity at each magnet school as these are developed over the lifetime of the grant. Qualifications for this position will include a minimum of a Master's degree and four years of educational leadership experience, with preference given to applicants with experience with implementation of magnet or other special programs and/or in an International Baccalaureate program or a Health Sciences magnet program. Additionally, applicants will be required to possess or be eligible for a Maryland Advanced Professional Certificate with an Administrator I endorsement; and have knowledge and experience in curriculum development, instructional technology, and PD programs, Health Sciences background and/or IB experience, data analysis skills, and excellent oral and written communication and human relations skills.

The full-time, District-level **Marketing and Recruitment Supervisor**, as described in the Quality of Management Plan, will coordinate all marketing and student outreach activities to provide information about the new magnet programs across the BCPS community and within the target magnet feeder school neighborhoods; and will work closely with the school-based Magnet Site Coordinators to support their school-based outreach plans. Qualifications for this position will include Master's degree and four years of educational leadership experience, including experience in magnet or other specialized program. Additionally, applicants will be required to

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possess or be eligible for a Maryland Advanced Professional Certificate with an Administrator I endorsement; and have knowledge and experience in marketing and health science and/or IB programs. Qualified candidates will also possess skills in Microsoft Suite, data analysis, and conducting presentations and outreach to a variety of stakeholder groups.

The fourth key member of the BCPS magnet team will be the full-time **Project Secretary** who will assist the Project Director on all administrative MSAP tasks and interface with families and community members through telephone calls, e-mail, and in-person visits. Desired qualifications include a high school diploma or equivalent supplemented with specialized secretarial and/or commercial business course, as well as demonstrated proficiency of Microsoft Office applications, and strong oral and written communication skills.

Key School-based MSAP Staff

Magnet School Principals: All of the principals of the proposed magnet schools are highly qualified, visionary leaders, eminently capable of implementing BCPS's magnet school initiative. The magnet school principals will oversee the implementation of the program at their buildings and ensure regular communication between the magnet school planning teams. They will supervise all teaching staff working on magnet-related programs and activities during and beyond the regular school day and year. Periodically, the principals will meet as a group to exchange ideas and discuss topics of interest to all magnet schools in the District. In addition, the principals will have access to the magnet grant website to share and disseminate pertinent materials. Brief descriptions of the skills and expertise of each magnet school principal follow.

Franchesca Brown began her tenure as Principal of Woodmoor ES in 2016 after serving as principal for Pinewood ES in BCPS for six years. Ms. Brown is currently a Ph.D. candidate at

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Notre Dame of Maryland University with a focus on Instructional Leadership for Changing Populations, and holds a Master's Degree in Education. Ms. Brown has spent over 20 years in BCPS serving as classroom teacher, mentor teacher, Reading Resource teacher, and assistant principal. Ms. Brown has focused on increasing student achievement for all students through innovative initiatives and researched-based best practices. She attended and completed the Heads of School Primary Years International Baccalaureate Training in 2016 as well as several visits to Maryland-based PYP and MYP programs.

Monica Sample, Principal of Overlea HS, has a long track record of successful school management in secondary education. She also has extensive experience teaching Spanish at the secondary level and has worked in a variety of roles in magnet programs, with direct experience supervising Health Science Magnet programs at a BCPS high school. Prior to joining Overlea HS, Ms. Sample was an assistant principal at Randallstown HS in BCPS where she developed and implemented instructional leadership initiatives, college readiness initiatives, and strategies toward the improvement of graduation rates. At Randallstown HS, Ms. Sample assisted in coordinating the instructional program of the school including the Academy of Health Professions that provides students with project and problem-based learning, clinical and internship experiences, and classroom and lab instruction related to the field of healthcare. As an Assistant Principal, Ms. Sample developed a school schedule that supported the successful implementation of the health sciences magnet program, provided instructional supervision to staff, and supervised the Bio-medical magnet. Ms. Sample is a doctoral candidate in Urban Educational Leadership and Social Policy from Morgan State University. Ms. Sample holds several certifications from the state of Maryland, including Administrator I and Administrator II.

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From his 17 years of experience as an educator and 12 years of experience as an educator and school leader, Harvey Chambers, principal of Windsor Mills MS, has gained substantial experience in the areas of transformational teaching and learning, learner-centered classroom environments, and using technology to promote student learning. Mr. Chambers has been instrumental in developing the S.T.A.T. initiative at Windsor Mills, which currently serves as a model school within BCPS for 1:1 digital learning. Mr. Chambers serves as Co-Chair of the BCPS Leadership Academy and has played a leadership role in BCPS's school-wide Differentiated Professional Development program.

Prior to this position, Mr. Chambers served as Assistant Principal at the Southwest Academy Magnet School for Science and Engineering, where he provided technology-based training to school leadership and teachers to use data to drive teachers' instructional decisions and developed a school schedule that supported the successful implementation of the magnet program. Mr. Chambers hold a Master's Degree in Supervision and Administration from the College of Notre Dame of Maryland. Mr. Chambers attended and completed the Heads of School Middle Years International Baccalaureate Training in 2016 as well as several visits to Maryland-based PYP, MYP, and DP programs.

Shannon Parker, Principal of Middle River MS, has used her extensive school leadership experience and reading expertise to support student achievement and build teachers' instructional and leadership capacities. Ms. Parker's school leadership experience began in 2007 when she served as Assistant Principal of Deer Park Middle Magnet School and then as Summer School Principal and Assistant Principal of General John Stricker MS, both BCPS schools. During this time, Ms. Parker demonstrated her leadership and management skills by coordinating PD

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opportunities for staff focused on the S.T.A.T. initiative. Ms. Parker previously worked as a reading, math, and science teacher for 12 years. She holds a Master's Degree and Maryland State Administrator I and Administrator II certifications. Ms. Parker attended and completed the Heads of School Middle Years International Baccalaureate Training in 2016 as well as several visits to Maryland-based PYP, MYP, and DP programs.

Lawrence Rudolph, Principal of Golden Ring MS, has a combined 20 years of teaching and administrative experience across diverse settings in public education. Since the year 2000 Dr. Rudolph has served as a school leader, first in Michigan and then in Maryland, where he served as Principal of a turnaround middle school before he became an Area Superintendent for BCPS. In this role, Dr. Rudolph was responsible for conducting formal site visits to all the area schools, reviewing the schools' School Performance Plans, assessing student achievement progress, and maintaining working relationships with the leadership of each school. In his current position at Golden Ring MS, recognized as an AVID site of distinction, Dr. Rudolph holds a Doctor of Education degree in Educational Leadership from the University of Pennsylvania.

Kevin Whatley, Principal of New Town HS, has 12 years of experience in school leadership. As principal, he is determined to maintain a positive school climate of learning and respect for students and teachers by overseeing and leading teacher PD and coaching, with a focus instructional design and delivery and technology integration. During his 10 years as Assistant Principal at Pikesville HS in BCPS, Mr. Whatley was an instructional leader and supervised several programs including his school's AVID Program. Mr. Whatley holds a Certificate of Advanced Studies in Education and a Master's of Education in guidance and counseling, both from Loyola University of Maryland. He has Administrator I and Administrator II certifications

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in the state of Maryland. Mr. Whatley also attended and completed the Heads of School Diploma Programme International Baccalaureate Training in 2016.

Magnet Site Coordinators: At the school level, a Magnet Site Coordinator will work closely with the school principal to spearhead the implementation of the magnet program in their buildings. The Magnet Site Coordinators, whose roles are described in detail in the Quality of Management Plan, will be responsible for all of the administrative aspects of the program, including fiscal management, data collection activities (serving as the principal liaison to the external evaluation team), and outreach and recruitment activities. Desired qualifications for the Magnet Site Coordinators include experience with magnet or other specialized programs and experience in IB or Health Science programs, strong interpersonal skills and familiarity with the school and parent community, strong leadership and management skills, and demonstrated proficiency in oral and written communication skills. Additional required qualifications include a Master's Degree and five years of educational leadership experience and a Maryland Advanced Professional Certificate with an Administrator I endorsement.

(c) Teachers who will provide instruction in participating magnet schools are qualified to implement the special curriculum of the magnet schools.

BCPS will employ teachers in the specialized courses of instruction in the magnet programs who are certified or licensed by the State of Maryland. Secondary teachers will be certified and licensed to teach, or supervise others who are teaching, the subject matter of the courses of instruction. While teacher retention is of great importance to schools and the school system, staff attrition is a reality. As attrition occurs at any of the six MSAP grants schools, school principals and OMP will work collaboratively with the BCPS Office of Human Resources to

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ensure that staff are identified and ultimately hired who support the school's magnet focus and promote students' achieving at their highest academic potential.

For the proposed BCPS magnet initiative, the principal instructional personnel will consist of six **Resource Teachers** (1 per school). The Resource Teachers, whose roles are described in detail in the Quality of Management Plan, will be qualified individuals who will be appropriately licensed in the subject areas for which they will be assigned and have received exemplary recommendations and/or ratings, as will all classroom teachers in the six magnet schools. Specifically, the Resource Teachers will have demonstrated competence in the following areas: instruction of heterogeneously grouped classes consisting of children from diverse ethnic, racial, and socioeconomic backgrounds with varying levels of academic skills; expertise in either health science, medical, or STEM-related fields or an IB program; use of innovative, evidence-based teaching methods, including inquiry- and project-based learning; development of theme-related curriculum materials; and demonstrated effectiveness in the evaluation of student academic performance, including the use of authentic assessments. Additional qualifications for the position of Teacher Specialist include a Master's Degree and five years of teaching experience, with a preference for teaching experience in a magnet school, and possession of or eligibility for a Maryland Advanced Professional Certificate.

In addition to the MSAP-funded, school-based staff, each of the proposed magnet schools has a core group of staff whose expertise in key areas of magnet program design implementation will be leveraged to accelerate the seeding of the program. Highlights of these key staff members' qualifications are summarized below:

- Samantha Maile, S.T.A.T. teacher at Woodmoor ES, currently oversees implementation of a

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blended-learning environment and works with teachers to use a multitude of assessment data points to inform instructional practices that positively impact student learning. Mrs. Maile serves as an instructional coach to support teachers in implementing best practices and effective strategies. Her strong background in supporting student-centered learning will be a valuable asset in the development of the PYP magnet program.

- Anu Bajpair is the Science Department Chair and an Interdisciplinary Team Leader at Windsor Mill MS, where she serves as the coordinator for the school's STEM Fair, Northbay Environmental Camp, and Robotics Club. She has received awards from Summer Soil Institute, Honeywell Space Academy for NASA Space Program, and the *U.S. Black Engineer of Information Technology Magazine*. Ms. Bajpair holds Masters' Degrees in Teaching and Biochemistry.
- Katie Judge, science teacher at Middle River MS, has a strong background in STEM, curriculum development, and staff training. Ms. Judge was transdisciplinary 6th grade team leader in the STEM program at Holabird MS, for which she developed STEM curriculum units and interdisciplinary STEM projects using a project-based learning approach. Ms. Judge will serve as a strong support for the Global Studies in Science and Technology IB program.
- Megan Wrede is the Department Chair and Teacher of World Languages at New Town HS and has taught French and Spanish for the past five years. Ms. Wrede has a Bachelor's Degree in Communication Studies at Towson University and a Master's degree in Spanish Literature from Middlebury College. Ms. Wrede has worked with the Refugee Program providing translation and interpretation services and has volunteered with global support

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organizations in Romania and the Dominican Republic. Her experience and expertise will to support the Global Citizenship IB magnet program at New Town HS.

- Danyelle Maddox is an 8th grade science teacher at Golden Ring MS. Before becoming an educator, Ms. Maddox was a research technician for a drug manufacturing company conducting phase 1 trials as well as a research company conducting breast, prostate, and ovarian cancer research. She has earned a Bachelor's degree in Biology and has taken graduate-level course work in allied health and physical therapy. Her expertise will support the development of thematic curricula for the new health science magnet.
- Dr. Alan Thomas-Chesley is a former research scientist who is currently a science teacher at Overlea HS, where he teaches biomedical sciences classes and is the Science Department Chair. He is also an affiliate instructor in the Department of Biology at Loyola University. He has an extensive background in curriculum writing, PD, and health sciences instruction, which will serve as a strong support for curriculum development for the biomedical technology magnet units and electives.

The BCPS Office of Staffing is part of the Department of Human Resources, and is responsible providing a broad spectrum of support services for prospective and current employees. Our students will only succeed if their teachers do – so BCPS works hard to provide every teacher with outstanding system-wide and school-based instructional support. The Office of Staffing also supports the goals of the *Blueprint 2.0* by developing and implementing a comprehensive Human Resources management plan that addresses recruiting and selecting qualified and effective staff at all levels of the organization. BCPS recruits on the local, state, and national levels, leveraging relationships with local universities, face-to-face recruiting events

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throughout the country, print media, as well as social media tools. Magnet school principals, the OMP, and the Office of Human Resources will work collaboratively to recruit MSAP staff.

Within each BCPS magnet school, the effectiveness of Resource Teachers and classroom teachers will be evaluated using evidence-based practices adopted by BPCS informed by Charlotte Danielson's Framework for Teaching, which includes frequent observations using teaching practice rubrics and provision of timely and specific feedback. Student outcome measures, such as standardized assessment scores, will also be analyzed for classrooms of students to evaluate teacher effectiveness and identify areas in need of improvement. As highlighted in QPD, the District, as well as each magnet school, will offer a robust program of PD to build the capacity of the school staff to implement and sustain the magnet programming beyond the funding cycle.

In sum, the combined expertise of District- and school-based staff in fields related to the objectives of the magnet program will ensure the District's and schools' effectiveness in making progress in the broad areas of systemic reform embodied in the MSAP statute.

(2) To determine personnel qualifications, the Secretary considers experience and training in fields related to the objectives of the project, including the key personnel's knowledge of and experience in curriculum development and desegregation strategies.

As Supervisor of OMP for the past 14 years, Bryan Stoll has overseen the development, implementation, and evaluation of more than 140 magnet programs. As noted earlier, he served as manager of BCPS's previous MSAP grant which helped to develop four new whole school programs that have been sustained successfully over the past 10 years since the grant ended. Mr. Stoll currently serves as Regional Director for MSA, where he has served as a Board member for

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the past three years. As Board member, he is responsible for representing and assisting magnet schools and Districts in six states and the District of Columbia, chairing the Member Value project workgroup, and serving as a member of the project work groups for New Opportunities, Awards, and Regional Directors. Mr. Stoll has served as a strong liaison for BCPS to MSA and has conducted, organized, and facilitated more than 65 presentations at magnet conferences and has organized, coordinated, and hosted two conferences in Baltimore for MSA. BCPS magnet schools regularly present at MSA local conferences on various topics, e.g., marketing and recruitment, family and community partnership development, vertical program and team development, and integrating innovative and technology-based instructional practices. In his roles as Supervisor and Magnet Program Coordinator within OMP, Applied Research Coordinator in a BCPS magnet school, and Regional Director with MSA, Mr. Stoll has amassed extensive experience and participated in numerous trainings focused on desegregation and magnet program administration.

In his role as Project Director, Mr. Stoll will work under the direct supervision of Leeann Schubert, Director of Educational Options. In her position, Ms. Schubert works directly with BCPS Curriculum Offices to ensure that Educational Options programs and magnet programs are aligned with and complement the BCPS curriculum and serve to ensure that every student graduates BCPS as a globally competitive student. Ms. Schubert also has extensive experience providing PD to teachers and school leadership on such topics as using data to drive instructional decision-making and school improvement strategies. At the Johns Hopkins University Center for Technology in Education, Mrs. Schubert coordinated and launched local, state, and national PD initiatives focusing on General Education and Special Education collaboration in an inclusive

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setting using research based cooperative learning strategies based on the work of Dr. Robert Slavin and Dr. Spencer Kagan.

(e) Quality of Project Evaluation

The Secretary considers the quality of the evaluation to be conducted of the proposed project.

The project evaluation of the proposed BCPS magnet initiative will include (1) formative and summative components to provide continuous feedback to the District on the effectiveness of program implementation and activities in meeting project objectives and PMs, and (2) a well-designed impact study that uses a rigorous research design to test for theoretical linkages between implementation of at least one key project component and at least one relevant outcome presented in the logic model.

The evaluation design will guide the collection of data from multiple sources and stakeholder groups to provide feedback and findings to examine several overarching research questions:

1. To what extent are the MSAP-related outreach and student recruitment activities helping the District to meet the MGI targets outlined in the grant? How can outreach and student recruitment activities be improved?
2. To what extent is grant-funded PD building the capacity of teachers and staff to implement and integrate evidence- and research-based instructional strategies into classroom instruction? How can PD offerings be improved?
3. How has the grant supported the development of unique thematic curricula and enrichment activities? How can curriculum development efforts and products be improved?
4. To what extent are academic achievement outcomes of all subgroups of students in the

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magnet schools improving over the five-year grant period?

5. Are there differences in academic achievement gains among subgroups of students, such as by demographic characteristics, level of teacher participation in MSAP-related PD, and by home school (within or outside zone); and to what extent do those differences or gaps change over the five-year grant?
6. What impact does participation among magnet middle school students in the IB MYP have on academic achievement outcomes in reading and math? How do achievement gains of treatment students compare to those of non-treatment comparison students?

BCPS proposes to retain Metis Associates to conduct the impact study (as described in section 1) and the comprehensive project evaluation of the MSAP grant initiative (described in section 2). Metis is an education research and evaluation firm that has provided technical assistance and professional support for a wide range of education and human services initiatives for the past 39 years. Metis has conducted evaluations of MSAP initiatives over the past 10 MSAP funding cycles for 11 community school Districts in New York City; Broward County, FL; Champaign, IL; Orangeburg County, SC; and Beacon, NY. Metis served as the external evaluator for BCPS's MSAP grant during the 2004–07 funding cycle. Metis has also conducted system-wide evaluations and audits of magnet and choice programs for several large school Districts including for Baltimore County in 2013, Montgomery County (MD) Public Schools in 2015, Broward County in 2014, and Pittsburgh Public Schools in 2008.

The evaluation of the BCPS magnet initiative will be directed by Claire Aulicino, a Senior Associate at Metis (see résumé in Attachments). Ms. Aulicino has more than 17 years of experience in designing and conducting program reviews and evaluations in the area of K-12

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education. For the past 13 years, the focus of her work has been on school choice and magnet programs. She has directed evaluations of MSAP grants over the past six MSAP funding cycles and she has served as the lead evaluator for 13 MSAP grants, including in BCPS in 2004–07. She also served as the lead researcher on the District-wide evaluations of magnet and choice programs for Montgomery County (MD) Public Schools in 2015, Broward County Public Schools in 2014, and BCPS in 2013. She also conducts evaluations in the areas of educational technology, STEM education, and out-of-school time programs.

For the impact study, Ms. Aulicino will be supported and advised by Metis’s Senior Associate for Design and Analysis Dr. Zhu (see résumé in Attachments). Dr. Zhu is an expert in research design, statistical analysis, survey research, and data management functions. She has played a key role in developing and/or implementing rigorous designs (both experimental and quasi-experimental) and applying advanced statistical techniques to evaluate intervention effectiveness and help programs become evidence-based. Dr. Zhu is in the company of only approximately 300 researchers nationwide who are certified as eligible to review education research studies for inclusion in the What Works Clearinghouse (WWC), and thus is intimately familiar with the level of evidence that is specified in the Notice of Funding Availability and that the evaluation is expected to address. Metis is certified as Dr. Zhu’s organizational affiliation. Dr. Zhu holds a Ph.D. in Quantitative Research, Evaluation, and Measurement, and a M.A.S. in Applied Statistics, both from The Ohio State University.

In her role as Evaluation Director, Ms. Aulicino will be supported by highly qualified staff, including Dr. Zhu, and will regularly consult with Metis’s Design Consulting Committee (DCC) on all aspects of the evaluation. The DCC ensures that evaluation designs and analyses that are

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carried out are sound, of high quality, and appropriately address the key research questions. The DCC is a key component of Metis's quality management process and provides a systematic review of the data and assurance of high technical standards in line with the accuracy standards of the Joint Committee on Standards, and with the American Evaluation Association's principles for Systematic Inquiry. In addition, Metis has a duly constituted Institutional Review Board that is registered with the U.S. Department of Health and Human Services (IRB #00003465) and assures compliance with Federal-Wide Assurance requirements for the Protection of Human Subjects (FWA #00004755). Members of the IRB are specialized in various social sciences and are experienced in all aspects of field-based research and evaluation. Metis's IRB meets as needed to review evaluation designs and guarantee protection to human subjects for Metis's research studies. The IRB has submitted and gained approval for study protocols from numerous external IRBs from school Districts around the country. Furthermore, to obtain extant data to support research and evaluations within localities, Metis has successfully negotiated data sharing agreements to gather identifiable (when warranted) and de-identified individual student- and teacher-level data with numerous local education agencies across the United States.

(1) The Secretary determines the extent to which the methods of evaluation will, if well-implemented, provide evidence of promise.

Guided by the *What Works Clearinghouse (WWC) Procedures and Standards Handbook* (v3.0, 2014), Metis proposes to conduct a rigorous evaluation that is capable of producing evidence of promise if well-implemented. The rigorous evaluation, or impact study, will be conducted to establish empirical evidence to support the theoretical linkage between participation in the IB MYP program (key component) and student achievement in reading and

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math (relevant outcomes) as presented in the logic model in the QPD section.

The impact study will build the research base on the effect of IB programs on student achievement outcomes. As described in the CPP 2 and the QPD, there is strong evidence that the IB DP produces improvement student outcomes, specifically college and career readiness. This impact study will test the impact of the IB MYP on student achievement outcomes and will add to an emerging body of positive evaluation findings for the impact of MYP on student behaviors. One study, for example, indicated that students who attended IB MYP programs were more likely to take an advanced placement course in high school than demographically matched students who did not attend an IB program. In this same study, IB students were also more likely to earn a college-readiness-level score on their end of course exams (Wade & Wolanin, 2015). Other studies indicate that participation in an IB program has also shown to build cognitive skills such as critical thinking and self-directed inquiry. BCPS is engaged in making a significant investment in IB programming, and this study will inform implementation and scaling of these programs and practices across the District.

The impact study will be informed by qualitative and quantitative data to measure implementation of the MYP. These data, as described below in section 2, will be collected from multiple sources and methods to measure fidelity of implementation of the MYP intervention and whether implementation varies across grades, schools, and time, and will describe any variations in implementation fidelity. Guided by implementation data, the impact study will use a rigorous design to estimate the impact of the IB MYP on intended student outcomes at different points in time based on treatment-comparison contrasts.

Study Design: Given that the MYP intervention is a whole-school program and the target

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schools have attendance zones, it is not feasible to randomly assign students to the treatment. Because a randomized controlled trial (RCT) design would not be viable for this study, in accordance with the WWC guidelines, Metis is proposing a rigorous, quasi-experimental matched comparison group design based on a propensity score matching (PSM) approach. PSM is often considered the best available approach to generating a comparable group of non-participants without random assignment (Guo & Fraser, 2009). Under the PSM framework (Rosenbaum & Rubin, 1983, 1984, 1985; Rosenbaum, 1991, 2002), any initial statistically significant imbalances on observed covariates (e.g., demographic variables and baseline achievement) between treated and comparison groups can be greatly reduced or even removed. PSM techniques first summarize all pertinent characteristics observed prior to treatment (i.e., the matching variables) into a single score (i.e., the propensity) that indicates the predicted conditional probability of an individual participating in a given program. After propensity score estimation, PSM techniques typically match each program participant with one or more comparison students with similar propensity scores.

Using PSM, students who are enrolled in the target grade (6th) in the two IB MYP magnet schools (Windsor Mill MS and Middle River MS) in fall 2017 will be matched 1:1 with comparable students in similar non-participating schools in the same school district based on important observed baseline characteristics related to the outcomes of interest.² Depending on data quality and availability, the matching variables may include, but not be limited to: (1) at the student level – baseline achievement (previous ELA/Reading and Math scale scores as measured

² Note that student joiners after the project starts will be removed from matching and analysis if determined necessary.

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by the Measures of Academic Progress or MAP assessments), grade level, age, gender, race/ethnicity, special education status, and previous school year average daily attendance; and (2) at the school level – enrollment size, percent FARMS, percent by race/ethnicity, percent male, percent ELL students, percent special education students, and percent previous cohort proficient in MAP in reading and math. After PSM, tests of baseline equivalence of the treatment and comparison groups in each analysis sample will be conducted to ensure that the evaluation eliminates overt selection bias and meets the WWC evidence standards, albeit with reservations owing to the fact that unobserved variables may not be equated between the two groups.

Analysis Plan: To provide information for project implementation and improvement as well as to better interpret project impacts, every effort will be made to track data on key project inputs (e.g., level of PD provided, number of IB MYP units implemented, and IB assessments completed). To investigate the impact of the IB MYP intervention as implemented, Metis will use regression-type analyses for each year's outcome analyses, in addition to providing descriptive and/or correlational analyses of quantitative data. Since the study will involve multiple grades, achievement test scores in each grade (as necessary) will be converted to z-scores or another common metric, when needed, to produce combined impact estimates. The analysis models employed will statistically control for multiple covariates (e.g., students' pre-test and demographic variables and school-level characteristics). Statistical significance adjustment procedures (e.g., Benjamini-Hochberg, Bonferroni) will be applied when multiple comparisons are involved for confirmatory contrasts specified in the same outcome domain. In addition, appropriate effect size indices (e.g., Hedges' g , Cox index) will be calculated to measure the practical importance of the findings. All aspects of the analysis plan will be aligned with the

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latest WWC requirements.

Sample Sizes and Minimum Detectable Effect Sizes (MDESs): Given the parameters of this proposed study, we obtained an estimated MDES of 0.076 standard deviation for key outcomes in overall impact analyses. This calculation was based on a sample of 2,750 subjects (1,375 treatment/1,375 matched comparison) and would provide adequate power (.80) to detect the above-stated estimated MDES, assuming pertinent covariates explain 50% of variation in a given outcome at a significance level of .05 for a two-tailed test under the regression framework. The proposed study is therefore capable of detecting small project impacts.

Key Outcomes and Measures: The project logic model identifies ELA and Math academic performance as key target student outcomes. MAP (ELA and Math) scores administered by the District in each year of implementation will be used to measure student achievement. To meet the WWC outcome standards, Metis will ensure that each outcome measure used for the project impact evaluation has face validity, adequate reliability, and consistency in measurement in both treatment and comparison groups, without over-aligning with the intervention. The impact study will be conducted to produce evidence of promise to support causal relationships of one key component (IB MYP) on two relevant outcomes (achievement in ELA and Math).

(2) The Secretary determines the extent to which the methods of evaluation include the use of objective performance measures that are clearly related to the intended outcomes of the project and will produce quantitative and qualitative data to the extent possible.

In order to assess implementation and impact of the BCPS magnet initiative, Metis will conduct a project evaluation designed to assess the implementation of all project activities and the extent to which the activities support achievement of all of the project outcomes and outputs,

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as articulated in the BCPS MSAP logic model and the project and GPRA-level PMs. The evaluation design includes formative and summative components and utilizes multiple measures over multiple groups of subjects. Data from all sources will be synthesized and analyzed to maximize precision of outcome information and enrich the capacity of the Project Director and the BCPS MSAP stakeholders to make informed and timely decisions about program development and implementation.

The formative evaluation will focus on program implementation and assessment of project activities. Ongoing formative feedback will be provided to the Project Director and the school-based magnet teams about the extent to which project activities are being implemented as planned and in line with the intended outcomes. This feedback and data will be critical for ensuring that the project is well-positioned to meet its objectives and PMs and to make adjustments as part of a continuous improvement model. As described in the Quality of Management Plan section, the continuous improvement process will be instrumental to ensuring the project activities are planned, implemented, assessed, and modified, as needed in order to achieve the grant objectives. The Project Director and key stakeholders will regularly use evaluation data to “check” activities to ensure they yield the desired results.

Formative evaluation methods, including documentation reviews, written surveys, interviews, and biannual field observations, will be conducted to answer key questions about: the outreach and recruitment strategies being used; how the schools are planning, developing, and implementing the themes and ensuring that all students have access to magnet thematic curricula and activities; the types of staff development being offered and the levels of participation in these; and the collaborations, among instructional staff, within the school community, and with

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external partners, being fostered to support the program. Quarterly written project status reports, monthly telephone and email communications, and presentations by the evaluator will provide the Project Director, OMP, the CAO, and the Superintendent with formative feedback on program implementation and best practices.

The Project Director and other MSAP staff will provide opportunities for other stakeholder groups, such as parents, staff, students, and community and business members to review and provide feedback on evaluation findings through a variety of methods. The MSAP staff will conduct presentations of evaluation findings and recommendations to these other stakeholder groups, including parents and staff at PTA and faculty meetings and during school family events; students at assemblies and through morning announcements; and to community and business members in partner meetings and community meetings such as those of the Chamber of Commerce. The Project Director will also work with the District's Office of Communications and Community Outreach to share information through press releases, social media posts, and information on the District's website.

Summative evaluation activities will be conducted to assess the program's attainment of the intended outcomes, as outlined in the logic model and project PMs. The summative evaluation methods will include the analysis of data collected through monthly program implementation logs, stakeholder surveys, student checklists, enrollment and applicant pools, and standardized achievement test scores.

This section presents the project PMs that will be used to assess the extent to which the four project-level objectives that are described in the Quality of Management Plan section are being met in each year of the grant and the specific methods that will be used to collect and analyze

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data to evaluate impact on each PM.

Project Objective 1: Reduce or eliminate minority group isolation among African American students in proposed magnet schools. The following PMs will be used to evaluate the extent to which Project Objective 1 is met over the five-year grant period.

PM 1.1 (GPRA Measure): Through implementation of whole-school magnet programs, each magnet school will achieve reductions in MGI among African American students. The proportions of African American students will be reduced at each school by the following percentages for each year based on the enrollment projections presented in Table 3 in the Attachments.

School	Baseline (2016-17)	Year 1 (2017-18)	Year 2 (2018-19)	Year 3 (2019-20)	Year 4 (2020-21)	Year 5 (2021-22)
Woodmoor ES	90.8%	89.4%	87.1%	84.6%	82.8%	80.7%
Golden Ring MS	62.6%	61.5%	59.3%	56.9%	54.7%	52.7%
Middle River MS	42.2%	41.8%	40.9%	40.1%	39.4%	38.7%
Windsor Mill MS	91.3%	89.0%	86.8%	84.6%	82.2%	78.9%
Overlea HS	67.8%	66.3%	64.2%	61.9%	59.4%	57.3%
New Town HS	91.2%	88.6%	86.5%	84.0%	81.9%	79.8%

PM 1.2: As a result of ongoing outreach and student recruitment efforts and the development of innovative educational programming, the number of students who apply to each of the magnet schools will increase by 5% in each of Years 2 through 5 of the grant over the prior year, compared with baseline data collected in Year 1.

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Evaluation Methods for Project Objective 1: Data to assess PM 1.1 will be obtained from an annual analysis of student enrollment data from the District's registers for all active students as of October 1 of each project year. Frequency calculations will be conducted by school and grade to determine the number and proportion of students by racial/ethnic group. Data to assess PM 1.2 will be collected from magnet application data to determine the number of applications by school in each year of the grant. Results from the enrollment and application data will be synthesized with data on outreach and recruitment logs and marketing materials for each school and the District to assess the effectiveness of the outreach and student recruitment plans.

Project Objective 2: Ensure that all students attending the magnet schools meet challenging academic standards and are on track to be college- and career-ready.

The following PMs will be used to evaluate the extent to which Project Objective 2 is met over the five-year grant period.

PM 2.1 (GPRA Measure): At each magnet school, students in each racial/ethnic group, students with disabilities, low-income students, and ELLs will demonstrate measurable improvements in academic achievement in ELA/English as measured by an increase of four or more percentage points in the proportion of students in each tested grade level who meet the grade level standards on MAP assessments in ELA (Grades 3-8) or English 10 (high school) *in each project year* and, by Year 5, the overall increase will be statistically significant.

PM 2.2 (GPRA Measure): At each magnet school, students in each racial/ethnic group, students with disabilities, low-income students, and ELLs will demonstrate measurable improvements in academic achievement in Math as measured by an increase of four or more percentage points in the proportion of students in each tested grade level who meet the grade level standards on MAP

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assessments in Math (Grades 3-8) or Algebra I (high school) *in each project year* and, by Year 5, the overall increase will be statistically significant.

PM 2.3: At each magnet school, students in each racial/ethnic group, students with disabilities, low-income students, and ELLs will demonstrate measurable improvements in academic achievement in Science as measured by an increase of four or more percentage points in the proportion of students in each tested grade level who meet the grade level standards on MISA (Grades 5 and 8) or Biology (high school) *in each project year* and, by Year 5, the overall increase will be statistically significant.

Evaluation Methods for Project Objective 2: The standardized instruments for student assessments include the MAP exams that are administered to students annually in ELA and Math for grades 3-8 and English 10 and Algebra I for high school students; and the MISA for grades 5 and 8 and Biology for high school students. Results for these tests are expressed both in scale scores and performance-level equivalents. Scale scores are equal-interval, criterion-referenced scores that create a continuous scale that extends across grade levels. For each grade, scores are categorized into one of five performance levels: Level 1 (did not yet meet expectations), Level 2 (partially met expectations), Level 3 (approached expectations), Level 4 (met expectations), and Level 5 (exceeded expectations).

Student achievement results for ELA, Math, and Science will be derived from performance-level analyses using matched data to calculate the proportions of students in each year who meet or exceed the learning standards (performance levels 4 and 5). Because the Science assessments are administered only in grade 5 and 8, cohort analyses will be conducted to measure changes in proportions of students who meet or exceed the standards. Chi Square Tests of Independence or

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other appropriate statistical measures, such as McNemar tests, will be conducted to determine if changes in student achievement occur from one year to the next and if differences in achievement by student subgroup are statistically significant and educationally meaningful. All analyses will be conducted by school, grade level, and student subgroup, including each major racial/ethnic group, students with disabilities, low-income students, and ELLs, except in cases where the number of students in a category is less than 10 and thus insufficient to yield statistically reliable information or where the results yield personally identifiable information.

Project Objective 3: Ensure that *all* students attending the magnet schools benefit from the magnet’s educational offerings and have equal opportunities to gain magnet theme-specific value-added skills and knowledge. The following PMs will be used to evaluate the extent to which Project Objective 3 is met over the five-year grant period.

PM 3.1: As part of the magnet program at each school, all (100%) students will be exposed to at least one new thematic curriculum unit in Year 1; at least two new thematic curriculum units in each of Years 2 and Year 3; and at least four new thematic curriculum units in each of Years 4 and 5.

PM 3.2: As part of the magnet program at each middle and high school, the proportion of students who opt to be enrolled in new, theme-based magnet elective courses will be 25% in Year 1, 33% in Year 2, 50% in Year 3, and 66% in each of Years 4 and 5.

PM 3.3: Through their participation in the magnet program, the proportion of students in each school who demonstrate mastery in a set of unique, magnet value-added standards and skills will increase by at least 5 percentage points in each year of the grant, compared with baseline data collected in Year 1.

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Evaluation Methods for Project Objective 3: Data to assess PMs 3.1 and 3.2 will be derived from a systematic review of curriculum development and implementation logs and copies of thematic curriculum units and magnet elective course registration and enrollment data. Data to assess PM 3.3 will be assessed with the annual administration of authentic student performance assessments that will be developed by the magnet staff at each school in collaboration with District MSAP staff, the external evaluator, and program partners and based on published literature and research. The assessments, which will be completed by teachers for each student, will measure student attainment and mastery of unique, magnet value-added skills. The skills will include theme-related content skills and 21st century skills, such as motivation, persistence, and communication, and will be specific to each school's magnet theme and curriculum. The assessments will be administered in the spring of each project year and analyzed by school, grade, and student subgroup using frequencies and cross-tabulations to determine the proportion of students who master the skills in each year. The assessments will be pilot-tested in Year 1 with item analyses and reduction conducted to ensure validity and reliability of the items in measuring the intended outcomes.

Qualitative data to provide contextual information about the implementation of thematic curriculum units and elective courses at each school and student attainment of magnet value-added skills will be obtained from biannual site visits by the evaluator to each magnet school in each project year, which will include class observations and interviews and focus groups with planning team members, teachers, parents, and students.

Project Objective 4: Build the capacity within the magnet schools to provide rigorous, theme-based instructional programs that will help promote choice and diversity in BCPS.

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To build staff capacity, each magnet school will develop a comprehensive five-year PD plan to outline implementation of staff development directly related to the magnet theme and evidence- and research-based instructional practices that are outlined in the MSAP grant application. The following PMs will be used to evaluate the extent to which Project Objective 4 is met over the five-year grant period.

PM 4.1: Based on the PD plans, the following proportions of staff in each school will participate in 50 or more hours of magnet-related PD in each year of the grant: 25% or more of instructional staff and school leaders in Year 1, 50% of instructional staff and school leaders in Year 2, and 100% of instructional staff and school leaders in each of Years 3-5.

PM 4.2: Through their participation in magnet-related PD, the proportion of teachers in each school who report using strategies and concepts related to the magnet theme and innovative instructional strategies will be at least 25% in Year 1, 50% in Year 3, and 100% in each of Years 3-5 of the grant.

Evaluation Methods for Project Objective 4: Data to assess PM 4.1 will be derived from a review of each magnet school's annual PD plan, school and District PD activity logs, and PD agendas and sign-in sheets. Data to assess PM 4.2 will be derived from an analysis of checklists completed by instructional staff that will be developed by the external evaluator in consultation with the school and District MSAP staff to collect data on classroom practices and use of instructional strategies presented in grant-funded PD and job-embedded coaching. Data will be collected annually and analyzed by school and for the project using frequency and cross-tabulation calculations.

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In addition, in each year of the grant, surveys will be administered to instructional staff, parents/guardians, and students in each magnet school. All surveys will be administered online and in paper version in the spring of each project year.

- The staff survey will be administered to collect data from staff about their satisfaction with grant-funded PD, perceptions about impact of the PD on staff's knowledge, skills, and confidence in key concepts addressed in the PD, and areas in which they need or would like additional PD. The survey will also measure staff's awareness and support for the magnet program and their participation in and satisfaction with program planning.
- The parent/guardian survey, which will be available in English, Spanish, Arabic, Chinese, Burmese, and Urdu, will collect data on parent/guardians' awareness of, satisfaction with, and participation in magnet program activities, as well as perceptions about impact of the program on student outcomes, and suggestions for improvement.
- The student survey will collect data on participation in and satisfaction with different magnet program activities, perceived impact of the magnet program on student learning and other outcomes, such as interest in theme-related careers, and suggestions for improvement.

All surveys will be anonymous and will be analyzed by school and for the project using frequency calculations and cross-tabulations. These data will be used for formative evaluation of the PD and will be used by the Project Director and Site Coordinators for program development. The surveys will be pilot-tested in Year 1 with item analyses and reduction conducted to ensure validity and reliability of the items in measuring the intended outcomes.

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All data collected through the project evaluation will be triangulated to incorporate perspectives from the diversity of program stakeholder groups. The findings will be synthesized to objectively *document* the effort expended to implement program activities and determine the *effectiveness* of project activities and *efficacy* of the project in relation to outcomes achieved. Results of the external evaluation will be provided to the Project Director through monthly communications and status updates and biannual summary reports. The evaluator will also provide ongoing informal feedback as data are collected and participate in project management meetings that are conducted by the Project Director. Ongoing feedback will ensure that the evaluation supports continuous improvement of the project.

The results of the quantitative and qualitative data analyses will be synthesized and presented by BCPS to the USDOE in the Annual Performance Reports and Ad-Hoc Reports for each project year, including a final report at the end of the grant period. Metis will assist BCPS staff in preparing the reports to present succinct findings about the success of the project in meeting the intended outcomes that are outlined in the project objectives and PMs. The District will also provide data to the USDOE to report on progress on the five program level measures as required by Government Performance and Results Act (GPRA). The measurement framework that will be used to guide the program evaluation is presented at the end of the section.

(3) The Secretary determines the extent to which costs are reasonable in relation to the objectives, design, and potential significance of the proposed project.

The evaluation costs reflect the total amount of resources that is needed to address the research questions and meet the MSAP program evaluation goals, in terms of providing formative and summative data for continuous program improvement of the project and

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addressing the GPRA and project-level PMs in each year of the grant period.

At the same time, the evaluation budget provides an adequate level of resources to conduct a well-designed and well-implemented impact study that will build evidence of promise for the impact of the project on the intended outcomes. In order for the study to produce evidence of promise, Metis has proposed a quasi-experimental design using PSM to identify a well-matched comparison group. Building evidence of promise through the impact study will contribute to the growing knowledge base about the type of magnet program interventions that are proven to have positive and educationally meaningful effects of student achievement outcomes. This knowledge serves as an essential resource for districts across the country for designing instructional programs and interventions to address student learning and achievement needs. The inclusion of an impact study requires the robust level of resources that has been allocated in the budget.

The evaluation design includes resources for a robust set of on-site data collection activities, including biannual visits to each proposed magnet school to collect formative and summative feedback from multiple stakeholder groups through focus groups, interviews, and classroom observations. Additionally, resources are allocated to administer annual surveys of magnet school staff and other key stakeholders to provide opportunities for all stakeholders to provide feedback, in an anonymous and sanction-free environment. Resources are also allocated for the proper processing and analysis of these qualitative data to ensure that all human subjects rights are adhered to and respected.

Finally, included in the evaluation budget are costs associated with implementing a comprehensive set of qualitative and quantitative data analyses and reporting activities. For example, the evaluation requires a detailed analysis plan to assess outcomes of students in each

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school and by subgroup to evaluate progress of the grant in meeting the goal to improve student achievement. The evaluation budget includes funds for the adequate reporting of data, both formative and summative, to ensure that project staff can effectively integrate findings, in real time, into the continuous improvement process. The reporting structure includes annual summative reports as well as interim reports from the biannual site visits and monthly formative feedback mechanisms, such as teleconferences and email communications.

All possible efforts have been made to minimize evaluation costs and we believe that the costs are reasonable in terms of the benefits and potential significance of the proposed project. The evaluation also has been designed with attention to cost efficiencies, e.g., avoiding redundant data collections and relying on administrative data files to the extent possible, using multiple methods of data collection and triangulating findings, implementing minimally intrusive data collections, and using a variety of means of communication (e.g., video-conferencing where appropriate) to minimize costs associated with travel on the part of the evaluation team.

Finally, the evaluation budget includes limited funding for BCPS's Department of Research, Accountability, and Assessment to defray the costs of the incremental work associated with the summative reporting activities of the grant. These activities will leverage the services and institutional knowledge of the internal research staff to support analysis of student-level data to assess progress toward meeting the PMs outlined in the evaluation plan.

Altogether, the evaluation costs represent approximately 3% of the total grant request, a small investment in light of the expected return in knowledge gains regarding effectiveness of the proposed MSAP program model.

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BCPS MSAP Program Evaluation Measurement Framework

Outcomes/Outputs (as per logic model)	Indicators	Measures of Change	Data Collection Methods	Data Sources	Frequency of Data Collection
Program Outputs					
Interdisciplinary, PBL thematic units of study for all grade levels (Performance measure 3.1)	Implementation of interdisciplinary, PBL thematic units	Proportion of students exposed to thematic curriculum units	Review of program documentation and curriculum, Teacher focus principal interviews, class observations	Curriculum development and implementation logs and copies of thematic curriculum units, observation and interview protocols	Biannually
New magnet courses and course pathways (Performance measure 3.2)	Implementation of magnet elective courses	Proportion of students registered and enrolled in magnet elective courses	Review of program documentation and course enrollment data	Magnet course rosters	Biannually
Staff training (Performance measure 4.1)	Staff participation in magnet-related professional development	Proportion of teachers and school leaders enrolled in grant-related training and PD	Review of program documentation and PD participation data	PD plan, PD activity logs, and PD agendas and sign-in sheets	Annually
MSAP Outcomes (Short-Term)					
Reduced minority group isolation in magnet schools (Performance measure 1.1)	Proportion of students in each racial/ethnic group compared to total school population	Reduction in the proportion of African American students compared with the total school population	Analysis of the proportion of students by racial/ethnic group enrolled in each school	BCPS Official Student Rosters as of October 1	Annually

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Outcomes/Outputs (as per logic model)	Indicators	Measures of Change	Data Collection Methods	Data Sources	Frequency of Data Collection
Increased interest and demand from out of zone students (Performance measure 1.2)	Number of magnet applications submitted for each program	Increase in number of applications submitted for each school	Analysis of number of applications	BCPS Magnet application data files as of October 1	Annually
Improved student achievement (Performance measures 2.1, 2.2, 2.3)	Student proficiency on state assessments in ELA, math, and science	Increase in the proportion of students who meet or exceed expectations on state assessments	Review of student scores on state assessments	PARCC assessments in ELA and math (grades 3-8) and English 10 and Algebra I (high school), MISA (grade 3-8) and Biology (HS)	Annually
Increased student mastery of applied and marketable skills (Performance measure 3.3)	Demonstration of magnet value-added skills	Increase in proportion of students who demonstrate mastery of magnet value added skills	Analysis of data on student performance assessments, teacher and student focus groups, principal interviews, class observations	Student performance assessments observation and interview protocols	Annual assessments, biannual site visits
Increased staff use of innovative teaching strategies (Performance measure 4.2)	Demonstration of knowledge and skills related to magnet themes and PD	Increase in proportion of staff who implement evidence and research-based strategies from PD	Analysis of staff checklist and survey data, teacher focus groups, principal interviews, class observations	Staff surveys, Observation and interview protocols	Annual survey, biannual site visits

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