

Table of Contents

<u>Section Title</u>	<u>Page Number</u>
GEPA	i
Abstract	iv
Table of Contents	v
Competitive Priority #1: Need for Assistance	1
Competitive Priority #2: Strength of Evidence	7
Competitive Priority #3: Selection of Students	14
Competitive Priority #4: Racial Integration and Socioeconomic Diversity	15
Desegregation	18
Quality of Project Design	42
Quality of Management Plan	96
Quality of Personnel	112
Quality of Project Evaluation and GPRA Measures	129
References	146
Budget Narrative: Itemized Budget and Indirect Cost Rate	150
Appendix A: Desegregation Plan, Resolution, and Tables 1, 2, 3, 4, 5 and 6	187
Appendix B: Resumes and Job Descriptions	201
Appendix C: Letters of Support	294
Appendix D: Evaluation Scope of Work	341
Appendix E: Evidence of Promise	353
Appendix F: Logic Models	637
MSAP Assurances	638
Single Point of Contact	639

CORNERSTONE 2017

The Wake County Public School System (WCPSS) in North Carolina has been a pioneer in magnet school education since 1976 when the district implemented a voluntary desegregation plan following the merger of the Raleigh City and Wake County school districts. In the ensuing 40 years, commitment to magnet schools has remained firm and public support for school choice and diversity has been strong. Although the district receives no state funds for magnet programs, the Wake County Board of Education (BOE) has provided consistent local funds to support these programs considered to be a “cornerstone” of the district’s portfolio of educational programming and core to its commitment to diversity.

On September 1, 2015, the Wake County BOE unanimously voted to reaffirm the WCPSS magnet school objectives, including the first two goals of “reducing high concentrations of poverty” and “promoting diverse populations.” This is just one instance in a longstanding commitment by the leadership and citizens of Wake County to prioritize providing students from varied backgrounds with the educational benefits of diversity and equitable access to a high-quality education that will enable all students to succeed academically.

WCPSS has experienced tremendous growth over the last 20 years and has encountered changing demographics as a result. An awareness of these changes necessitates that WCPSS be vigilant in its focus on academic achievement and be aware of the socioeconomic and racial isolation which can occur when a community experiences changing housing patterns as a result of population growth or decline. Over the years, MSAP funding has been essential in assisting WCPSS to eliminate, reduce, and/or prevent the isolation trends occurring in the community from penetrating our schools. Thus, WCPSS is requesting a five-year grant from the Magnet Schools Assistance Program (MSAP) for Cornerstone 2017.

The word Cornerstone captures the essence of Wake's proposal for the four project schools: Bugg Magnet Elementary Center for Design and Computer Sciences, Lincoln Heights Environmental Connections Magnet Elementary School, Millbrook Environmental Connections Magnet Elementary School, and Southeast Magnet High School University Connections: School of Design, Arts, and Engineering. Cornerstone 2017 illustrates the district's conviction that education is a right, a necessity for a strong society, and that transformative learning occurs when children interact with ideas and people who resemble and differ from them.

Funding from MSAP will enable the school district to enhance and expand its portfolio of magnet schools in support of three inter-twined goals that are at the heart of the MSAP: 1) reducing minority group isolation, 2) building staff capacity, and 3) raising student achievement. With this grant WCPSS will establish one new whole-school magnet program at Lincoln Heights Elementary and significantly revise the whole-school magnet themes of two existing elementary schools, Bugg and Millbrook, and an existing high school, Southeast Raleigh. Across the four schools, over 3,000 students will be served in year 1 and growing to over 3300 in year 5.

While a partnership with the US Department of Education's MSAP is critical, a key element of this proposal is building capacity within our community to maintain efforts seeded by MSAP funding through strong and sustainable collaborations. Our community is our greatest partner and asset in achieving goals set forth in the proposal that follows. In the district and community developed strategic plan, Vision 2020, six core beliefs were identified, two of which most specifically align to MSAP goals: 1) Every student is expected to learn, grow, and succeed while we will eliminate achievement gaps identified by socioeconomic status, race, and ethnicity and 2) The Board of Education, superintendent, and all staff value a diverse school community that is inviting, respectful, inclusive, flexible, and supportive. With the support of the MSAP grant, not

only will the project schools benefit, but the grant will buttress a “cornerstone” of the Wake County Public Schools - its award winning magnet programs.

COMPETITIVE PRIORITY #1: NEED FOR ASSISTANCE

Competitive Priority #1a: The cost of fully implementing the magnet schools project

WCPSS is the largest school district in North Carolina and the 15th largest district in the nation, enrolling over 159,000 students in 2016-17, with up to 9,000 more students anticipated by 2020. WCPSS has become an increasingly urbanized school district. Maintaining a balance of diverse populations while continuing to support *every* student to meet increasingly higher standards can be a challenge. To achieve the ambitious objectives of the MSAP grant, the total cost of the 2017-22 initiative (MSAP funding combined with district support) will approach \$33 million over the five-year project period. The school district is only able to cover \$17.7 million (54%) in project costs, and this proposal requests the remainder (\$14.8 million or 46%) from the MSAP. The breakdown of grant costs is summarized in Table 1.

Table 1: MSAP Budget Request by School and Central Operations

School	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Bugg	\$1,059,157	\$673,205	\$487,705	\$421,264	\$425,763	\$3,067,094
Lincoln Heights	\$483,294	\$746,214	\$413,384	\$371,479	\$367,857	\$2,382,228
Millbrook	\$744,438	\$806,150	\$330,257	\$287,266	\$282,548	\$2,450,659
Southeast Raleigh	\$1,452,557	\$1,202,199	\$787,880	\$577,282	\$571,075	\$4,590,993
Central Office	\$505,576	\$488,442	\$486,097	\$460,495	\$440,217	\$2,380,827
Total Request	\$4,245,022	\$3,916,210	\$2,505,323	\$2,117,786	\$2,087,460	\$14,871,801

The resources required to implement the MSAP initiative are clearly substantial; however,

the anticipated benefits of accomplishing the project objectives are equally substantial and include the development of high-quality and attractive thematic instructional programs, enhanced teacher and school capacity, and academic rigor—all leading to improved student achievement and reduction of minority and socioeconomic group isolation.

Competitive Priority #1b: Resources available to carry out project if funds not provided

Current State budget deficits have reduced funding to schools and resources are stretched at the district level to accommodate growing numbers of students entering our schools. Examples of State level decision-making impacting local budgets include: State increases in required retirement contributions and medical rates, changes in allowable sales taxes on services utilized by schools, increased numbers of charter schools resulting in more diversion of funds, and the elimination of funding for more students moving into the district. While the district is committed to fully investing resources into supporting Cornerstone, these resources are insufficient to implement the magnet themes proposed and achieve MSAP goals without a grant.

Competitive Priority #1c: Extent to which costs of the project exceed applicant's resources

The cost of implementing the Cornerstone project greatly exceeds WCPSS's current resources. One example includes transportation. While districts are provided some funding to support transportation, NC's funding allocations do not increase to cover the gap created when a school becomes a magnet and draws students from distant areas of the county. Simply funding transportation is a significant investment and a non-negotiable priority critical to the success of magnet programs in a geographically expansive district. However, as a result, transportation consumes significant resources that might otherwise be available for theme implementation.

In addition to allocating base months of employment for the newly designated magnet, Lincoln Heights Elementary, WCPSS will continue to maintain months of employment (MOEs)

at the three current magnet schools included in this proposal. Further, WCPSS is allocating additional MOEs to each of the three schools revising their themes to aid in the transition.

WCPSS has allocated the following: 50 MOEs at Bugg, 20 MOEs at Lincoln Heights, 40 MOEs at Millbrook, and 102 MOEs at Southeast Raleigh.

The estimated value of resources that the WCPSS will commit to the four Cornerstone schools during the performance period of this grant is \$3,531,576 per year for transportation, personnel, and associated fringe benefits. Without MSAP funding, that leaves a gap of over \$3 million on average per year and almost \$15 million over the five-year funding period.

Competitive Priority #1d: Difficulty of effectively carrying out the approved plan/project

Per official 20th day figures for the 2016-17 school year, the four schools have significantly higher percentages of African-American or Hispanic students than the district as a whole. In absence of MSAP funding, minority-group isolation is expected to continue to rise at these schools. To meet the project goals to **reduce** minority group isolation and improve student achievement at the four schools, these magnet programs must be powerful enough to attract a more diverse set of students and families. Presently, any additional district resources appropriated by the county from year to year are largely absorbed by the expense of building and staffing new schools and other expenses associated with changing student demographic trends rather than revising magnet themes. To carry out significant revisions and implement the new, powerful magnet programs described in this proposal, it is necessary to provide additional staffing, conduct extensive professional development, enhance facilities to support themes, refresh outdated technology, update instructional materials, and revise curricular offerings.

To successfully implement Cornerstone, the district must address unique challenges each school is expected to encounter. WCPSS serves a large geographic area covering 864 square

miles, one of the largest geographies served by a district in the U.S. The rapid growth in the suburban areas of Wake County presents increasing challenges for magnets. As the physical distance between magnet schools and student homes increase, and traffic congestion worsens, the opportunity at the end of a bus ride to a magnet school must be more attractive than ever.

Other challenges include: 1) the convenience of attending neighborhood schools for potential magnet families, 2) the reality of racially and socioeconomically isolated neighborhoods in Wake County, and 3) competing with growing numbers of private and charter schools. Wake County is home to 77 private schools enrolling over 17,000 students and 6,982 homeschools educating over 11,000 school-age children. In addition, the county's 19 charter schools attract another 11,000 students, doubling in number since 2010. That's 39,000 students who otherwise could be attending WCPSS schools and contributing to the racial and socioeconomic diversity of the school system. Private and charter schools in North Carolina are well known to be less racially and socioeconomically diverse than traditional public schools, and consequently contribute to the minority group isolation in WCPSS schools (Ladd, Clotfelter, & Holbein, 2016).

Wake County grows by 62 people per day and is the 46th most populous county in the US, topping 1,000,000 residents in August 2014. During the same time period, there has been flight to the growing number of charter and private school options available in the county. In addition, the number of residents living in poverty doubled in the last decade; now one in seven live in poverty. Of residents under the age of 18, 20% live in a food insecure home and receive public assistance (Youth Thrive, 2015). Increased traffic congestion and prior experience of NC transplants familiar with neighborhood schools have made drawing racially and socioeconomic diversity to magnet schools a challenge. The confluence of these factors require fresh and innovative magnet themes to heighten interest and increase healthy demographics at each school.

COMPETITIVE PREFERENCE PRIORTIY #2: STRENGTH OF EVIDENCE**Secretary determines extent to which applicant proposes to carry out new evidence-based or significantly revise an existing magnet school program using evidence-based methods.**

As noted above, with funding from MSAP, WCPSS will implement one new whole-school elementary magnet program (Lincoln Heights ES – Environmental Connections), two significantly-revised whole-school elementary magnet programs (Bugg ES – Center for Design and Computer Sciences and Millbrook ES – Environmental Connections), and one significantly-revised high school magnet program (South Raleigh HS – University Connections: School of Design, Arts, and Engineering) - see Table 6 for more discussion of these new and significant program revisions. All four programs will: 1) offer an innovative and unique magnet theme to attract a diverse population of students to the school and help **reduce** minority group and socioeconomic isolation, 2) embed evidence-based instructional practices into core instruction to help improve academic achievement and learning outcomes for all students, and 3) build staff capacity for a strong foundation and future success. The evidence-based practices and how they will be implemented to improve student outcomes in the magnets are described in this section.

The three elementary magnet programs will all implement Start Making a Reader Today (SMART), a What Works Clearinghouse (WWC) evidence-based reading tutoring program for students in grades 1 and 2 to boost students' early literacy skills, academic achievement in reading, and confidence and enjoyment of reading. Southeast Raleigh HS will integrate the WWC evidence-based Reading Apprenticeship – Reading Apprenticeship Academic Literacy (RAAL) program through a course for students below grade-level in reading. RAAL is a 9th-grade reading intervention designed to help students adopt strategies and routines that will improve reading proficiency and academic achievement in all content areas. As cited in WWC,

both programs—SMART and Reading Apprenticeship RAAL—have positive and educationally meaningful impacts on student academic achievement outcomes, similar to those that the magnet programs aim to address, and both **meet strong evidence** standards as defined by IES.

According to WWC's Intervention Report on SMART, the one cited study met evidence standards and found potentially positive effects in alphabetics, fluency, and comprehension.

Citation 1 (Included in Appendix E): Baker, S., Gerstein, R., & Keating, T. (2000). *When less may be more: A 2-year longitudinal evaluation of a volunteer tutoring program requiring minimum training*. Reading Research Quarterly Vol. 34(4), pp. 494-519).

SMART: It is well-established by research that 3rd grade is the pivot point in a child's educational development as students transition from learning to read and begin reading to learn. Fourth grade students, according to the National Assessment of Educational Progress, are expected to "integrate and interpret texts and apply their understanding of the text to draw conclusions and make evaluations." Students reading at proficient levels must not only read fluently, but be capable of complex comprehension and the ability to communicate persuasively.

Developing these competencies after 3rd grade is difficult. According to a 2010 study by the Annie E. Casey Foundation, students who do not read proficiently by 3rd grade are four times more likely to leave school without graduating high school. Consequently, fostering fundamental literacy skills in the Pre-K through 3rd grade years is vital to long-term success, and presents one of the most cost-effective strategies for improving high school graduation rates.

SMART is a WWC evidence-based tutoring program designed to help early readers (Kindergarten through second grade students) gain literacy skills. Students attend 30-minute tutoring session twice a week and receive books to take home for reading with family members and developing independent reading skill. Trained tutors work to help students with literacy

skills using four strategies: 1) tutor reads to student; 2) tutor and student read together; 3) tutors reads a passage and student re-reads the same; and 4) tutor asks student questions during reading.

Citation Outcomes: Using a randomized-control trial, 127 first grade students across 24 classrooms in six Title I schools were randomly assigned to intervention or comparison conditions within classrooms after being matched using a pre-test measure. Baker, Gersten, & Keating (2000) study compared outcomes of students who received the SMART intervention with those of a matched comparison group of students with statistically similar pre-assessment reading abilities, and a group of average-ability students (not matched). Outcomes were measured using standardized reading test data from the *Woodstock Reading Mastery Test* and the *Expressive One Word Picture Vocabulary Test- Revised* (1990) and *Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency*. Results of the study showed that treatment students demonstrated a higher linear growth rate in reading scores (5.94) than the matched comparison groups (5.20) and the average-ability group (5.20). The differences between the SMART treatment group and both other groups were statistically significant: $p=.019$ for matched comparison group and $p=.023$ for average-ability group; and the effect size for the differences was 0.45 pooled standard deviation for both groups. According to the Intervention Report provided on the WWC website, SMART **met** evidence standards with potentially positive effects for alphabets, fluency, and comprehension. These outcomes relate directly to the outcomes in the project logic model (see Image 1 in Project Design) and those that will be examined through the program evaluation with the key objective to increase student outcomes in reading. Reading outcomes of students in the magnet programs will be measured using standardized reading scores from the *Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency*.

Relevance to Proposed Project: SMART will be implemented across the three elementary magnet programs as an evidence-based strategy to improve early literacy skills among students and prepare them to participate in and benefit from thematic instruction related to the magnet themes. In each project elementary school, students in grades 1 and 2 who are identified by their teacher as needing reading intervention will participate in biweekly tutoring with SMART “readers.” The readers will be teaching assistants or community volunteers from businesses, non-profits, and faith-based organizations, and will be trained and supported by the MSAP Instructional Coach. To measure the impact of SMART on student outcomes at the three Cornerstone elementary magnet schools, the program evaluation will examine student standardized test scores in reading on the DIBELS.

Citation 2 (Included in Appendix E): Kemple, J.J., Corrin, W., Nelson, E., Salinger, T., Hermann, S. & Drummond, K. (2008). *The Enhanced Reading Opportunities Study: Early impact and implementation findings*. NCEE report no. 2008-4015. Washington, DC: Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance.

Reading Apprenticeship: Reading Apprenticeship (RA) is a suite of high school programs designed to improve students’ literacy. All RA variations incorporate extensive reading, collaborative sense-making, and teaching of metacognitive skills such as prediction, summarization, graphic organizers, and clarification. Teachers receive extensive professional development and coaching. Implementation at Southeast Raleigh HS will incorporate two key programs from this suite: Reading Apprenticeship Academic Literacy (RAAL), the only RA program targeted to struggling readers, and Reading Apprenticeship Improving Secondary Education (RAISE), a schoolwide program implemented by all core teachers. According to the WWC Intervention Report, RA **meets** strong evidence standards without reservations.

Reading Apprenticeship Academic Literacy (RAAL) is a high school academic course designed to help students achieve higher proficiency in reading and gain strong content knowledge in core subject areas through the reading of increasingly complex texts. The program is designed to help students become engaged, fluent, and competent readers of the variety of texts necessary for them to master in order to be successful in high school and beyond. The course design supports instruction in these areas: 1) student motivation and engagement; 2) reading fluency; 3) vocabulary and academic language development; 4) comprehension; 5) phonics and phonemic awareness (for students still in need of support); and 6) writing. The course includes three discipline-specific units in English Language Arts, history, and science, each of which uses a scaffolded program of reading to build literacy skills and comprehension

Reading Apprenticeship Improving Secondary Education (RAISE) trains teachers to recognize their own subject area expertise and to apprentice students into the ways of reading, writing, thinking, talking, and reasoning in their fields. Through this instruction, students build identities as people who can solve reading problems and tackle complex texts, building their literacy skills, subject area knowledge, and learner capabilities to create success in school and career. RAISE is designed to amplify a student's experience with Reading Apprenticeship through a school-based model. In the research studies done on RAISE, teachers in multiple disciplines integrate Reading Apprenticeship practices into their teaching.

Citation Outcomes: The study used a randomized control trial research design to compare the outcomes of 9th-grade students who participated in RAAL to control students who did not receive the intervention, in the areas of achievement on standardized tests in reading, grade point average, and credit accumulation. The study analyzed the impact of the RAAL program on achievement based on standardized test scores in reading and math. Utilizing a randomized-

control trial, 2000 9th-grade students across 34 high school over 10 school district were randomly assigned to intervention or comparison conditions within classrooms after being matched using a pre-test measure using the *Group Reading Assessment and Diagnostic Examination (GRADE)*.

Findings from the analyses noted below found that participation in RAAL had a positive impact on students' academic performance in core subject areas when compared with the control.

- Higher scores on standardized tests in English language arts (effect size = 0.11 standard deviations SD) and math (effect size = 0.07 SD);
- Higher grade point average in core subject areas (effect size = 0.07 SD); and
- More earned credits needed to graduate from high school (effect size = 0.06 SD).

According to the Intervention Report provided on the WWC website, SMART **met** evidence standards with potentially positive effects on reading comprehension. These outcomes relate directly to the outcomes in the Cornerstone project logic model and to those that will be examined through the program evaluation. The evaluation will examine student outcomes on the North Carolina End-of-Course exams in English II and Math I, as well as *Group Reading Assessment and Diagnostic Examination (GRADE)* assessments administered at the start of 9th-grade to establish a baseline, in the middle of the year, and a final end of grade administration.

Relevance to Proposed Project: RAAL will be implemented as part of the plan to significantly revise the magnet program at Southeast Raleigh HS by integrating evidence-based methods as a means to improve student learning outcomes. In each year of the grant, RAAL will be implemented through a course for 9th grade students who are identified as below-grade in reading at Southeast Raleigh High School. Students will take the daily class for one semester through a block schedule. The school's literacy coach and all RAAL teachers will receive

professional development in summer 2017 to begin implementation of the RAAL model during the 2017–18 school year and continue each year thereafter.

The described study of RAAL assessed the impact of the program on a range of student learning outcomes, including standardized test scores in English language arts and math, course grades, and credit accumulation and showed positive effects in each area. The population in the study included 9th grade students in 34 high schools from 10 school districts across the county. The evaluation of the WCPSS magnet program will examine similar student outcomes referenced in the Cornerstone project logic model using standardized state End-of-Course exams in English and math and *Group Reading Assessment and Diagnostic Evaluation (GRADE)*. These outcomes relate directly to the outcomes in the project logic model (see Image 1 in Project Design) and those that will be examined through the program evaluation with the key objective to increase student outcomes in reading.

Impact Study: The second element of Reading Apprenticeship – Reading Apprenticeship Improving Secondary Education (RAISE), will be the focus of the Cornerstone Impact Evaluation discussed in detail in the Quality of Project Evaluation. In brief, the research done on RAAL noted that in the school years following students’ participation in RAAL continued impact on academic performance began to diminish. Therefore, the implementation model at Southeast Raleigh Magnet HS is to incorporate the RAAL class in Year 1 and then train all teachers on RAISE to begin in Year 2 and offer students continuous and ongoing support in all of their classes to insure continuous student growth and capacity building as learners. RAISE supports the skill development needed to interact with disciplinary text that's associated with the Common Core and the University Connections revised theme for Southeast Raleigh, which will require more advanced reading comprehension skills to absorb advanced disciplinary text.

COMPETITIVE PREFERENCE PRIORITY #3: SELECTION OF STUDENTS

Applicant proposes to select students to attend magnet schools by methods such as lottery, rather than through academic examination.

There are **NO** academic criteria to gain admittance into a magnet school in Wake County. WCPSS is committed to providing innovative and challenging learning for all students and aims to ensure each student experiences an educational setting that enhances the individual student's opportunity for success, regardless of background or ability. All students are eligible for magnet programs and **NO** academic or performance standards, examinations, grade-point averages, or teacher recommendations are used to determine if students are selected for a magnet school. WCPSS encourages an understanding of diversity and embraces the varied thoughts, opinions, experiences, and abilities present in a diverse district, school, and classroom setting.

The WCPSS magnet selection criteria is detailed extensively in Tables 5 for Bugg Elementary, Lincoln Heights Elementary, Millbrook Elementary, and Southeast Raleigh High schools. To summarize that process, also detailed on the WCPSS main website under Student Assignment (<http://wcpss.net/site/Default.aspx?PageID=4501>) and Magnet Programs, WCPSS utilizes a set of predefined selection criteria and a lottery should students be comparable on the selection criteria. The three key factors considered in the lottery are: 1) socioeconomic status of the area where the applying student resides; 2) projected overall socioeconomic status of the school to which that student is assigned for next year; and 3) crowding level of the student's assigned school for next year. For the district's weighted lottery approach, the top priority for selection, after siblings, is the socioeconomic status of the neighborhood in which a student lives followed by the socioeconomic status of the student's next assigned school these priorities have proven successful in reducing minority and socioeconomic group isolation in the district.

COMPETITIVE PREFERENCE PRIORITY #4:**INCREASING RACIAL INTEGRATION AND SOCIOECONOMIC DIVERSITY****Projects to increase racial integration by taking into account socioeconomic diversity***BACKGROUND AND CONTEXT*

In 1982, the Wake Board of Education (BOE) approved a new student assignment plan to substantially expand the magnet program which was established in 1976 and to avoid closing city schools due to declining enrollments. The plan was designed to attract substantial numbers of students voluntarily from overcrowded suburban schools to underutilized city magnet schools through the incentive of a special curriculum. In 1999, the BOE approved the Magnet Schools Guiding Principles as a rededication to the magnet program and a re-commitment to diversity.

The following year, the BOE adopted new student assignment selection guidelines (Policy 6200) that eliminated race but added in **socioeconomic status** (SES). This change addressed the district's continuing commitment to social justice while reducing the isolation of students and to emphasizing the creation of academically rigorous learning environments where all students can reach high levels of academic success. In March 2007, the BOE revisited the guiding principles and again affirmed support for magnet programs by unanimously adopting the following objectives: 1) reduce high concentrations of poverty and support diverse populations; 2) maximize use of school facilities; and 3) expand educational opportunities.

From January 2000 through May 18, 2010, Policy 6200 included socioeconomic status as a factor in identifying "populations of students with higher needs." BOE Policy 6200 outlined that district administrators should strive to maintain enrollments of "less than 40% of students at any school (who) qualify for free or reduced price lunches" when developing and implementing student assignment plans. In June 2012, with a new Board directive, the BOE reviewed Policy

6200 and ultimately revised it in May 2013 to reaffirm that student assignment should aim to minimize a high concentration of students from low-income families at each school.

Wake has most frequently been looked to as an exemplar for other communities striving to maintain diverse schools. The national attention paid to the WCPSS magnet program has increased in the years since the Supreme Court's decisions on *Parents Involved in the Community Schools v. Seattle* and *Meredith v. Jefferson County Board of Education* (June 2007), which encouraged districts to look at socioeconomic status as a means of keeping schools diverse. A July 2008 *New York Times* article pointed to WCPSS' "striking improvements in the test scores of black and low-income students" as a result of the district's commitment to diversity and referred to the socioeconomic-based assignment plans as "The Next Kind of Integration."

In 2009, Richard Kahlenberg, noted scholar oft referred to as the "intellectual father of the economic integration movement," told the audience at a conference sponsored by the Center for Civil Rights of the UNC-Chapel Hill School of Law that "Wake County schools are among the most integrated socioeconomically and racially in the nation, and certainly in North Carolina." Since 2009, Kahlenberg has studied extensively the impact of socioeconomic diversity, including the impact in Wake County, and found strong correlations to student achievement (see Kahlenberg letter of support in Appendix C). That same year, in stark contrast to progress made in Wake County, Gary Orfield with the UCLA Civil Rights Project reported "continued declines in the proportion of white students, increases in minority growth, particularly of Latino and Asian students, and deepening segregation of both black and Latinos by race and poverty."

Most notably, Gerald Grant of Syracuse University published *Hope and Despair in the American City: Why There Are No Bad Schools in Raleigh* (2008), in which he compares the parallel histories of Syracuse and Raleigh. Grant found that WCPSS "reduced the gap between

rich and poor, black and white, more than any other large urban educational system in America” (p. 92). This was due, in large part, to the success of magnets, which draw students from crowded suburban schools to older, under-enrolled city schools with the potential for minority and/or socioeconomic group isolation. By relying upon forward-thinking policy, community support, and vibrant magnets to maintain diversity, WCPSS has largely avoided these trends.

CURRENT USE OF SES AS A DESEGREGATION STRATEGY

Currently, and for the proposed 2017-2022 magnet initiative, WCPSS magnet programs are designed to address the following Wake goals: 1) reduce high concentrations of poverty in schools; 2) promote diverse school populations; 3) maximize use of school facilities; and 4) provide innovative educational opportunities. These guiding principles were BOE revised and unanimously approved by the BOE in 2015. To achieve these goals, WCPSS uses a weighted lottery that includes selection priorities for: 1) socioeconomic status of the area where the applying student resides; 2) projected overall socioeconomic status of the student’s assigned school for the next year; and 3) crowding level of the student’s assigned school for next year.

The WCPSS Magnet Application Period occurs in January each year. The WCPSS Office of Student Assignment applies the magnet selection priorities after the application period ends. Parents and/or students may apply for up to five magnets via the electronic application, ranking from highest to lowest preference. Applicant parents are notified of results by mid-February.

All WCPSS magnet schools, including the four MSAP schools, are located in high poverty areas. For the weighted lottery, the top priority for selection, after siblings, is the socioeconomic status of the neighborhood in which a student lives. The detailed magnet selection priorities can be found in the Desegregation section which follows, and was previously described in CPP3 (Selection of Students) and are also addressed school specific in Table 5.

A. DESEGREGATION

As evidenced in the Attachments, WCPSS has amended its voluntary desegregation plan and submitted it with this MSAP application. In amending the WCPSS desegregation plan, district leadership consulted the following: 1) November 13, 2012 U.S. Department of Education official adoption of the March 2010 interim final rule removing the provision that required districts to use binary racial classifications; 2) joint guidance issued by the U.S. Department of Education's Office for Civil Rights and Department of Justice's Civil Rights Division in December 2011 and 2013; and 3) Supreme Court decisions in *Parents Involved in the Community Schools v. Seattle* and *Meredith v. Jefferson County Board of Education* in June 2007. The current WCPSS BOE approved a Resolution Expressing Board Commitment to Voluntary Desegregation on March 21, 2017. In four additional, separate actions the Board approved district staff to submit an application and approved the four schools to be included as well as the themes for these project schools (see the signed Board Resolution uploaded with the Voluntary Desegregation Plan).

A(1) Effectiveness of plan to recruit from social, economic, ethnic, and racial backgrounds

In addition to strong resolutions and policies, WCPSS utilizes a number of strategies and available resources to promote voluntary desegregation. WCPSS does not currently use race of students in magnet assignment determinations. WCPSS experience has demonstrated that race-neutral strategies have been largely successful in addressing the harmful effects of MGI. Magnets are working in Wake County to prevent minority and socioeconomic group isolation by placing magnets in areas of the district that are high minority and high poverty. Further, magnet selection criteria prioritize socioeconomic status of sending schools and students coming from overcrowded schools. While prioritizing these factors, WCPSS is also mindful to ensure that the sending school has less economically disadvantaged students so that taking magnet students from

the sending school does not adversely impact SES percentages at that school. In addition, these strategies capitalize upon the educational benefits of giving students the opportunities to attend schools with students of different backgrounds and achievement levels. There are **NO** academic criteria to gain admittance into a magnet school in Wake County.

STRATEGIC PLACEMENT OF SCHOOLS

All WCPSS magnet schools are situated in areas of the district where there are high concentrations of students from low-income families and students of color. Therefore, by targeting students from the growing suburbs that have lower percentages of economically disadvantaged students and higher percentages of White or Asian, Cornerstone 2017 schools will become more diverse socioeconomically and racially. The selection of magnet schools in this proposal is directly related to the potential of each to meet MSAP goals and district objectives.

All non-magnet schools were reviewed as potential candidates for the MSAP project. The schools were aligned with the MSAP purposes to determine which schools have minority student populations exceeding the district average, which schools are significantly under-enrolled, which schools will reduce minority group isolation without negatively impacting surrounding schools, and academic achievement data. In addition the non-magnet schools were reviewed for alignment with WCPSS's Magnet Principles of reducing high concentrations of poverty, promoting diverse populations, maximizing use of school facilities, and providing innovative, expanded educational opportunities. Lincoln Heights was identified through this BOE review. The school has a draw area of feeder schools that are overcrowded and has reasonable patterns of that would make it relatively convenient for families to travel to and from school. Many of the feeder schools to Lincoln Heights have student enrollments that are not socioeconomically or

racially isolated, and therefore will not be adversely affected by the loss of students choosing to attend the magnet. Further, the school has space to accept students without concern of crowding.

The three schools proposed with significantly revised themes (Bugg Elementary, Millbrook Elementary, and Southeast Raleigh High) were also identified through a BOE review of magnet schools that were not meeting their school diversification goals. In addition to selecting schools for the grant, the BOE was involved, along with school staff and the community, in selecting revised themes that would be an attractive draw for potential magnet families. By re-theming and re-branding at these three magnet schools, the MGI at each is expected to be reduced.

A district MSAP planning team conducted an in-depth analysis of the schools’ surrounding communities, their unique student populations, and respective needs in order to reduce or prevent minority group isolation. The results of this analysis (see Table 2 below) underscore the rationale for their selection, as described in the paragraphs that follow the table and lay the foundation for the desegregation strategies described in the Marketing and Targeted Recruitment section.

Table 2: District Subgroup Averages

Year	American	African	Asian	Hispanic	Native	Multiple	White	FRL
2016-17	0.3%	23.5%	8.2%	17.4%	0.1%	3.7%	46.9%	31.8%
2015-16	0.3%	23.4%	7.6%	17.3%	0.1%	3.7%	47.0%	34.2%
2014-15	0.3%	24.2%	7.1%	16.4%	0.1%	3.8%	48.1%	33.8%

Bugg Magnet Elementary School

With a decrease in magnet applications over the past five years, Bugg Elementary continues to be one of the most racially-isolated schools in the district. Currently the school is 4% white, 13% Hispanic, and 79% African-American, and the Free and/or Reduced Lunch (FRL) rate is twice that of the district (68% versus 34%). Further, in 2015-16, overall proficiency rates were 37 percentage points lower than district rates for elementary schools. Bugg is losing the diversity that it needs to promote growth, close the racial achievement gap, and **reduce** the percentage of African-American students from 79.1% to 64.1% by the end of the grant. Significantly revising the current theme from Creative Arts and Sciences to Center for Design and Computer Sciences will help the school reduce minority and socioeconomic group isolation (see Table 6).

Lincoln Heights Magnet Elementary School

Lincoln Heights was built in 1965 in a predominantly African-American community. The community that surrounds the school maintains a great deal of pride in and support for the school and has been instrumental in “saving” the school when the district considered tearing down the original building. Lincoln Heights was initially designated as a magnet during the Schools of Choice program in 1982. The BOE “demagnetized” Lincoln Heights in 2008. A new school building opened the following year and a number of white families left for the new school. Lincoln Heights also lost higher socioeconomic families over the last decade to nearby schools.

In an effort to **reduce** a growing trend, Lincoln Heights Elementary School was named a new magnet school in November 2016. Considering a capacity of slightly over 700 students, the school is currently under-enrolled with a population of 457 students, with overall enrollment dropping over the last four years. Currently the school is 31% white, 30% Hispanic, and 35% African-American, and the FRL rate is 71% compared to the district rate of 34%. Additionally,

student achievement has also seen a decline in proficiency rates and the number of subgroups meeting or exceeding growth standards. The school is currently undergoing a major renovation to be completed by the 2018-19 school year. The new renovation, coupled with a new magnet theme and significant upgrades in curriculum, will help attract new students, provide enhanced instruction to existing students, and **reduce** minority-group isolation of African-American students from 34.6% to 24.6% and Hispanic/Latino students from 30.3% to 20.3% by end of the 2021-22 school year. Introducing the new theme of Environmental Connections will support school efforts to reduce minority and socioeconomic group isolation (see Table 6).

Millbrook Magnet Elementary School

The most recent figures indicate that 70% of Millbrook students receive free or reduced-price lunch compared to 34% for the WCPSS as a whole. Base students residing near the school are comprised mainly of African-American and Hispanic families. The neighborhoods bordering the school range from low-income apartments to older neighborhoods that were once fairly affluent but no longer. This demographic shift has caused the school to continue to see an increase in its minority enrollment. Academic performance also shows signs of distress, with proficiency in reading 20 percentage points below the district rate for elementary schools and math proficiency rates 27 percentage points lower than the district rate for other elementary schools. With the introduction of a significantly revised theme, Millbrook will focus new efforts to **reduce** the current percentage of African American students from 48.6% to 38.6% and **reduce** minority-group isolation of Hispanic students from 32.1% to 22.1% by the end of the grant term. Significantly revising the current International Baccalaureate (IB) Primary Years Programme to Environmental Connections will support school efforts to reduce minority and socioeconomic group isolation (see Table 6).

Southeast Raleigh Magnet High School

Southeast Raleigh Magnet High (SRMHS) is experiencing a significant decline in magnet applications and a steady increase in FRL percentages. As recently as six years ago, SRMHS had 50% magnet enrollment and over 2,000 students. Today, the school is under-enrolled with just over 1,500 students, only 30% of whom are magnet. The number of magnet students has declined by 360 since 2011-12 with a total of 397 magnet students in 2016-17 as compared to 757 in 2011-12. SRMHS has experienced a steady increase in FRL percentage over the past five years with 50% FRL in 2011-12 and 57% in 2016-17 (compared to the district average of 34%); the school has had the fastest rate of FRL increases in the last five years compared to other high schools in the district due to theme branding issues and several new high schools opening in the district. The concentration of low-income and minority students has resulted in greater isolation compared to the district overall. Southeast's student population is: 1% Asian, 67% African-American, 21% Hispanic/Latino, 8% White, and 3% other races. Compared to other high schools in the district, proficiency rates in Biology and English are 19 and 29 percentage points lower, respectively. Strategies for Southeast Raleigh will focus efforts towards **reducing** minority group isolation of African-American students from 67.2% to 52.2% by the end of the 2012-22 school year. Significantly revising the current magnet theme Leadership and Technology to University Connections: School of Design, Arts, and Engineering will support school efforts to reduce minority and socioeconomic group isolation (see Table 6).

The tables below include the defined target goals for each of the four project schools (Table 3) and the FRL goals for the four project schools (Table 4).

Table 3: Enrollment Goals

School (Grades)	2016-17 Enrollment	Cornerstone	
Bugg ES (K-5)	Black: 79.1%	Reduce MGI	Black: 64.1%
Lincoln Heights ES (K-5)	Black: 34.6%	Reduce MGI	Black: 24.6%
	Hispanic: 30.3%	Reduce MGI	Hispanic: 20.3%
Millbrook ES (K-5)	Black: 48.6%	Reduce MGI	Black: 38.6%
	Hispanic: 32.1%	Reduce MGI	Hispanic: 22.1%
Southeast Raleigh HS (9-12)	Black: 67.2%	Reduce MGI	Black: 52.2%

Table 4: FRL School Goals

	2016-17 Percentages	2021-22 GOALS
Bugg ES (K-5)	72.7%	62.7%
Lincoln Heights ES (K-5)	71.1%	61.1%
Millbrook ES (K-5)	71.9%	61.9%
Southeast Raleigh HS (9-12)	65.6%	55.6%

MARKETING AND TARGETED RECRUITMENT

In order to achieve Cornerstone’s desegregation goals, marketing and recruitment will focus on feeder schools that have the most potential to assist in this effort. Schools that have lower percentages of African-American and Hispanic students compared to the district as a whole (and conversely, higher-than-average White and Asian student populations) make ideal candidates for recruitment efforts. These feeder schools also have lower-than-average FRL rates and in some cases are over-crowded. Therefore, the movement of students from these schools to the receiving

Cornerstone schools will not adversely impact MGI or FRL at the sending schools. In the feeder school tables (see Table 4 uploaded separately with the application and the district's Voluntary Desegregation Plan) neutral compositional changes in the race and ethnicity of student populations over the five years of the project are projected at these feeder schools. In addition, as described above and summarized in Table 5 (CPP3), the magnet selection process gives priority points to applicants from higher socioeconomic and over-crowded schools, which typically fit the demographic profile sought for the four schools. The combination of targeted recruitment and weighted selection increases the likelihood that Cornerstone can accomplish desegregation goals.

Based on a rich experience in implementing magnet programs over the past 40 years, the district has learned the importance of implementing extensive and creative promotion and recruitment strategies, by a highly experienced recruitment team, in order to provide students equitable access to its magnet programs and to attract diverse enrollments to these schools. The district recruitment staff in the Magnet and Curriculum Enhancement (M&CE) Program Office consist of a magnet recruiter and magnet marketing director. The individuals in these two positions each have over 18 years of experience recruiting and marketing for magnet schools in this award-winning district. There will also be future magnet coordinators, half MSAP-funded and half district-funded to focus on recruiting for their schools. The **district-level strategies** they will use to recruit students to meet MSAP goals and Cornerstone objectives include:

- Maintain attractive and informative websites for each individual MSAP project school.
- Maintain attractive and informative websites for Magnet Programs at the central office level.
- Maintain the M&CE Programs Office to serve as an ongoing resource for parents residing within the school district and for new families moving into the system. This office provides

parents with information on each of the magnet schools' programs in the district and staff there assist parents in understanding the application, selection and notification process.

- Host an annual Magnet & Early College Schools Fair, which provides an opportunity for all magnet schools to showcase programs to the thousands of families who attend each year.
- Schedule annual Magnet Mini-Fairs, hosted in multiple target market locations across the district, which provide rising kindergarten families an opportunity to explore magnet options.
- Conduct information sessions about magnet schools in targeted areas of the district, particularly in locations with high growth and low FRL.
- Work with a Public Relations (PR) firm and/or PR specialist to create an advertising campaign to reach the target market, and create new messaging, branding, and logos to reflect the new and significantly revised magnet themes.
- Submit articles about the MSAP schools to feature in the "Explore Wake Schools" Magazine
- Create an interactive tool for parents to determine the best magnet program match for their child's interests and needs. Parents would be able to visit the M&CE website and enter their child's interest then receive a list of magnet schools that are a match for those interests. This tool will be developed in coordination with experts from a local marketing firm.
- Create fliers and brochures about magnet schools and distribute throughout the district, including on the district's website; in all of its schools; and at daycares, preschools, libraries, churches, recreation centers, youth sporting events, and places where families gather.
- Publicize the magnet schools' events through paid advertising in local media, social media and through email blasts and direct mailings.
- Connect to local influencers including the faith community, daycare centers, and seeking positive press on local news stations to highlight the MSAP project schools.

- Utilize social media, such as Twitter, Facebook, and YouTube to showcase project schools.

The district level M&CE Programs Director of Marketing and Senior Administrator of Recruitment, along with the grant-funded MSAP Cornerstone Coordinator, will collaborate with the grant-funded school MSAP coordinators to form a MSAP Recruitment Team. This team will work closely with the district Communications Department every year to develop a marketing plan for all recruitment events for MSAP schools. The team will work with the district's Center for International Enrollment and Director of Translation & Interpretation Services to translate materials into languages that are spoken in the district to ensure equal access for all families.

The MSAP Recruitment Team will coordinate the following activities at the project schools to recruit students from different social, economic, ethnic, and racial backgrounds:

- Form a recruitment team at each project school consisting of the school-level MSAP grant coordinator, parents, staff, and school administrators. The recruitment team will coordinate recruitment activities and disseminate magnet school information to target applicants in the district. This team will also work closely with the Parent-Teacher Association (PTA) to actively recruit families to the project schools.
- Review and act upon the annual Magnet Applicant Survey to determine the factors, experiences, and events that made the most impact on applicants' decisions to apply to a magnet school. All parents of students who applied to a magnet will receive the survey.
- Guide school recruitment teams through the process to develop an annual marketing/recruitment plan aligned with the purposes of the MSAP grant. Recruitment plans will include timelines, activities and events with descriptions, lists of target neighborhoods and feeder schools, and assignments to team members.

- Conduct *Magnet Recruitment Training* for recruitment teams, staff and parents at project schools. Training will help school teams develop a clear, concise, and compelling description of the magnet theme that is delivered in a consistent way. Training will also include answers to frequently asked questions, and the application process.
- Connect project schools with a local PR firm and/or PR specialist to assist in school messaging, branding, logos, and guidance on reaching the target audience during recruitment.
- Identify parent “influencers” at each project school, that have strong ties to community organizations, churches, child care centers, etc. in the target recruitment locations in the district. Involve these parents in disseminating marketing materials about the project schools.
- Assist school level recruitment teams in organizing and hosting open houses, tours, and information in the magnet schools at different times, such as mornings, afternoons, evenings, or over the lunch hour to accommodate schedules of both working and nonworking parents.
- Collaborate with WCPSS non-magnet/base schools in target market areas to advertise project school events to learn about magnet programs.
- Seek opportunities for positive press on local news stations, radio stations, and newspapers to highlight events and activities occurring at project schools.
- Train school Recruitment Teams on effective use of social media outlets including Twitter, Facebook and YouTube.
- Host community activities and events (e.g., North Carolina State University Engineering Summer Camp at Southeast Raleigh HS) that align to and reflect the theme of the school so they are seen as leaders in this realm.
- Work with Wake County businesses to share magnet information with employees.

- Connect Southeast Raleigh HS with K-8 charter schools and WCPSS middle schools in target areas of the district.

WCPSS monitors its marketing and recruitment using tools like Google analytics and online surveys. The MC&E Office analyzes magnet applications each year for the minority compositions, the areas of the district applicants are coming from, and the number of applicants to each school to determine if programs are meeting the goal to reduce minority and socioeconomic isolation. The results help inform marketing and recruitment for each project school. The district pays special attention to efforts throughout the application period to determine the success of its strategies in attracting students from target markets to each magnet school, and implements additional strategies during the application period if data suggest that current strategies are not attracting applicants to a school or schools. At the end of each recruiting season, all applicants to magnet schools are asked to complete an anonymous online survey to provide feedback on effective or ineffective marketing strategies, allowing staff to further explore and respond to how parents choose a school for their children. The feedback from this survey is shared with all magnet schools to inform recruitment efforts the next year.

Marketing and recruitment activities occur during the pre-award period and every year of MSAP funding. Existing Magnet staff will work closely with the MSAP schools to individualize and customize marketing plans and recruitment activities. These efforts will be evaluated to determine where changes may be needed to reach project goals. The typical timeline for outreach and recruitment activities to support the District's magnet programs, along with responsible parties and timeframes, is as follows:

- Assemble and maintain a recruitment team at each school to organize school specific marketing efforts (Grant Coordinator, Principals, School Magnet Coordinators): YR1-5.

- Develop, deploy, and monitor a recruitment plan (Project Director, Director of Magnet Marketing and Recruitment, Senior Administrator Magnet Recruitment & Grants, Magnet School Coordinators): Sep-Feb YR1-5.
- Work with WCPSS Communications to develop media campaign and materials for each school (Grant Coordinator, Director of Magnet Marketing and Recruitment, School Magnet Coordinators): YR1 and ongoing for refinements as needed.
- Work with each project school's PTA and other support groups to identify areas of strength, refresh Wake Cornerstone school websites, and determine social media goals (Grant Coordinator, Principals, School Magnet Coordinators, M&CE staff): YR1-5.
- Create marketing opportunities using the school's website and other social media (Grant Coordinator, Principals, School Magnet Coordinators, M&CE staff): YR1-5.
- Conduct a media blitz through varied media outlets (Grant Coordinator, Director of Magnet Marketing and Recruitment, M&CE staff): YR1-5.

All magnet schools are served by the marketing and recruitment activities hosted by the M&CE Office. The two M&CE staff members for marketing and recruitment will devote 25-30% of their time in Year 1 and 20-25% of their time in Years 2 - 5 to support the Wake Cornerstone schools. Working with the WCPSS Office of Communications, they will convey to the public the innovative educational opportunities available at each school and be responsible for building on existing marketing and recruitment strategies, as well as implementing new strategies that will reduce minority group isolation.

M&CE staff members work closely with the Office of Student Assignment—and beginning in 2017 with the External Contract Evaluator—to review prior application data and identify successful marketing strategies to continue as well as those that should be discontinued or

revamped. After the data and strategies are analyzed, a recruitment timeline is established. During the summer, staff members work with WCPSS Office of Communications' graphic designers to update school marketing materials. Marketing staff and graphic designers collaborate to design magnet marketing materials that align with the district brand. The graphic designers produce critical communications for online and print media to be used for on-air and online advertising and various print media outlets. Visual media developed with a videographer to create a marketing video as well as video spots for paid on-air advertising or free PSAs.

Other key communications points with prospective students and families are conducted in person. M&CE staff members plan and host events for all WCPSS magnet schools, including a Magnet & Early College Schools Fair each November, monthly information sessions for parents of elementary and middle school students, and evening information and open house sessions. M&CE staff present to school PTAs, parent groups, child care centers/preschools, as well as attend community events, and via social media. Staff compile packets of fliers and brochures for direct mailings to child care centers and preschools. Staff members also directly contact parent groups and child care directors to offer to conduct presentations for families.

These standard marketing, recruitment, and communication activities will be expanded to include elements specific to the Cornerstone project schools. The marketing and recruitment personnel will also work closely with WCPSS Communications as well as an external PR firm and/or PR specialist to develop a strategic marketing campaign for each grant school based upon targeted recruitment areas already identified in collaboration with the Office of Student Assignment. MSAP staff will work with school staff and families to assess their communication needs and capacity for marketing and recruiting. For example, marketing personnel will form a recruitment team and host focus groups; participate in a visioning session at each school; and

work with a marketing/PR firm to complete a communication audit for each school. The audit will also include a walkthrough of each Cornerstone school to identify areas to visibly promote the theme and improve curb appeal, and a review of social media communications.

WCPSS currently utilizes a number of social media outlets including Twitter, Facebook, Periscope, and YouTube, that will assist grant schools. Recruiters will work with the district's WCPSS Communications Office to create stock photography and video footage available for use by all grant schools. Magnet marketing staff will conduct recruitment training workshops and webinars for MSAP schools, organize direct mailings/e-blasts for Cornerstone schools, train students and parents to become ambassadors at school or community events, assist/attend information sessions, and train Magnet Coordinators on leveraging social media activities to drive traffic to each school's website and to develop/utilize key branding messages. WCPSS will monitor communications, marketing, and recruitment efforts throughout each magnet application period to determine the success of strategies in connecting with families and attracting target students. Staff will assist grant schools in implementing additional tactics prior to, during, and after the application period to enhance their marketing and recruitment strategies.

STUDENT SELECTION CRITERIA

The selection of students for magnet schools is governed by the WCPSS Student Assignment Policy, and by the district's elementary, middle, and high school magnet school selection procedures. WCPSS utilizes a set of predefined selection criteria and a lottery should students be comparable on the selection criteria. The selection process unique to WCPSS magnet schools is another example of how the district is a pioneer in magnet schools. Most of WCPSS's magnet schools are in high poverty areas of the district. For the weighted lottery, the top priority for selection, after siblings, is the socioeconomic status of the neighborhood (catchment area) in

which a student lives. This is followed by the socioeconomic status of the student's next assigned school and finally the crowding of the student's next assigned school. All of these priorities are factored into the selection process in order to reduce minority and socioeconomic group isolation in the district. The selection process can be found easily on the WCPSS website

<http://wcpss.net/site/Default.aspx?PageID=4501> and is detailed in CPP3 Table 5 for schools.

SCHOOL CAPACITY

Due to the unrelenting and uneven growth in student population over the past 10-15 years and for the foreseeable future, and the consequent school crowding, it is necessary for the district to consider school capacity when assigning students to magnet schools. In the 2016-17 school year, 159,549 students were enrolled in WCPSS. Recent projections indicate that another 9,000 students are expected in WCPSS by the year 2020. A 2013 bond was passed to support building additional schools to accommodate exponential growth, but more support is needed. Despite current crowding in the district overall, the four MSAP project schools possess vacant seats to attract students to reduce MGI. Making the programs more attractive will help address the growth. This capacity/space was a criterion used to identify schools for inclusion in the grant

FACILITIES DESIGNED TO SUPPORT MAGNET PROGRAMS

WCPSS has allocated resources in its long-range facilities plan to ensure the viability and attractiveness of its magnet school facilities and to provide available seats at the magnet schools. Most recent renovations include: 1) construction of 12 new classrooms, kitchen upgrades and expansion of the dining area, and driveway and parking lot upgrades for Bugg; 2) Lincoln Heights recently completed the first phase of renovation which focused on upgrading all classroom spaces with the renovation slated to be completed in 2018; 3) Millbrook will have a complete HVAC controls upgrade in 2017; and 4) Southeast Raleigh HS, which first opened in

1997 and is a relatively newer school, is expected to have repairs to the school track in 2017.

Each of the four facilities has the ability to catalyze rich and rigorous implementation of thematic programming to mirror their recent and future updates.

A(2) Interaction among students of social, economic, ethnic, and racial backgrounds

The district's commitment to diversity and equity is represented in the extensive magnet school program that it operates, with 43 magnet schools. The WCPSS student population is culturally, geographically, economically, racially, ethnically, and academically diverse. As a result, schools and classrooms are diverse. This diversity is a crucial resource for teaching students to live and thrive within a global community; as well as essential to reduce bias, increase empathy, and promote the ability to communicate cross-culturally.

Each of the four magnet schools in this proposal was chosen on the basis of its strength to attract students from diverse backgrounds with a broad range of talents, interests, and abilities. The magnet themes at each school are designed as whole-school programs with curricula and other opportunities for optimizing interaction among students from diverse backgrounds. With MSAP funds, teaching staff at all four project schools will receive extensive training on the Critical Friends Group (CFG) technique. This training will help build staff capacity in collaborative learning and structured interactions (protocols). CFG training will help staff create a learning environment of trust, how to give and receive feedback most effectively, and teach strategies that help students and teachers create a culture of excellence for all.

Collective results of studies by Vescio and colleagues (2008) focused on student achievement as a result of effective teacher collaboration. This research noted student gains occur when collaboration is structured, sustained, and supported. CFG provides the structures and protocols

then a contracted facilitator will provide high-quality professional development to build more equitable learning environments in all classrooms across the four magnets.

The new vision for Bugg Center for Design and Computer Science will foster a culture that encourages students from different backgrounds to collaborate while thinking through the a design lens and immersion in a computer science mindset. Students will engage in learning that develops higher-order thinking skills and provides a foundational skillset designed to meet the technological challenges of the future. All students will receive in-depth, hands-on instruction in the design process and computer science concepts and skills. With MSAP funding, each Bugg will students in an environment that fosters positive interactions between all students.

Lincoln Heights and Millbrook will provide students with authentic connections to the natural world, enhancing attention, improving behavior, and increasing engagement and enthusiasm for school. The new Environmental Connections theme will leverage students' innate interests in the natural world and build their scientific skill set of curiosity, creativity, accuracy of observation, questioning (skepticism), and accurate recording and data collection/analysis.

This theme will facilitate the transformation of the two schools into environments that foster a culture of positive interactions between students, students and teachers, and the whole school/parent/community, through intentional and unstructured interactions with the natural environment. The hands-on nature of the theme will promote interaction and collaboration amongst students and without external partners with expertise germane to the theme.

Southeast Raleigh High will be the district's only University Connections: School of Design, Arts, and Engineering program in the district. The new magnet theme will establish theme-related community partnerships with local colleges, universities, and industry, thereby enhancing existing assets and offering new, innovative experiences with higher education and industry

partners from the fields represented in the four college and career pathways: 1) Design; 2) Arts; 3) Engineering, Math, and Sciences; and 4) Humanities and Social Science.. Students from all backgrounds will have equitable access to the experiences provided by the four college and career pathways. For example, SRMHS students interested in Design and the Arts may join Theatre students from Meredith College to learn and share techniques for mobile set design and Black Box theatre community productions. Students can choose to partner with the Dewberry Engineering firm to shadow field experts on building projects or collaborate with WRAL Broadcasting employees to learn and practice the art and skill of making, creating, and capturing story. Students can choose to partner with Smith Sinnett Architecture firm to shadow field experts on design projects or collaborate with students from the NCSU College of Design and College of Engineering for mentoring on projects they already have in process. These new and innovative experiences will promote positive interactions amongst high school students, college students, and business partners to encourage student confidence and risk-taking capacity.

A(3) Equal access and treatment for project participants traditionally underrepresented

WCPSS has in place existing measures to ensure equal access and treatment. These measures are outlined more fully in the required GEPA submission. Relatedly, the district is proactive in identifying areas where unintentional challenges to participation may exist and seeks to address those challenges before they become barriers and contribute to the societal context that has resulted in some groups underrepresentation, including but not limited to women, minorities, or individuals with disabilities in science fields (e.g., computer coding, environmental science, engineering, and math) and the possibility of narrowed participation by non-native English speakers due to language limitations. In response to these concerns, the district has implemented the following measures to address possible barriers.

- **Gender:** Students are encouraged to enroll in programs, courses, and activities based upon their interests and needs rather than their gender. Specific measures taken include actively recruiting girls to all Cornerstone schools, including mathematics, science, technology, and engineering classes, electives, courses, and clubs (e.g., Girls Who Code at Bugg). MSAP school staff will market activities, programs, or electives using female engineers and scientists as models and course/program descriptions that attract both girls and boys. MSAP schools will also partner with local businesses to identify professional female mentors, and connect with female students in Meredith College's Center for Women in Science & Mathematics and NC State University WISE (Women in Science and Engineering). In addition, boys will be encouraged to excel in the arts, social science, and design at Southeast Raleigh High. Artists-in-residences will provide male role models and examples of boys aspiring to majors or careers in the visual and performing arts.
- **Race:** Students from groups often underrepresented (e.g., African-American and Hispanic) in areas such computer science, and engineering will have the opportunity to participate in these programs whether the Cornerstone project school is their assigned school or they choose to apply. Wake County is home to two historically black colleges and universities (HBCUs), Shaw University and Saint Augustine's University. Collaboration with both will expose and encourage students traditionally underrepresented in STEM fields to consider that pathway.
- **National Origin and English Learners:** With more than 125 unique languages spoken in Wake County, WCPSS opened the Center for International Enrollment (CIE) in 2009 to assist non-native English Speaking families. In addition, WCPSS has a Director of Language Assistance to oversee the development, implementation, and evaluation of a Language Assistance Plan that ensures language does not present a barrier for participation in any

district program. Translation and interpretation services are available to school personnel who work directly with families and families who need language assistance services to understand school documents and/or processes. Cornerstone schools may request these translation and interpretation services to foster better communication between school and home. A Language Assistance Statement, in the district's top seven languages, is used on all system-wide documents and is prominently displayed on the district's website and all school websites. That statement includes information about a dedicated Language Assistance Phone Line that parents can call to request, at no cost, translation and interpretation services. Also, as curriculum and instruction are becoming more technology driven, attention to the needs of English Learners is critical. The WCPSS English as a Second Language (ESL) team is represented on the district-level team that makes determinations about standard technologies. English learners will have access to the same technology as other students. Technology in some instances helps increase access because of language features available with devices.

- **Disability:** WCPSS adheres strictly to the provisions outlined in the American with Disabilities Act (ADA). The Cornerstone project initiatives at all four MSAP-funded schools will also adhere to the provisions and meet all ADA requirements for physical environments. All SMAP Cornerstone schools will provide special education services based on a child's needs outlined in the Individual Education Plan (IEP). Upon notification of specific needs to address a disability, the district provides appropriate supports and accommodations for students. For example, Environmental Connections at Lincoln Heights and Millbrook will be designed so that active engagement outside the school building is not limited by mobility, i.e., a student who utilizes a wheelchair or walker can fully access all activities. WCPSS employs a number of technologies to provide accommodations and supports to students with

disabilities. The numbers and levels of support are determined by a student's IEP. Examples of supports for visually impaired students to access the numerous technologies in the MSAP project schools include software programs such as *talking typer* and *zoomtext*, as well as *braille writers, magnifiers, and monoculars*. The district Audiology Department of Special Education Services provides support and technology to all hearing impaired students.

Provision of services includes integration of amplification technology into existing classroom technology such as specialized headphones, listening centers, and speaker systems.

WCPSS is committed to providing quality educational opportunities for all students and seeks to provide each student with a learning environment that enhances the individual student's opportunity for success, regardless of the student's background or abilities. It is important to underscore that all students are eligible for magnet programs and no academic or performance standards, academic examinations, grade-point averages, or teacher recommendations are used in determining whether students are admitted. WCPSS strives to provide a learning environment that not only encourages an understanding of diversity but also embraces the vast array of thought, opinion, and experience that results in a diverse learning environment.

A(4) Effectiveness of strategies for the elimination, reduction, or prevention of MGI

UNIQUE INSTRUCTIONAL PROGRAMS

Attractive themes will bring "first of their kind" magnets to WCPSS. The creation of Cornerstone school themes is based on parent survey responses and analysis of parent and community interest from focus groups, and "think tank" brainstorming sessions with business, community, school, and district leaders. The innovative instructional programs will create attractive themes that draw families for an engaging and enriching learning experience. With the support of MSAP funding, new curriculum, specialized theme activities, collaborative learning

spaces, and high-quality teacher training will bring exciting opportunities that change the perception and branding of each school. As a result, WCPSS will create three model magnet themes (Design and Computer Sciences, Environmental Connections, and University Connections: School of Design, Arts, and Engineering) across the four project schools, not only for the district, but also for the state and nation.

Each Cornerstone school is located in an area of Wake County that will nurture partnerships with local businesses and organizations that support the strength of the magnet theme. For example, Southeast Raleigh's close proximity to downtown Raleigh and five out of the six postsecondary institutions in Wake County provides convenient and numerous opportunities to generate partnerships for university connections. Bugg Elementary, also situated in downtown Raleigh, is located in close proximity to national IT firms, like Red Hat, with headquarters nearby. Lincoln Heights and Millbrook ES are conveniently located in the State capital and have ready access to NC's largest land grant university, NC State University, and state agencies like the NC Department of Environmental Quality.

TRANSPORTATION FOR MAGNET SCHOOLS

The effectiveness of the plan to recruit students to the Cornerstone schools is enhanced by the transportation WCPSS provides for students who attend its magnet schools. WCPSS' experience with magnet programs has led staff to believe that without transportation, there is no true choice. If convenient transportation isn't provided then families won't perceive magnet schools as a viable option. Once students are selected for a magnet school, WCPSS Transportation designs its routes around those magnet selections. It costs the district more in transportation to have magnet schools because the number of transportation routes increase. However, the district reconciles the increased costs with the larger goal of integrated schools.

EVALUATION OF MAGNET PROGRAMS

Annually, WCPSS reviews the effectiveness of the district's magnet programs in achieving magnet program objectives and adjusts when data reveal the recruitment plans are not proving effective. The annual M&CE evaluation considers the following areas noted below.

- Data on the pool of applicants for each magnet school for each year, disaggregated by grade level, race and ethnicity, gender, attendance zone socioeconomic status, achievement level, special education status, English as a Second Language (ESL) status, and area of the county in which applicants reside;
- Data on student achievement at each magnet school, including measures of proficiency and growth disaggregated by race, ethnicity, attendance zone socioeconomic status, etc....
- Data on students enrolled at each magnet school for the current year, disaggregated by grade level, race, ethnicity, socioeconomic status, achievement level, special education status, ESL status, area of the county in which applicants reside, and sending or feeder schools;
- Data on school capacity and utilization;
- Data from a survey sent to all magnet applicants each year asking for feedback on the recruitment process and ideas about future magnet themes; and

The school district is well positioned to attract a diverse student population to Cornerstone schools and improve academic achievement for all students. In the upcoming section on Project Design, information specific to each school will be presented that details how the one new magnet program and three revised themes will strengthen programs at each school and contribute to the overall strength of the district's magnet programs generally.

B. QUALITY OF PROJECT DESIGN

B(1): Extent to which each magnet school will improve student academic achievement.

The four proposed magnet schools will benefit from 1) an array of instructional initiatives that are underway in the district, 2) cross-school initiatives designed specifically to support this cohort of magnet schools, and 3) school-specific designs customized to the thematic programming of each proposed magnet school. These three tiers of support are described below.

1) District-wide Initiatives in Support of MSAP

As laid out in the section that follows, the design of the Cornerstone 2017 has been carefully aligned with key components of the district's strategic vision, mission, goal, and core beliefs as outlined in the district's Strategic Plan, Vision 2020. In order to ensure that, "By 2020, WCPSS will annually graduate at least 95% of its students ready for productive citizenship as well as higher education or a career," the district is focusing much of its energy in supporting schools—particularly those whose students are struggling academically—to increase student performance and close achievement gaps. Key among these initiatives are:

- **MTSS (Multi-Tiered Systems of Support):** Create a culture where students take ownership of their learning and the adults surrounding the students are responsive to how each student learns, providing multiple pathways to success. This system of support is being phased into every WCPSS school and will focus on core instruction to meet the needs of all learners.
- **Understanding by Design (UbD):** Provide a framework that practices looking at the outcomes in order to design curriculum units, performance assessments, and classroom instruction.
- **Progressive Learning Environments:** Design progressive learning environments that strategically integrate digital and physical resources, and emerging technologies, to support innovative learning regardless of location or age of facility.

- **Dynamic Learning Experiences:** Provide engaging, and responsive learning experiences unique to student needs, honor failure as a part of learning, and adapt to a changing world.
- **Convergence:** Provide professional development to all WCPSS employees on how to embed instructional technology best practices into classroom learning. This bi-annual event of workshops is hosted by the WCPSS Instructional Technology Department.
- **Adaptive Resources:** Identify and provide wide-ranging resources designed to support dynamic learning experiences for all learners.
- **Equity-focused Professional Learning and Adaptive Leadership:** Promote new learning through equity-focused professional learning opportunities and by infusing adaptive leadership practices in educational innovation.

2) Cross-school Initiatives in Support of MSAP

Given their struggles with racial/ethnic and SES segregation, it is not surprising that the four proposed magnet schools are challenged with helping their students in meeting state learning standards. As shown in Tables 5 and 6, as of spring 2016, in each of the proposed magnet elementary schools, less than 50% of students met or exceeded the state learning standards in ELA and math. Additionally, ELA and/or math proficiency rates were substantially lower than the district averages at all three elementary schools. Secondary math has been focusing on student math learning through discourse and doing instead of teacher talk and directives. There is also a focus on ensuring that math instruction in the classroom aligns with the shift that has occurred with changing standards. More students have an opportunity to access appropriate math courses through semester-long versus year-long courses.

Table 5: Percent of Elementary School Students Performing At or Above Grade Level on the NC End-of-Grade Tests in Reading

Student Group	Bugg ES (grades 3-5)		Lincoln Heights ES (grades 3-5)		Millbrook ES (grades 3-5)		Wake County Public School System (grades 3-5)	
	Total N	Percent	Total N	Percent	Total N	Percent	Total N	Percent
All Students	281	34%	242	46%	381	47%	36992	67%
Asian	2	-	4	-	6	-	2994	86%
Native American	0	-	0	-	0	-	74	61%
Black	224	32%	95	34%	189	41%	8387	46%
Hispanic/Latino	38	21%	71	38%	128	41%	6742	44%
White	10	-	65	68%	50	80%	17380	83%
Two or more races	7	-	7	-	8	-	1377	71%
Students with Disabilities	47	9%	41	15%	23	26%	4657	27%
Economically Disadvantaged	n/a	26%	n/a	35%	n/a	38%	n/a	42%

Table 6: NC End-of-Grade Proficiency

Student Group	Bugg ES (grades 3-5)		Lincoln Heights ES (grades 3-5)		Millbrook ES (grades 3-5)		Wake County Public School System (grades 3-5)	
	Total N	Percent	Total N	Percent	Total N	Percent	Total N	Percent
All Students	281	28%	242	47%	381	42%	36994	69%
Asian	2	-	4	-	6	-	2997	91%
Native American	0	-	0	-	0	-	74	61%
Black	224	26%	95	36%	189	30%	8386	45%
Hispanic/Latino	38	24%	71	44%	128	45%	6744	52%
White	10	-	65	62%	50	76%	17380	84%
Two or more races	7	-	7	-	8	-	1375	70%
Students with Disabilities	47	9%	41	22%	23	35%	4655	31%
Economically Disadvantaged	n/a	22%	n/a	37%	n/a	35%	n/a	40%

Many students attending the proposed magnet high school are performing below grade level in reading and math. As shown in Table 7, fewer than half of Southeast Raleigh students

performed at or above grade level on the 2016 state tests in English (40%) and math (45%).

Furthermore, as shown, these results were lower than the district averages.

Table 7: English II and Math I Proficiency

Student Group	English II				Math I			
	Southeast Raleigh HS		Wake County Public School System		Southeast Raleigh HS		Wake County Public School System	
	Total N	Percent	Total N	Percent	Total N	Percent	Total N	Percent
All Students	364	40%	12170	69%	466	45%	12871	61%
Asian	8	-	844	86%	2	-	811	89%
Native American	1	-	40	58%	2	-	36	61%
Black	242	38%	3229	48%	318	36%	3481	34%
Hispanic/Latino	72	33%	1799	52%	102	58%	2129	44%
White	33	55%	5815	84%	36	78%	5906	79%
Two or more races	8	-	430	72%	4	-	492	63%
Students with Disabilities	82	13%	1581	26%	103	19%	1883	24%
Economically Disadvantaged	n/a	34%	n/a	45%	n/a	40%	n/a	43%

In recognition of the impact grade-level literacy has upon overall student success and the relative challenges in this area for each of the four Cornerstone 2017 project schools, WCPSS staff identified and incorporated into the project design two evidence-based programs (SMART and Reading Apprenticeship – RAAL and RAISE) that have been tested and validated in field settings and with populations similar to those being served through this grant initiative: Start Making a Reader Today (SMART) at the elementary level and Reading Apprenticeship Academic Literacy (RAAL) and Reading Apprenticeship Improving Secondary Education (RAISE) at the high school level. Descriptions of these **strong WWC evidence-based** approaches were provided in the narrative addressing Competitive Preference Priority 2 (copies of the two studies are provided as an Appendix E). All four Cornerstone project schools will have a MSAP-funded Instructional Coach to help support the implementation of these evidence-based literacy approaches to improve reading along with supporting district math initiatives to improve math achievement at the project schools.

SMART is a tutoring program designed to help early readers gain literacy skills. The program will be used with students performing below grade level in grades 1 and/or 2 in the three proposed magnet elementary schools to boost students' early literacy skills, academic achievement in reading, and confidence and enjoyment of reading. Students will attend 30-minute tutoring sessions twice a week and receive books to take home for reading with family members. Tutors are trained to follow strategies that focus on letter-sound relationships, predictions, reading across genres, and asking questions about core elements of the texts. These activities are designed to develop increased reading fluency and comprehension, necessary skills as students make the transition from learning to read to reading to learn. The SMART program delivery model will include the following:

- Training for MSAP-funded Instructional Coaches by SMART program experts;
- Modeling development and outcome support by SMART program experts;
- Training for tutors by MSAP-funded Instructional Coaches;
- Pairing students with a trained tutor (one-on-one), twice weekly;
- Ordering and inventorying book guidance;
- Distributing books to students, once a week, to build a home library.

RAAL is a program designed to help students become engaged, fluent, and competent readers. The course design supports instruction in the following areas: 1) student motivation and engagement; 2) reading fluency; 3) vocabulary and academic language development; 4) comprehension; 5) phonics and phonemic awareness; and 6) writing. RAAL will be implemented at Southeast Raleigh Magnet High School (SRMHS) in the beginning of year 1 of the grant as a new course for 9th grade students performing below grade level in reading. The course will be offered annually as an intervention designed to help students adopt strategies and routines that will improve reading proficiency and academic achievement in all content areas. In addition, all SRMHS teachers will be trained to incorporate RAISE into classroom learning that will bolster RAAL in years beyond the 9th grade. RAISE involves extensive reading, collaborative sense-making, and teaching of meta-cognitive skills such as prediction, summarization, graphic organizers, and clarification. This school-wide, 9th – 12th grade approach to improving literacy skills will not only help students in the years following the RAAL class but will also help all students with comprehension of complex text with a higher level of rigor associated with courses in the university connections theme and Common Core standards.

Other cross-school professional development and training that will support program implementation in the Cornerstone project schools include Critical Friends Group (CFG) training

with the goal of furthering cultural proficiency, growth mindset, and collaboration protocol practices. In addition, all schools will receive training from Magnet Schools of America (MSA) National Institute for Magnet School Leadership (NIMSL). A contracted team of national experts who have a rich knowledge of magnet schools around the country will provide NIMSL training to the four Cornerstone 2017 project schools. Training will include a focus on reviewing the magnet school design, creating innovative instructional systems, developing strategies on how to implement a magnet theme with fidelity, and support for engaging the community and marketing the magnet theme. A logic model found below in Image 1 shows the critical resources, activities, outputs, and outcomes identified as part of the theory of action guiding the proposal.

3) Magnet School Designs

All four schools selected to participate in Cornerstone 2017 engaged in a broad-based, collaborative planning process in developing its magnet program. To structure the process, each school established a magnet planning team composed of teachers, administrators, coaches, 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. Below is a description of each school's program summarizing the rationale for selecting the theme, the specialized curriculum and instructional approaches, professional development plans, and proposed parent engagement initiatives.

BUGG MAGNET ELEMENTARY: CENTER FOR DESIGN AND COMPUTER SCIENCES

With the MSAP grant, Bugg Magnet Elementary School (Bugg) will significantly revise the current magnet theme, Creative Arts & Science, to Center for Design and Computer Sciences, as described in Table 6. The **Center for Design and Computer Sciences** program is the first of its

kind in WCPSS. Students will engage in learning that develops higher-order thinking skills and provides a foundational skillset designed to meet the ever-changing technological challenges in our society. All students will receive in-depth, hands-on instruction in the design process and computer science concepts and skills, including computational thinking, coding, computer programming, and human-computer interaction using digital tools. As a result, Bugg students will enter middle school far ahead of the technological learning curve.

Rationale for Theme Selection

The state of the nation's workforce and educational landscape clearly and unequivocally point to a need to expand students' exposure to and engagement in computer science learning at all stages of their education. While the number of jobs requiring computer science skills is rapidly expanding, many students are still graduating from high school and college without having developed the skill set needed to enter into a career in computing. A recent study by the U.S. Department of Education predicts that, between 2010 and 2020, the American economy will annually produce more than 120,000 additional computing jobs that will require at least a bachelor's degree. However, the country's higher education system is currently producing only 43,000 bachelor's degrees in computer science as of the most recent 2010-11 data (National Center for Education Statistics). According to Code.org's Advocacy Coalition, in North Carolina alone, although there are nearly 17,500 open computing jobs, fewer than 1,300 students graduated with computer science degrees across the state in 2014.

While these statistics are alarming, the disparities are far more dire among female students and low-income and minority youth. For example, in 2015, only 22% of students taking the Advanced Placement (AP) computer science exam were girls, and only 13% were African-American or Latino students. These statistics mirror the current makeup of some of America's

largest and most innovative tech firms in which women comprise less than one-third of their technical employees, and African-Americans less than 3% (Voyles, 2016). In North Carolina, fewer than 1,500 students took the AP computer science exam in 2016; among these students, only 25% were female and only 14% were African-American or Hispanic (Code.org, n.d.). Although U.S. schools are beginning to address these disparities by increasing access to computer science learning opportunities, these efforts must be ramped up.

Experts in the field of computer science for young children believe students' academic skills can be strengthened through coding. Mitch Resnick, Director of the Lifelong Kindergarten Group at the MIT Media Lab and developer of the Scratch programming language, states in his TED talk entitled, "Let's Teach Kids to Code" that "as students learn to code, they code to learn." Coding opens up new opportunities for learning just as learning how to read and write does. Resnick also believes that through coding, students can become fluent with language as they express themselves creatively (animated stories, opinion polls, interactive artwork, etc.) and create new technology. Additionally, Resnick's team (2013) conducted research on students' math acquisition when coding is part of their academic structure. The team discovered that students learn math concepts such as variables and conditions, logic, problem solving techniques, and project design (i.e., breaking down big ideas to specific tasks) while using Scratch as a classroom learning tool. According to the online article, "Teaching Coding Can Help Improve Our Students' Math Scores" (Priyev, 2016), coding has very deep connections to the math classroom. While coding, students use critical thinking, visualization, and sequencing skills; the same skills needed to solve algebraic equations and other important math aptitude skills.

Finally, the theme for Bugg was selected based on feedback from a Wake County community survey conducted in November 2016. The results of the survey found there is strong demand for

elementary schools that focus on computer science. Coupling this feedback with national trends would suggest this will be a sought after addition to WCPSS' cadre of magnet themes.

Curriculum and Instruction

The Center for Design and Computer Sciences at Bugg will prepare students for future success by introducing them to foundational computer science knowledge and competencies. Bugg's magnet theme will not only support students' academic achievement but will foster the development of critical non-cognitive skills such as perseverance, decision-making, and self-motivation. With the support of the grant-funded Instructional Technology Coordinating Teacher and the Innovation Coach, teachers will develop a **thematic curriculum** that will encourage students to implement design processes, think critically, demonstrate creativity, problem-solve, and work collaboratively. Using research-based approaches, including Project Based Learning (PBL) from the Buck Institute, teachers will develop nine-week, standards-based units. Each unit will be framed around a driving question that will require students to use computer science skills to devise solutions to problems in their community and world. Throughout each unit, students will participate in hands-on, collaborative lessons and quarterly co-curricular coached projects.

The thematic curriculum will be grounded in a **computational thinking and design framework**. Computational thinking (CT) is a way of solving problems, designing systems, and understanding human behavior that draws on concepts central to computer science. CT creates and uses different levels of *abstraction*, *algorithmic* thinking, and application of math concepts. Bugg's focus on CT will help prepare students for higher-level math, science, and computer science they will encounter in middle and high school. The design framework attempts to inspire essential elements of creativity, the ability to take an abstract idea and create something, following the stages of empathize, define, ideate, prototype, and test (Cohen, 2014).

Table 8: Bugg ES Center for Design and Computer Sciences Sample Units

Grade 2, Topic: Attributes of Shapes (triangles, quadrilaterals, pentagons, hexagons and cubes)

Students will be able to: Recognize and draw shapes having specified attributes, such as a given number of angles or number of equal faces; Identify fractional parts of shapes (halves and 3rds).

Essential Questions: How are shapes named? Where do we see shapes in our daily lives?

Cross-Curricular Connections: Math – Use the Blockly app to create algorithms to move Dash robots along shapes containing fractional parts made with tape on the floor. Students will identify attributes of each shape and fractional parts. Students will capture their learning through notes, audio recordings, video, and photographs (using apps such as Seesaw or Google Suite).

Using the MAD (Mobile App Development) learn app development tool from Crescerance, students will work collaboratively to design and create an original app related to shapes.

Social Studies – Use Tinkercad or Cubify Draw to design and construct neighborhoods with houses, parks, roads, etc. of different shapes.

Enrichment Activities: Coding Club – Use Scratch to design an original piece of art that includes geometric shapes; Classroom visits or Google Hangouts (virtual field trips) with experts/engineers in the real estate, automotive, or transportation industries to discuss how shapes and their attributes affect their jobs and our lives.

Grade 5, Topic: Motion and Design

Students will be able to: understand force, motion, and the relationship between them; understand the interactions of matter and energy and the changes that occur.

Essential Questions: How do forces impact motion?

Cross-Curricular Connections: Science - Use Tickle and Sphero robots to study and compare forces and motion; Design carts (made with LEGOs or Kinex) filled with different weights to

study mass; Utilize the robotics kits to demonstrate the various interactions of energy and force/motion. Students will program the robots through different challenges and document their observations as they pertain to the concept learned. Using the MAD (Mobile App Development) learn app development tool from Crescance, students will work collaboratively to design an app related to force/motion.

Art - Design carts (made with LEGOs or Kinex) filled with different weights to study mass.

Enrichment Activities: Field trip to NC Museum of Life and Science to study force and motion in action. (They have offered a program called Pushes and Pulls); Classroom visits or Google Hangouts (virtual field trips) with experts/engineers in the tire, automotive, transportation industries to discuss how their jobs are related to matter, and energy and how these relate to motion; In-house robotics competition among 5th grade students to complete the forces and motion challenges outlined in the unit of study.

Students in all grade levels will engage in **instruction in coding languages and concepts** using a scaffolded approach supported by existing programming and curricula. For example, teachers will use the Code.org curriculum, which features four separate courses designed for specific grade levels (K-1, 1+, 3+, and 4+), as well as Scratch (grades 3+) and Scratch Jr. (grades K-2). Teachers will also utilize free and low-cost coding apps to support coding instruction, such as Hopscotch (ages 9-11), Daisy the Dinosaur (ages 6-8), Kodable (ages 4-11), Tynker (grades 3-5), and Lightbot Code Hour (grades K+).

Teachers at Bugg will utilize a variety of pedagogy to engage students in thematic learning, including: enhanced context strategies (e.g., problem-based learning, graphic organizers, current events, content through literature, real-world problem solving); collaborative groupings (e.g., lab

exercises, inquiry projects, games, group discussions, dramatizations); and interactive IT-based experiences and projects (e.g., podcasts, virtual field trips, blogs, video projects, slideshows).

Bugg will use manipulatives (robots, building materials, etc.) as a tool to engage all students in the magnet program. Research shows that the use of manipulatives has been proven to be one successful tool to increase engagement, motivation, and self-confidence. The National Center for Accessing the General Curriculum (Ruzic & O’Connell, 2001), in a review of 14 studies, found that “use of manipulatives compared with traditional instruction typically had a positive effect on student achievement.” The effect was consistent across the board but especially beneficial for high-risk, learning disabled, and limited English proficient students.

To further support theme-based learning during the school day, students will complete **elective courses** that incorporate technology use on topics such as: Robotics 1 (grades K-2) and 2 (grades 3-5); Computer Programming 1 (grades K-2) and 2 (grades 3-5); Digital Music and Composition; 2D and 3D Digital Art; Web Design and Global Communication; and Health and Fitness Technology Innovations. Students will self-select into eight different electives each year, with each course lasting approximately six to eight weeks. Electives will be facilitated by the Innovation Coach and fine arts, Spanish, drama, and physical education-teachers.

In addition, students at Bugg will engage in theme-based enrichment through **after-school magnet clubs**, facilitated by Bugg staff and supported by parent and business partner volunteers. Club offerings will include: CyberKids Robotics, First LEGO League Robotics, chess, computer graphics, math, Minecraft/gaming, Science Olympiad, and Girls Who Code.

The MSAP grant-funded Instructional Coach will help develop a strong mentoring program with IT local business partners US2020 in Research Triangle Park, the Iron Yard in Raleigh, and Vanbara, Inc., in Cary. Professionals (especially minorities and women) in the computing and

design fields will support Bugg's teachers and students. For example, female computer scientists from Vanbara, Inc. will meet with teachers during monthly professional learning team sessions to develop customized lessons using their visual, blocks-based programming environment, <http://bavelblocks.com>. Additionally, business partners will share professional experiences with students and offer guidance on what students need to prepare for future careers in the tech industry during casual *Lunch Bunch* meetings and during presentations at annual *Career Fairs*.

MSAP funds will be used to secure new technology and make various enhancements to school facilities in support of the theme integration. Classroom devices, such as tablets and laptops, will be purchased for every student in grades K-5 establishing a 1:1 environment. This will provide each student with necessary tools to investigate, practice, and expand curricular and coding concepts beyond the school day. These devices will also increase access, interaction, and creation opportunities for the specific population of students with disabilities and ELLs.

The school will create two grant-funded **Innovation Labs** accessible to all staff and students, as well as after-school clubs, for design and computer science electives or lessons. These labs will offer innovative spaces that support student learning. One Innovation Lab will house materials and offer an instructional space for grades K-2 and the other for grades 3-5. Each lab will include interactive technology devices with a charging cart, design equipment (3D printer, laser cutter [3-5 lab], large color poster maker [K-2 lab]), robotics equipment, makerspace materials, and furniture to facilitate collaboration to support K-5 design and computer science electives. The grant-funded Innovation Coach will maintain these labs. In addition, the Innovation Coach and grant-funded Instructional Technology Coordinating Teacher will collaborate with teachers and specialists to create, schedule (using Google Calendar), and co-facilitate design and computer science lessons in the Innovation Labs.

Grant funds will also provide classroom enhancements to better facilitate collaborative learning. Purchases will include dry erase panels, moveable tables, flexible seating (chairs with wheels and Hokki stools), flat screen monitors, LEGO tables, and a laser printer per grade level. The book collection in the Media Center will be expanded with new books to support the general curriculum, design, computer science, and computational thinking. In addition, sets of materials will also be purchased to support K-5 daily design and computer science lessons (LEGOs, K'nex, Dash and Dot robots, Sphero robots, GoPiGo robots, LEGO WeDo, LEGO Mindstorms, Cubelets, Ozobots, and more). Using the existing space, video production room, the media coordinator and Instructional Technology Coordinating Teacher will collaborate with Bugg teachers to plan and facilitate daily lessons to support students' projects and achievement.

Parent Engagement

Bugg will provide various activities and opportunities for parents to be engaged in the magnet program. Through collaboration with the school's Parent Teacher Association (PTA), parents will be assigned specific roles to support various aspects of the program (e.g., research, community engagement, event planning, etc.). The school will host quarterly family engagement nights, where families will receive information about what their children are learning. For example, parents may engage in hands-on activities, receiving exposure to the basics of coding and app development. These events will feature guest speakers and showcase student work.

A Parent Intern Program (PIP) will provide family opportunities to volunteer on theme-specific projects and provide classroom support. To ensure that all parents receive critical information, all written communication to parents will be translated into the languages spoken in the school community (Spanish and Bangla) and interpreters will be at schoolwide events.

In addition, the school will establish a Magnet Advisory Board comprised of staff, students,

parents, members of the Greater Raleigh Chamber of Commerce, The Iron Yard, Vanbara, Inc., and other community stakeholders. Board members will be assigned specific roles to support the planning and implementation of the design and computer sciences theme. A critical position on the Magnet Advisory Board will be the Talent Procurement Coordinator. This parent will identify the careers within the parent body that will support the magnet program, building a directory as a resource for staff to tap into the expertise within the school community. The board will meet monthly throughout the five-year grant period to explore opportunities to connect the school with partnerships and resources to support their magnet program. The school will establish forums to support the sharing and dissemination of best practices with key stakeholders, including Showcase Nights (e.g., Hackathon, Makers Fair) and social media platforms.

LINCOLN HEIGHTS MAGNET ELEMENTARY AND MILLBROOK MAGNET

ELEMENTARY: ENVIRONMENTAL CONNECTIONS

With the MSAP grant, Millbrook Magnet Elementary School (MMES) will significantly revise the current magnet theme, International Baccalaureate, to Environmental Connections, and Lincoln Heights Magnet Elementary School (LHMES) will add Environmental Connections as a new magnet theme, as described in Table 6. The **Environmental Connections** program is the first of its kind in Wake County. This program will provide students in two geographic regions of the County, the northern and southern parts of the district, with access to daily, authentic, hands-on opportunities to investigate and connect with life outside the school walls. The 2017-18 school year will be used as a planning period for Lincoln Heights with magnet implementation to coincide with the grand opening of a renovated school facility in 2018-19.

Rationale for Theme Selection

There is a growing movement to reconnect children with nature-based learning, spearheaded by experts such as Richard Louv and organizations such as the Children and Nature Network and the Natural Start Alliance. Research has found regular contact with the natural world is associated with positive outcomes, including increased emotional and behavioral resilience, strengthened self-determination, and reduced stress (Lee, Jordan, & Horsley, 2015; Hartig et al., 2003). Providing students with authentic connections to the natural world has also been shown to enhance attention, improve behavior, increase engagement and enthusiasm for school, and lead to increased academic performance (Coyle, 2010). In a rapidly changing world, children are becoming increasingly disconnected from the natural world (Louv, 2008). For youth, particularly those who reside in low-income communities, limited access to technology, fear of crime, and lack of access to parks and green spaces has resulted in a lack of environmental engagement.

Based on a Wake County community survey conducted in November 2016 on magnet program themes, there is strong demand for elementary schools that focus on environmental connections. With MSAP support, LHMES and MMES will leverage students' innate interests in the natural world and provide the critical resources needed to develop a school-wide Environmental Connections program. This magnet program will foster the development of students' critical thinking, scientific inquiry, and literacy skills, leading to increased academic achievement for students at both schools. Students will engage in hands-on scientific learning through a variety of methods, including non-linguistic representations, interactive journaling using handheld devices, recording field notes, collecting and analyzing nature-based data, and problem-based inquiries using multiple process methods. Students will have ample opportunities

to develop metacognitive capacity. They will learn to “think about how they are thinking,” by deciding how to gather information, apply information, and “publish” their findings.

Through the development and implementation of re-aligned grade level curriculum standards, LHMES and MMES students will be engaged in daily instruction in core content areas delivered through the lens of environmental and life sciences. This alignment and curriculum mapping will take place through a collaborative effort, with specialists from the WCPSS Elementary Science and Social Studies department, the M&CE office, teams of teachers K-5 from both schools, and the College of Education-Elementary Sciences at NCSU. A philosophy and guideline for embedding and propagating the culture of environmental sciences will be built by using the text, “Last Child in the Woods-Saving our Children from Nature Deficit Disorder” by Louv, and through best practices aligned in the document, “Smart Minds, Greener Future-the NC Environmental Literacy Plan” (NC Office of Environmental Education, 2014).

Curriculum and Instruction

LHMES and MMES will develop and implement an **environmental literacy curriculum** using the North Carolina Environmental Literacy Plan as a guide (North Carolina Environmental Literacy Plan, 2014). The curriculum will support students in becoming environmentally literate citizens through development of the following characteristics:

- Understanding how natural systems and human social systems work and inter-relate;
- Combining this understanding of the environment with personal attitudes and experiences to analyze various facets of environmental issues;
- Demonstrating the skills necessary to make responsible decisions based on scientific, economic, aesthetic, political, cultural, and ethical considerations; and
- Practicing personal and civic responsibility for decisions affecting shared natural resources.

The thematic curriculum will be grounded in cross-content learning opportunities. For example, interdisciplinary learning will occur through the alignment of science and social studies concepts. Students will develop their literacy proficiency through the exploration of theme-based texts and materials that are rich and complex. Students will also gain literacy proficiency, and develop their math skills, through independent and collaborative inquiry projects. This interdisciplinary approach to instruction will recapture time lost to transitioning between subjects, allowing for more time for intensive and targeted remediation or enrichment.

Students at each grade level will engage in multidisciplinary, project-based learning through completion of **Environmental Challenge Inquiry Units**, taught by Environmental Inquiry (E-Inquiry) teachers as part of the specials rotation. While the E-Inquiry teacher at LHMES will be MSAP-funded, the E-Inquiry teacher at MMES is not included in the MSAP budget because an existing district-funded magnet position will assume this role. The Environmental Challenge Inquiry Units will focus on four broad themes: 1) living things, 2) earth science/solar system, 3) environmental/community connections, and 4) weather and climate. These units will be grade-specific, standards-aligned, project/problem-based learning activities. E-Inquiry teachers will conduct classes through a problem-based learning approach, with students driving their learning by choosing to answer a pre-determined question (lower grades) or choosing to research a problem question within that subject (upper grades). Examples of thematic units of study for the lower (K-2) and upper grades (3-5) are presented below.

Table 9: Environmental Connections Sample Units

Grade K-2 Expedition: “Eco-Wise” (Science)		
Essential Questions:	Connections:	Extension activities:
- How are biome inhabitants’ needs different due to their environments? -How does pollution affect the inhabitants of a biome? - How can I change levels of pollution in my community?	Social Studies standards integration; literacy/math skills acquisition through data collection, recording, analyzing and presenting	- Fieldtrips to local habitats to collect data on inhabitants; -Experts visit classrooms, with follow-up visits to recycling plant - “Playground Partners” after-school beautification club/ habitat creation/protection
Grade 3-5 Expedition: “Bee-Cause” (Science)		
Essential Questions:	Connections:	Extension activities:
-What are the benefits of protecting pollinators? -How can I promote healthy populations within my community? -What are causes for pollinator scarcity?	Social Studies standards integration; literacy/math skills acquisition through data collection, recording, analyzing and presenting	-Excursions to community gardens to observe pollinators in action -Presentations on beekeeping and industry dependence on the bee -“Pollinator Protectors”- after-school club to tend to pollinator gardens around the school

Additionally, “**Expeditions**” will take place once per day each day, and will be taught by classroom teachers. *Expeditions* will be multidisciplinary elective classes rooted in math and literacy content and process skills. All students will have the option of taking these elective

Expedition classes in theme-related areas that will extend what they are learning in the core subjects. Expeditions will be offered on wide-ranging topics, such as amphibian studies (living things), alternative energies (environmental/community connections), or efficient vehicle design (environmental/community connections). Partnerships with the NCSU Colleges of Education, Natural Resources, and Agriculture & Life Sciences, the NC Museum of Natural Sciences, and the NC Department of Environmental Quality/Environmental Education will assist in development of these Expeditions (see letters of support in the Appendix C). This support will consist of consultation, field trips, materials, guidance, and professional development, as needed.

An MSAP-funded position, Environmental Connections Integration Specialist (ECIS), will be a critical position to ensure the success of this program at both schools. The ECIS will support theme fidelity by working directly with classroom teachers to align curriculum and pedagogy with standards, as well as curriculum creation. The ECIS will also serve as a liaison between the school, partners, and M&CE staff to facilitate concept integration and professional development.

Implementation of thematic instruction will be enhanced and made more rigorous through the integration of research-based instructional approaches including cross-curricular integration and inquiry- and project- and/or problem-based learning. Teachers will utilize, and receive training in, the pedagogical methodologies of Universal Design for Learning (UDL) and Understanding by Design (UbD). The goal of UDL is to use a variety of teaching methods to remove barriers to learning and give all students equal opportunities to succeed and adjust to every student's strengths and needs. UDL is grounded in the use of three principles: *representation* (offering information in multiple formats); *action and expression* (providing students with more than one way to interact with and be assessed on the material), and *engagement* (utilizing different methods to motivate students) (Morin, nd). It optimizes students' ability to think more

holistically, beginning with their engagement through the natural world, and carries the structure through the process of demonstrating learning through choice. UbD is an educational planning approach that uses backward design, identifying outcomes in order to design curriculum units, performance assessments, and classroom instruction (Wiggins & McTighe, 2005).

The Environmental Connections theme will extend to creative learning spaces outside the school building called outdoor learning laboratories. LHMES will have a brand new building in 2018, funded by the district and equipped with outdoor learning laboratories that are designed specifically to support the environmental connections theme. MSAP grant funds will be used for MMES to create similar outdoor learning laboratories that support student learning in naturalized, landscaped areas. A pollinator garden, food garden, wetlands, native species of plants, and strategically created “zones of attraction” for birds, butterflies, pollinators, and amphibians will be placed around school grounds. Using the National Wildlife Federation’s program template, “Garden for Wildlife,” as well as leveraging partnerships and environmental resources, “schoolyard habitats” will be created to enhance outdoor learning lab experiences. Schoolyard Habitats is a national program that connects children to the outdoors through outdoor classrooms. In addition, the two schools will be equipped with an environmental amphitheater for learning presentations and garden seating to support classroom instruction outdoors.

The Environmental Connections theme will be infused inside the school building to create a culture and learning environment that is deeply connected to the magnet theme. When entering the lobby at both schools, students will see shades of a spring meadow and images on the lobby monitor of the findings they captured in their nature fieldwork. Classroom colors will mimic a green field, a sunny shoreline, and a sun-dappled forest, and will be designed to support collaborative student groupings and hands-on learning, featuring soft seating and learning labs.

Classrooms will be equipped with a host of equipment and technology to support thematic instruction, including: binoculars; computer-enabled microscopes; interactive technology; ; sensors for air, soil, and water temperature, and air pressure; and dip nets, butterfly nets, and bug/butterfly homes. The media centers in both schools will also transform to include soft seating, nooks decorated with nature scenes and photos, and various plant life. Primary and secondary resources will also be added to the existing book collection to support new electives; modules/PBL units on plants, animals, and environmental science; and community-based environmental projects like gardening, biographies of scientists, and environmental issues.

Students will have various opportunities to engage in theme-based enrichment outside of the classroom. For example, they will engage in “restore” time rather than recess, during which they will play in natural areas, observe their habitats and zones within their gardens, and refresh their mental clarity and endurance through casual contacts with nature and each other. In addition, students will take field trips to the J.C. Raulston Arboretum, North Carolina Museum of Natural Science, and Prairie Ridge Ecostation. These trips will be aligned to thematic units and foster students’ connection to the environment and development of scientific inquiry skills.

Parent Engagement

Parents at Lincoln Heights and Millbrook will have various opportunities to participate in theme-based activities. For example, parents will be active participants in creation of outdoor learning environments, including the construction and maintenance of a garden. Construction of the gardens will promote a positive and sustainable environment in which students, staff, and community members can collaborate, and will allow parents to hone their gardening skills.

The schools will also establish a Magnet Advisory Board. Advisory Board partners, such as NC Department of Environmental Quality and NCSU College of Agricultural & Life Sciences

will join parents in helping the schools develop and sustain their magnet theme. Parents serving on the board will be assigned specific roles to support the various aspects of the program. For example, one board member will serve as the Community Garden Coordinator, leading the recruitment and management of parents who have volunteered to work on the garden. A parent intern program (PIP) will provide parents with opportunities to volunteer on theme-specific projects, such as designing and setting up outdoor learning spaces that are being developed through the magnet grant. The PIP will also create capacity within parents by growing volunteer opportunities within the Environmental Inquiry classes and the Expedition Electives. Parents with varying levels of expertise will be encouraged and nurtured to participate.

Finally, all written communication to parents will be translated into the languages spoken in the school community, with Spanish being the common non-English language in the school, and interpreters will be provided at school-wide events. Another critical position on the Magnet Advisory Board will be the Talent Procurement Coordinator, who, like the Coordinator at Bugg would build a directory of parents, their skill sets, and ways in which those parents would be willing to share their expertise within the schools (Expeditions; Inquiries’ speakers; hands-on expertise in building, maintaining, or enhancing natural environments; and community “connector” to leverage volunteers within their businesses.). Building family engagement at these two schools through the theme will significantly change and enhance school culture.

SOUTHEAST RALEIGH UNIVERSITY CONNECTIONS: SCHOOL OF DESIGN, ARTS, AND ENGINEERING MAGNET HIGH

With the MSAP grant, Southeast Raleigh Magnet High School (SRMHS) will significantly revise the current magnet theme, Center for Leadership & Technology, to **University Connections: School of Design, Arts & Engineering**, as described in Table 6. SRMHS will

serve as a beacon in the community, the only magnet school to offer this program in the district.

SRMHS will build strong and visible partnerships with NCSU and other local colleges and universities as well as businesses to provide invaluable resources and opportunities for students to prepare for the specific college and career pathway of their choice. The significantly revised magnet program will be organized into the following four college and career pathways: 1)

Design, 2) Arts, 3) Engineering, Math, and Sciences, and 4) Humanities and Social Sciences.

The four pathways reflect a typical university structure and will attract new students to SRMHS while building on the existing strengths of the school and improving the academic focus.

Rationale for Theme Selection

SRMHS faces significant challenges that it must overcome in order to attract more magnet students; a significant magnet school redesign is necessary to signal to the larger community that measurable transformation is taking place at the school. The proposed theme, University Connections: School of Design, Arts & Engineering, will leverage college-level expertise to inform the development of magnet course offerings and strengthen overall program rigor.

University partners will help improve the academic focus of the school by providing more challenging opportunities for students, and thus entice families to take another look at SRMHS.

Exploring partnerships with prestigious local institutions, such as NCSU, will radically change the perception of the school. A university connection will expose students to new and different resources beyond the reach of most public schools (Brumbach & Ridenour, 2003). Bringing college personnel to campus will offer students the opportunity to ask questions and seek out new educational or career opportunities to embark on a college/career path with confidence.

Aligning university and local partnerships with program offerings in the significantly revised magnet will provide students with more opportunities and relevance to their classroom learning.

Students will have opportunities to take specialized courses, interact with experts in these fields, and participate in on-site visits with industry professionals. Based on a Wake County community survey from November 2016 on magnet themes, there is strong demand for a high school option that focuses on design, arts, and engineering with an emphasis on University Connections.

Curriculum and Instruction

SRMHS will develop a transdisciplinary thematic curriculum that will allow students to select and focus on one of the following College and Career Pathways: **1) Design; 2) Arts; 3) Engineering, Math, and Sciences; and 4) Humanities and Social Sciences.** These Pathways will guide the selection of opportunities for students in university connections and career experiences, but it will in no way limit student options.

Historically, the transition between eighth and 9th grades is the second most difficult transition with the first starting in kindergarten. In light of this, SRMHS will develop, with MSAP funding, a 9th-grade **University Connections Exploratory Course** that provides students with a foundation of the magnet theme as well as a blueprint for “middle school to high school” strategies for success. This course will be divided into four units, each one grounded in one of the four college and career pathways encompassed in the magnet theme. The course will be structured with overarching strategies for success in the beginning of the semester followed with the opportunity to delve into theme essentials. It will:

- Focus on the development of “soft skills” necessary for success in high school, college, and career (e.g., critical thinking, collaboration, organization);
- Develop meta-cognitive skills like prediction, summarization, organization, and clarification;
- Provide an in-depth overview of the four college and career pathways, including coursework, enrichment opportunities, and workplace/real-world experiences that are available;

- Feature guest speakers, research projects, and real-world experiences (e.g., events, showcases, exhibits) related to each pathway; and
- Provide students with guidance in declaring their pathway.

In the spring, 9th graders will select a course of study in one of the College and Career Pathways.

To further support students in selecting a pathway, SRMHS will host a **College and Career Pathway Fair** for 9th-grade students each year, during which they will meet with university, industry, and community partners. The College and Career Pathway Fair, organized by the MSAP-funded University Connections Liaison and the Magnet Coordinator, will take place each fall and with all Freshman English classes attending during their scheduled class period. Students will interact with admissions office representatives from partner universities, such as NCSU, Meredith, North Carolina Central University (NCCU), and Duke, who will share entrance criteria and conduct practice interviews. Additionally, business and community partners connected with the four college and Career pathways, such as Smith Sinnett Architecture Firm (Design), CISCO (Engineering), the Contemporary Art Museum in Raleigh (Arts), and the James B. Hunt Library at NCSU (Humanities & Social Sciences), will schedule students to attend on-site tours, share student internship opportunities, as well as present information about their work in the local community. School counselors will provide a list of course offerings in the four pathways, including AP course offerings, and offer consultation in preparation for spring registration. By the end of this event, students will indicate through an electronic survey which of the four pathways they have an interest in exploring further.

In order to connect College & Career partnerships with classroom learning, SRMHS has developed a framework that outlines four major elements necessary to implement and sustain the theme. These components include 1) specialized coursework options for students, 2) University

Connections that galvanize students' futures, 3) business and community partnerships to increase student marketability, and 4) internships to prepare students for future work. The framework below describes some, but not all, of the unique features within each SRMHS pathway.

College and Career Pathway of Design

Specialized Coursework (*Design*)

- CAD Drawing, Landscape Design, Textile Design, Certifications in Game Art Design

University Connections (*Design*): college students collaborating with SRMH students.

- NCSU College of Design: Multicultural Design Students Association;
- NCCU "FabLab" (Fabrication Laboratory Network).

Partnerships Supporting Teachers and Students (*Design*)

- Smith Sinnet Architecture Firm- develop a master plan of redesigned spaces throughout the school with students, faculty, and community;
- Local Designers/Artists: such as IronHouse Forge blacksmith providing professional input to SRMHS students and studio tours.

Internship Opportunities for Students (*Design*)

- NCSU College of Design: student-to-student interaction on design projects;
- SRMHS Student Studio Project shadow a design team on a WCPSS facility project.

College and Career Pathway of Visual and Performing Arts

Specialized Coursework (*Arts*)

- Music Theory, Advanced Sculpture, Computer Animation, Certifications for Photoshop, etc.

University Connections (*Arts*)

- NCCU (Arts) students host arts classes and workshops for SRMHS students (Photoshop, portraiture, etc.).

- Meredith College host arts workshops, collaborative performances, and exhibits for SRMHS.
- Duke University guides SRMHS on the development of an arts/engineering interdisciplinary course elective.

Partnerships Supporting Teachers and Students (*Arts*)

- NC Museum of Art-teacher/student workshops; Theatre Raleigh-host 5 sessions that review major elements of theatre.

Internship Opportunities for Students (*Arts*)

- Theatre Raleigh: Internship opportunities during family series performance season;
- NC Symphony: conduct master workshops for SRMHS students and arts staff;

College and Career Pathway of Engineering, Math and Sciences

Specialized Coursework (*Engineering, Math & Sciences*)

- Robotics, Principles of Engineering, Certifications in CISCO, Shopbot, etc.;

University Connections (*Engineering, Math & Sciences*)

- SRMHS female students and NCSU College of Engineering female students to host a *Girls Engineering Day* for elementary and middle school female students;
- Engineering Summer Camp for elementary and middle school students – hosted by SRMHS students and NCSU College of Engineering students.

Partnerships Supporting Teachers and Students (*Engineering, Math & Sciences*)

- Engineering agencies such as National Society of Black Engineers, National Society of Women Engineers, National Society of Hispanic Engineers, and local engineering firms.

Internship Opportunities for Students (*Engineering, Math & Sciences*)

- Collaborate with NCSU College of Engineering on Freshman Engineering competition.
- SRMHS students tour CISCO, receive hands-on training with robots and cyber security.

College & Career Pathway for Humanities and Social Sciences

Specialized Coursework (*Humanities & Social Sciences*)

- Broadcasting/Journalism classes, Certifications for Adobe, etc.

University Connections (*Humanities & Social Sciences*)

- NCSU College of Humanities & Social Sciences- professors and college students working with students on creative writing projects,
- NCSU James B. Hunt Library staff share research techniques with SRMHS students,

Partnerships Supporting Teachers and Students (*Humanities & Social Sciences*)

- NC Institute of Emerging Issues staff work with groups of SRMHS students on understanding career options with electronic-based texting program called “Text, Talk, and Future.” Institute hosts classes for SRMHS students on building civic engagement.
- La Conexión (a newspaper covering local news relevant to the Hispanic community)

Internship Opportunities for Students (*Humanities & Social Sciences*)

- Local NC government and local language media and festivals,
- Local videography businesses.

By year four of the MSAP grant, SRMHS will have expanded its AP course offerings and twelfth-grade students will complete an AP **Capstone Graduation Project** or an **Inter-pathway Culminating Project**. The Capstone Project will be for AP students who wish to gain expertise in specialized content areas and higher-level research processes. This innovative program from the College Board equips students with the independent research, collaborative teamwork, and communication skills that are increasingly valued by colleges and employers. The purpose of the AP Capstone Project is to challenge students who have taken AP courses and provide an opportunity to deepen their scholastic experience. The purpose of the Inter-pathway Culminating

Project is for any student in each of the college and career pathways to participate in a collaborative project to exhibit their area of pathway expertise. Students will demonstrate their ability to apply knowledge and skills gained throughout their years at SRMHS. For example, a group of students from each pathway could potentially collaborate to write (Humanities and Social Sciences), design (Design/Engineering, Math, and Sciences), and produce (Arts) a play. The Inter-pathway Culminating Projects will be graded by college representatives, SRMHS teachers, as well as teachers from feeder magnet elementary and middle schools.

Students will have multiple opportunities to engage in theme-based enrichment activities supported by business and university partnerships and organized by the grant-funded University Connections Liaison. Examples of enrichment opportunities are pathways include **College and Career Pathways for Arts and Engineering, Math, and Sciences**. SRMHS students may experience a performance and technology course with Duke University professors. SRMHS students will collaborate with Duke students to explore technologies in performance. Cross-curricular opportunities will range from designing a visual arts performance set using latest technologies, researching how arts performances have evolved with technology, or researching how arts communication styles are parallel to media and computer interface systems.

College & Career Pathway for Design: SRMHS will boast the only high school in Wake County that will involve its high school students in the architectural redesign of several existing classroom spaces at the school, utilizing the four college and career pathways. SRMHS students will partner with a local architecture firm, Smith Sinnett, to participate in the design and function of these new spaces. Students will participate in the creation of a “live out loud” studio space for students in the *College & Career for Humanities & Social Science Pathway*, and a “think and do” studio space to support students in the *Design, Arts & Engineering College and Career*

Pathways. The school's lobby will also be redesigned to create a functioning space that showcases student work and projects. SRMHS students will develop skills, while working with the architecture firm, which can be carried forward to college and career opportunities.

Another opportunity for students in the **College & Career Pathway for Design** as well as the **Pathway for Engineering, Math, and Sciences** is the ACE (Architecture, Construction, and Engineering) Mentor Program of America, Inc. This program works with experts in ACE fields to mentor high school students who are interested in pursuing careers in design and construction. ACE will engage partners in each of the ACE fields to mentor SRMHS students and collaborate with them to create and present a culminating product based on their new expertise in the architecture, contracting, and engineering business.

College & Career Pathway for Engineering, Math, and Sciences: SRMHS students will participate in NCSU's *Freshman Engineering Design Day*, during which first-year NCSU engineering students will mentor SRMHS students to participate in this college-level competition. Student teams will showcase their design projects and compete for awards. Projects will be completed as part of an Engineering course and an after-school club.

College & Career Pathway for Humanities and Social Sciences: SRMHS students will join forces with the NCSU Institute of Emerging Issues and the James B. Hunt Library at NCSU. The Institute seeks out the foremost thinkers in various fields and creates a forum for expert and novice alike to research, discuss, and consider an issue that impacts many citizens. This year's forum, entitled "KidoNomics: The Economics of Early Childhood Investment," featured information sessions, panels, and audience engagement activities. In upcoming years, representatives from the Institute will work with SRMHS teachers and students to research the current issue from various vantage points, as well as guide student participation in the Forum

itself. Additionally, NCSU students and staff from the James B. Hunt Library will work with teachers on ways to structure learning environments to motivate and guide student research.

Specialized MSAP-funded teaching positions needed to support the development of the College and Career Pathway course offerings include a Broadcast/Journalism teacher and a Design/Arts teacher. The Broadcast/Journalism teacher will offer a new course and provide students with practical, hands-on learning along with necessary digital and entrepreneurial skills. Students will complete the course capable of researching, writing, shooting, producing, and editing their own stories. The Design/Arts teacher will assist in building the arts/design program combining elements of design with graphic, digital arts, and architectural design. Coursework may include, but is not limited to: Art and Graphic Design, Principles of Design & Design Thinking, and Models of Architecture: Learning through Digital/Physical Models.

MSAP funds are needed to provide resources to enhance each of the four college and career pathways and expand the book collection in the Media Center to support topics related to the pathways. Classroom technology for a 2:1 initiative, software, and mobile devices are just a few of the materials needed to enhance classroom instruction. Technology devices will also increase access, interaction, and creation opportunities for students with disabilities and ELLs.

The magnet program at SRMHS will be rolled out over the five-year grant period, as follows:

Year 1 (2017–18):

- Develop the 9th grade University Connections Exploratory course and pilot the course 2nd semester as an elective class.
- Implement Reading Apprenticeship Academic Literacy (RAAL) classes for 9th grade students performing below grade level in reading.
- Develop college/university, industry, and community partnerships to support the pathways –

with the assistance from the MSAP-funded University Connections Liaison.

- Develop new University Connections: School of Design, Arts, and Engineering curriculum.
- Establish student internship opportunities with local businesses and university partners.
- Host inaugural College and Career Pathway Fair prior to 10th grade course registration.

Year 2 (2018–19):

- All 9th graders complete University Connections Exploratory course.
- Continue Academic Literacy (RAAL) classes for 9th graders below grade level in reading.
- Implement Reading Apprenticeship Improving Secondary Education (RAISE) in all classes for all grade levels, 9th – 12th.
- Rising Tenth-grade students declare one of the four College & Career pathways.
- Continue to establish and build university and business partnerships.
- Develop new University Connections: School of Design, Arts, and Engineering curriculum
- Continue to expand student internship opportunities.

Year 3 (2019–20)

- Eleventh-grade students identify a pathway-specific topic to research senior year in AP Capstone or for the Inter-pathway Culminating Project.
- Develop new curriculum (PBL unit).
- Continue to implement RAAL and RAISE.
- Expand the depth and breadth of partnerships with College & Career pathways.
- Expand internship opportunities.

Year 4 (2020–21):

- Twelfth-grade students complete a **Capstone Graduation Project** or an **Inter-pathway Culminating Project**.

- Host schoolwide **Share Fair** where 12th graders for each pathway exhibit for the community.
- Introduce **certification opportunities** for twelfth-grade students (e.g. CISCO, Game Art Design or Engineering, Adobe for Graphic Design).
- Continue to implement RAAL and RAISE.
- Develop new curriculum (PBL unit).
- Expand the depth and breadth of partnerships with College & Career pathways.
- Expand internship opportunities.

Year 5 (2021-22):

- Expand the depth and breadth of partnerships with College & Career pathways.
- Expand internship opportunities.
- Continue initiatives from years 1-4.

Parent Engagement

SRMHS parents have pride and hope for a bright future at the school. Families, along with the staff, share a vision to reclaim a high level of achievement and foster student success. Parent engagement is crucial to help sustain the new magnet theme over time and to recruit new students. SRMHS parents have already been engaged in the initial needs assessment and planning phases of the significantly revised theme development through focus groups, interviews, and surveys completed at the school in the fall of 2016. As a result of their input, in combination with the input from staff and community members, the new theme, University Connections: School of Design, Art, and Engineering, evolved.

SRMHS parents will participate in the implementation phases of the significantly revised theme. Participation on a Magnet Advisory Board consisting of parents, alumni parents, business partners, stakeholders, and staff will be formed to support implementation. A critical position on

the Magnet Advisory Board will be the Talent Procurement Coordinator, who, like the Coordinator at Bugg, LHMES, and MMES will build a directory of parents' skill sets and identify the ways in which those parents will share their expertise within the schools (e.g. as a guest speaker in one of the four college and career pathways; and leveraging volunteers within their work place, etc.). Building new opportunities for parent engagement connected to the magnet theme will significantly enhance the school culture.

Finally, all written communication to parents will be translated into the languages spoken in the school community, with Spanish being the major non-English language in the school, and interpreters will be provided at school-wide events. A Parent Intern Program (PIP) will provide SRMHS parents with opportunities to volunteer on theme-specific projects, such as helping to organize the College and Career Pathway Fair. The PIP will also create capacity within the parent community to help extend student opportunities beyond the school day to include job shadowing and internship opportunities in their companies/work place. Additional opportunities for parent engagement at SRMHS will include the following:

- Conduct soft-skill development and college preparatory workshops;
- Offer internship opportunities to SRMHS students in their workplace;
- Research and secure student internships in the community;
- Assist in the development of the design, arts, and engineering learning labs/studio spaces;
- Volunteer during Engineering Summer Camp and Girls Engineering Day;
- Mentor 12th graders with Capstone Projects and Inter-pathway Culminating Project; and
- Participate in marketing and recruitment activities.

B(2): Applicant demonstrates it has resources to operate the project beyond the grant

District Commitment to Magnet Program Sustainability

WCPSS has been a pioneer in magnet school education since 1976 when the district implemented a voluntary desegregation plan following the merger of the Raleigh City and Wake County school districts. WCPSS has never been under a court-ordered desegregation plan, largely because it has shown its commitment to diversity and excellence by the voluntary establishment of its magnet schools and by continued support and maintenance of these schools with local dollars. As mentioned in the CPP 4 narrative, WCPSS magnet programs have been viewed as a model for other districts nationwide, so much so that in April 2015, WCPSS hosted the National Magnet Schools of America conference.

The Wake County BOE currently dedicates various local resources to support its magnet programs. For example, the locally-funded WCPSS M&CE Office provides support to all magnet schools in the district. Office personnel support marketing and recruitment efforts for magnet schools, manage specialized curriculum development, lead professional development, and spearhead program coordination. The district continues to support the position of Senior Director for magnet programs and the dedication of a space in the district's central office devoted to support magnet schools. In addition to the Senior Director, there are another six staff in the M&CE office. Among these staff, two are responsible for student recruitment for all 43 existing magnet schools and the one new magnet school included in this proposal. There are also personnel who manage curriculum development and themes at all magnet schools, including a Director of Curriculum Enhancement who facilitates a STEM Schools Collaborative Network and Early Colleges, a Director of Magnet Themes & Curriculum who supports curricular development and theme development and implementation at all magnet schools, a Senior Administrator for magnet schools offering the International Baccalaureate Programme, and a

Senior Administrator of LAB Schools working with Leadership themed programs in the district.

As noted, the M&CE Program Office space in the district's central office, which is open to the public, is devoted to support magnet schools (magnet program management and communication). This office space serves as a year-round recruiting hub for magnet programs and provides workspace for locally-funded magnet personnel. Furthermore, the district allocates additional staff, professional development, and materials to support magnet schools beyond base formulas to make these programs attractive to students in target recruitment areas and promote healthy demographics within all WCPSS schools. WCPSS also locally funds transportation costs that are associated with the WCPSS magnet program.

In November 2016, the BOE unanimously supported this application for MSAP grant funds, acknowledging that the continuation of magnet activities after the five-year funding period will require resources beyond those needed by traditional schools. The four schools in this application will be no exception to the district's commitment to ensure the success of every magnet school. For example, WCPSS anticipates funding all school-based, MSAP-funded positions at the conclusion of the grant. In addition to school-based personnel, WCPSS will continue to make available to the magnet schools locally funded M&CE staff, including the Senior Director.

In addition to the districtwide commitment to magnet schools and diversity, each Wake Cornerstone school is in the process of developing partnerships and staff capacity (section B(3)) to maintain the high quality programs developed through the grant for years after funding ends.

Extensive district-level collaboration went into the development of this MSAP application. Decisions about the proposed magnet schools are an outgrowth of a review of data by the M&CE Programs Office in collaboration with the district's Data & Accountability Office. M&CE Programs hired an education consultant in August 2016 to assess challenges and needs at the

four Cornerstone project schools and develop initial ideas for a new magnet theme. A timeline and description of the key activities in this process are presented below.

- Magnet Applicant Survey (January 2016): invited all 2016 magnet applicants on observations and opinions about current magnet programs and ideas for additional innovative themes.
- BOE Work Session (October 2016): M&CE Programs Office presented the four schools to the BOE and collected BOE input on the selected schools.
- BOE Meeting (November 2016): BOE voted unanimously to support the four project schools for the grant.
- Future Magnet Program Survey (November 2016): surveyed families living in high growth and high socioeconomic areas of the county in Western and Northern Wake County for level of interest in new programs and themes.
- School Stakeholder Survey (December 2016): surveyed staff, parents, and students at the four MSAP schools for feedback to inform theme selection.
- Survey Analysis (December 2016): M&CE team analyzed survey data and brainstormed marketable and academically rigorous magnet themes.
- Student Achievement Committee (December 2016): M&CE Programs Office presented potential themes for the grant schools to the BOE, based on survey results.
- BOE Work Session (January 2017): Magnet/CE Programs Office presented themes with BOE feedback – presented survey feedback from four proposed grant schools.
- BOE Meeting (February 2017): BOE voted unanimously to approve the four school themes.
- BOE Resolution (March 2017): BOE voted unanimously to support Voluntary Desegregation Resolution for the MSAP Grant.

Commitment to Community Engagement

Community engagement is one of the priorities of the district's strategic plan. As part of the strategic plan's focus on community engagement, a team of district staff is dedicated to strengthening parent engagement in schools. The WCPSS parent engagement team meets monthly to consider family engagement strategies for schools and ensure that all schools include engagement as part of their school improvement plan. These district staff members work closely with all schools, with a focus on Title 1 schools and schools that serve high percentages of ELLs.

In spring 2016, the WCPSS parent engagement team attended a day-long training by Karen Mapp on the Dual Capacity-Building Framework, which provides a guide on cultivating and sustaining positive partnerships with families. The strategies and practices in this framework help school staff develop strong home-school partnerships where the responsibility for students' performance is shared by both parties. The framework helps families overcome personal, cultural, and structural barriers that prevent them from productively engaging with teachers and in school activities. Subsequently, several team members attended a weeklong training that went into more depth to help schools to strengthen home-school partnerships.

WCPSS has an Office of Equity Affairs to support the districtwide commitment to eliminating racial and socioeconomic segregation. One of the goals of this team is to help all students be successful by working with families to better support their children in school. Efforts include district-wide *Family Academies* which provide free workshops and events for families at schools and community sites in Wake County. These workshops provide families with tools to support academic success and draw schools, families, and community together.

The district's strong commitment to developing collaborative and supportive relationships with parents extends to the magnets. The schools will provide opportunities for parents to expand

their role through participation in a wide variety of magnet-related parent involvement events. As discussed in the individual magnet program descriptions, each magnet school has already begun developing such activities. The schools also plan to establish a recruitment team, as described in the Desegregation Plan, and Magnet Parent Advisory Boards so parents have an opportunity to play a meaningful role in magnet planning, ongoing operations, implementation, and evaluation.

B(3): Extent to which trainings are quality, intensity, duration to lead to improvements.

As part of the district's strong commitment to identify, recruit, develop, and retain highly effective talent, the district is implementing human capital development strategies as part of its strategic plan. The three overarching strategies undertaken by the district to support human capital development are described below.

- Human Capital Transition: Transform WCPSS into an organization that embodies the attributes of communication, collaboration, creativity, and critical thinking to ensure that all employees have a significant impact on learning and teaching.
- Talent Acquisition: Attract and employ top talent throughout the organization in order to maintain a highly effective workforce that significantly impacts learning and teaching.
- Talent Management: Develop career pathways that support staff at all levels to enhance and build skills necessary for professional growth, leadership, or career advancement.

The district also provides principals with training on instructional practices as part of its commitment to human capital development. For example, principals and assistant principals have received training in 2016–17 on: modules in Digital Learning, which was provided by the Academics Team; and Capturing Kids Hearts, a program that supports educators' ability to strengthen connectedness to others by enhancing healthy bonds with their teachers and peers and growth mindset and equity, provided by The Flippen Group. Additionally, school administrators

have received professional development on the 4Cs—communication, critical thinking, collaboration, and creativity. This 4C framework supports the NC Standard Course of Study, but ensures that educators are also developing necessary soft skills of all our learners.

All four proposed Cornerstone project magnet schools will receive training, in year one of the grant, in National School Reform Faculty Critical Friends Group (CFG) training. This training will help build staff capacity in collaborative learning and structured interactions (protocols). Studies by Vescio and colleagues (2008) show that significant student gains happen when the collaboration is structured, sustained, and supports instructional discussions. CFG provides structures and protocols, described in these studies, which focus on student achievement as a result of effective teacher collaboration. CFG training will help staff create a learning environment of trust, where classmates know how to give and receive feedback most effectively, and how to use protocols/activities to help students and teachers create a culture of excellence. An expert facilitator will provide three days of quality training for all staff in each MSAP school.

In addition, each project school in years 1 and 2 of the grant cycle will receive consultation services from a magnet theme expert and professional development from the National Institute for Magnet School Leadership (NIMSL). The magnet program expert will provide project schools with an assessment of their theme implementation, an analysis of the programming strengths and challenges, recommendations for increased academic performance, school desirability, and support during the academic, programmatic, and school culture transitions to the new and significantly revised programs. NIMSL will provide the four project schools with specialized training in years 1 and 2 of the grant cycle. Experts, who have intimate knowledge of the skills and nuances that make magnet schools and the districts they function in successful, will conduct trainings at each project school for all staff. Several tools will be introduced during the

trainings to guide the project schools toward becoming national model magnet school programs.

In addition to the CFG and NIMSL trainings, each project school has planned extensive professional development initiatives to support implementation of their particular magnet programs and to assist students in making academic gains. **All staff will receive a minimum of 50 hours of training each year**, as described in the Evaluation of Cornerstone 2017. The MSAP-funded Project Coordinator in collaboration with each project school's MSAP-funded Magnet Coordinator will oversee the implementation of professional development. These school-specific professional development plans are described in the paragraphs that follow.

Bugg Elementary School: Center for Design and Computer Sciences—Teachers at Bugg will receive extensive professional development as well as ongoing coaching and job-embedded support from the MSAP funded Central Office Instructional Technology Coordinating Teacher (ITCT), Innovation Coach, and Instructional Technology Coordinating Teacher at the school to prepare them to implement the thematic curriculum. These staff members will support teachers' professional learning and classroom instruction by ensuring the successful integration of the design process and computer science curriculum. WCPSS also has an Instructional Technology and Library Media Services (ITLMS) Department that supports instructional technology in our schools. A representative from this department will be designated to specifically support Bugg. The ITLMS designee will collaborate with the MSAP funded Central Office ITCT and aforementioned coaches to map out teacher professional development in technology and assist in delivering the sessions. In addition to coaching and support received from the MSAP-funded coaches, Bugg teachers will engage in different focus areas each year: Year 1: Cultural and thematic shifts, Year 2: Project Based Learning, Year 3: Differentiated Learning, Years 4 and 5: Build capacity to ensure project sustainability.

To support increased student achievement at Bugg, the school will train on Start Making a Reader Today (SMART) program in year 1. SMART will provide early reading support to first and second grades. SMART has been cited in CPP2 as an evidence-based strategy that meets **WWC strong evidence** standards. SMART will promote increased reading fluency and comprehension—necessary skills as students transition from learning to read to reading to learn.

SMART will be organized and implemented by the MSAP funded Instructional Coach. SMART will provide site-coordinator trainings and consultation in years 1 through 5. Site coordinators will train volunteers (parents, community members, et al.) to conduct 30-minute tutoring sessions twice a week with first and second grade students. Tutors will be trained to follow strategies that focus on letter-sound relationships, predictions, reading across genres, and asking questions about core elements of the texts. The reading instruction will complement the WCPSS reading program and support children's efforts to read independently.

Computational Thinking and Design training, led by the Friday Institute for Educational Innovation, College of Education (NCSU), will occur in years 1-5 of the MSAP grant cycle. It will include on-site consulting, coaching, and professional development for all staff and support to the Instructional Technology Coordinating Teacher and Innovation Coach in designing and executing teacher coaching. Each grade level will create and execute one instructional unit per semester centered on Computational Thinking that contain elements of the design process.

Project Based Learning (PBL) training will occur in years 2-5 of the MSAP grant cycle. Professional development will focus on differentiated learning, support visits for classroom coaching, and unit planning review from the Buck Institute of Education. Bugg's MSAP-funded Innovation Coach and Instructional Technology Coordinating Teacher will continue to support grade level teams throughout years 2-5 in merging the design elements of PBL and

Computational Thinking and Design. By the end of years 2-5, each grade level will develop and implement two thematic instructional units that blend these design elements. Studies comparing learning outcomes for students taught via project-based learning (PBL) versus traditional instruction show that when implemented well, PBL increases long-term retention of content, helps students perform as well or better than traditional learners in high-stakes tests, improves problem-solving and collaboration skills, and improves students' attitudes towards learning (Strobel & van Barneveld, 2009; Walker & Leary, 2009).

All Bugg staff will participate in a unique immersion opportunity years 1-5 of the MSAP grant with business partner, Red Hat, to observe the Scrum IT Framework in action. Staff will learn about team management from Red Hat Scrum masters. Scrum has emerged from the field as a means to manage collaborative groups by assigning specific roles and to streamline project workflow and transform the approach to complex projects. The ultimate goal of this approach is to help teachers facilitate student collaborative groups in replicating Scrum during PBL units.

App development and design process training will occur in all five years of the MSAP grant cycle for Bugg staff. Crescerance will offer the staff professional development and ongoing coaching support known as MAD (Mobile App Development). With this training, each teacher at Bugg will create an app and become confident leading their students through app development and design. Ultimately, all Bugg students will work collaboratively to create an app.

Technology and computer science staff development will occur in years 1-5 of the MSAP grant for school staff. Vanbara, Inc. will provide Bugg teachers with assistance in developing lessons that integrate coding apps (e.g. Tynker, Scratch, and Bavel Blocks) into their curriculum. Additionally, local businesses specializing in computer science and training (Vanbara Inc., the Iron Yard, Code.org), along with district experts, will provide personalized training that focuses

on technology and computer sciences. Bugg staff will organize and host an EdCamp professional development conference for WCPSS teachers on technology and computer science.

In addition to professional development customized to the thematic focus of the school, Bugg faculty will benefit from districtwide professional development initiatives to support the implementation of the thematic curriculum. Bugg's MSAP-funded Innovation Coach and Instructional Technology Coordinating Teacher will participate in WCPSS media and technology conferences held each spring and fall and organized by the district's Instructional Technology Library Media Services (ITLMS) Department. Nearly 100 in-district, state, and national technology experts present over 200 sessions, providing a valuable learning experience for staff who support media and technology programs. In addition, Bugg will receive ITLMS support in digital portfolio development. Bugg teachers will receive training and resource support from the on various tools. Staff will learn how to use these tools to capture student learning digitally.

Lincoln Heights Magnet Elementary School (LHMES) and Millbrook Magnet Elementary Schools (MMES): Environmental Connections—During 2017-18, the LHMES staff will participate in professional development alongside MMES staff during Year 1 of the grant. This will allow LHMES to be positioned to fully implement the new theme at the start of the 2018-19 school year when they move into their new facility. Teachers at LHMES and MMES will engage in extensive professional development and ongoing learning to prepare them to implement the Environmental Connections curriculum. The MSAP-funded Environmental Connections Integration Specialist (ECIS) position at each school is an integral part of the success of this program. The ECIS will work with other curriculum leaders in the building (Instructional Resource Teacher [IRT], Instructional Coach, specialists, administration), as well as the Magnet

Office, to design, implement, and liaise with partners to create professional development opportunities that will be consistent in both schools.

In order to increase student achievement at LHMES and MMES, both schools will train on the Start Making a Reader Today (SMART) program in year 1. The SMART program delivery model and professional development plan will be identical to the plan described earlier for Bugg.

LHMES and MMES, in collaboration with the M&CE Office, will implement professional development through partnerships with the following agencies: NC Department of Environmental Quality/Environmental Education, NCSU, the NC Museum of Natural Sciences, the NC Wildlife Resources Commission, the North Carolina Department of Agriculture and Consumer Services, the Leopold Education Project (focused on land conservation), and the United States Environmental Protection Agency-Division of Air Quality. These resources will offer professional development to the Environmental Connections schools and provide resources that will help to grow and sustain the theme well beyond the MSAP grant funding cycle.

Professional development will begin with Project Learning Tree, provided by the NCSU College of Natural Resources, as early as this May for all staff at Millbrook, in order to kick-start their work of re-theming the school. Project Learning Tree is a national organization that delivers professional development in all 50 states through partnerships with local organizations (ours is NCSU). The professional development will help staff at LHMES and MMES learn how to integrate environmental education across grade levels and disciplines. Teachers will become adept at teaching outdoors, and will use the outdoor environment to incorporate practices in their classrooms. Workshops and online components cover topics such as: forests, wildlife, water, community planning, waste management, and energy. Professional development will be staggered and on-going; joint meetings with the schools and partners will determine best fits for

needs at the schools and schedule in order to ensure that professional development produces maximum impact. Professional development facilitated by the WCPSS academic specialists in the curriculum areas of elementary science, social studies, arts, and physical education, in conjunction with the M&CE Office, will provide structures for curriculum alignment and module development using the Understanding by Design (UbD) model – as previously described in the curriculum and instruction description of Environmental Connections.

North Carolina Museum of Natural Sciences (NCMNS) will provide professional development and ongoing support for thematic curriculum development focused on the Using the Outdoors to Teach Experiential Science (UTOTES) model. UTOTES is an elementary teacher education project of NCMNS that transforms school grounds into educational resources for hands-on learning. The two-year program includes six different teacher education workshops during the first year (including one for creating a wildlife habitat selected by the school); a summer residential program for two teachers the following June; and a follow-up workshop the second year. Topics will range from attracting butterflies, identifying trees and wildflowers, landscaping with native plants, observing/recording seasonal changes, creating wetlands on school sites and integrating the outdoors into curriculum and creating nature journals.

Also through the NCMNS, school staff will receive training on *Museums in the Schools*. This program is targeted at older elementary students (4-5th grades), but will offer enrichment opportunities that can be adapted for younger students. This program creates opportunities for inquiry-based, hands-on science learning using 13 different-themed resource boxes, created by the museum, which the school keeps. The boxes are rich in reading material, and also include specimens, replicas, puppets, and animal models. Students will develop literacy skills, scientific knowledge, and researching skills, and older students will work on presentation and public

speaking skills while presenting their information to younger classes. NCMNS also connects the wider community to several Citizen Science opportunities—a specific program in which the schools will take part is through the “Candid Critters,” NC’s statewide camera trap project.

Wildlife discovered on the school grounds of LHMES and MMES will connect the students to the environment, provide content for classroom learning, connect the schools with partners, and potentially to schools in other national or international locations doing the same project.

Another professional development opportunity that will grow key staff within each school is the NC Environmental Education Certification Program. This rigorous, self-paced program

such as the following national programs with local facilitators: Project Wet, Project Wild, Project Food, Land, and People, as well as the Leopold Education Project, Project Learning Tree (PLT), and the Greenschools program under PLT. A wheel of implementation of these programs, to meet the timing needs of the school, will be created through the collaboration of the Environmental Connections Integration Specialist, the M&CE Office, the partners and development providers, and the curriculum specialists and administrators at each school.

Additionally, these schools have already unofficially designated themselves “Sister Schools.” A plan for mutual sharing of ideas and resources, such as google hangouts for students within E-Inquiry specials, Expedition electives, Music, Art, PE specials, and core classrooms will be created to leverage the technological aspects of how scientists in the “real world” collaborate to share their findings, data, and “publish” their work to a wider audience. These virtual hangouts

will leverage not only the partnership experts, but will allow schools and students to build their knowledge through connections with environmental experts throughout the nation and the world.

As noted earlier, a new facility for LHMES is currently under construction. LHMES will be serving magnet students beginning in the 2018-19 school year. Therefore, professional development at this school will be on a slightly delayed timeline than that of MMES. Additionally, there will be costs incurred for these developments, but many of the resources that will be used for professional development for these two schools are state- or university-connected and are either no-cost or are a minimum cost to the school and thus contribute to the ease of sustaining this magnet program after MSAP funding ends. These resources will empower teachers to implement instructional strategies with students that will advance academic achievement for all and represent a broad range of professional expertise and partnerships.

Southeast Raleigh University Connections: School of Design, Arts, and Engineering Magnet High School— As noted in the CPP 2 narrative, SRMHS will implement the evidence-based Reading Apprenticeship Academic Literacy (RAAL) program. The professional development needed to support the implementation of RAAL classes in year 1 will occur this summer 2017, prior to the grant award. The RAAL class teachers will develop a repertoire of evidence-based instructional strategies to aid students in their ability to construct text-based understanding and arguments and to be able to comprehensibly share what they are learning. RAAL teachers will learn to focus on students as reading apprentices, to engage students and help them recognize their metacognition, and to create opportunities for collaboration, creativity, critical thinking, and communication. Studies indicate that students who receive this instruction are far better prepared to read complex texts. Teachers will learn to select and present texts to provide multiple entry points for diverse learners, and progressively build to higher levels of complexity and challenge.

Students with IEPs have been included in multiple studies of Reading Apprenticeship instruction and often make greater gains in RAAL classrooms than their non-labeled peers. ELLs make gains in RAAL classes because the program addresses learner dispositions as well as literacy. Teachers are primed to build from students' strengths, to encourage collaboration and community, and to "normalize" the struggle that comes with effortful reading—for all students.

Complementing RAAL, starting in the summer of 2018, in year 1 of the grant cycle, all staff at SRMHS will be trained on Reading Apprenticeship Improving Secondary Education (RAISE). This training will be organized by the MSAP funded Instructional Coach. This cross-disciplinary approach is designed to strengthen teachers as reading experts, specifically in their respective content areas. RAISE involves extensive reading, collaborative sense-making, and teaching of meta-cognitive skills such as prediction, summarization, graphic organizers, and clarification. RAISE is an academic literacy approach. With the SRMHS theme being University Connections, increased student interaction with advanced disciplinary text is expected. The integration of RAAL and RAISE in the University Connections theme will help students develop the strong academic literacy skills that are critical to their career or college success.

WCPSS will provide training in Understanding by Design (UbD) to all SRMHS staff during the first two years of the MSAP grant. Then, all SRMHS staff will receive MSAP-funded PBL training in years 3-5 of the grant, provided by a contracted PBL consultant. UbD is the framework through which best-practice learning occurs, by starting with standards and what is being assessed. PBL is one of the many best practices and tools through which the instructor facilitates learning. PBL training will assist staff in developing PBL units, aligned with the core curriculum. In addition, select staff will attend the Buck Institute for Education PBL Training Conferences to support PBL module development and integration in the classroom.

Additionally, the staff at SRMHS will receive specialized professional development tailored to the content of the college and career pathway focus. All specialized trainings will be organized by the grant-funded University Connections Liaison and the grant-funded Magnet Coordinator. Trainings will include attending workshops with local organizations and universities such as NC State College of Design Educator Workshop and NC Museum of Art Workshops; other training will involve attending professional conferences such as the NC Music Educators' Conference.

With MSAP funding, SRMHS will also create a professional development opportunity unique to the school and in support of the magnet theme. A Professional Development Institute will be offered each year of the MSAP grant for all staff. This Institute will open with a keynote speaker followed by break-out sessions for teachers to select from covering multiple topics. The structure of choosing workshops will allow staff to select the professional development that will best meet their instructional needs. Workshop topics will include the design process, magnet marketing, arts integration, technology integration, and building university connections. It will also include professional development as well as ongoing coaching and job-embedded support from the MSAP-funded Central Office Instructional Technology Coordinating Teacher. This staff member will map out training specific to the technology needs of teachers at SRMHS and assist in delivering workshops at the Professional Development Institute.

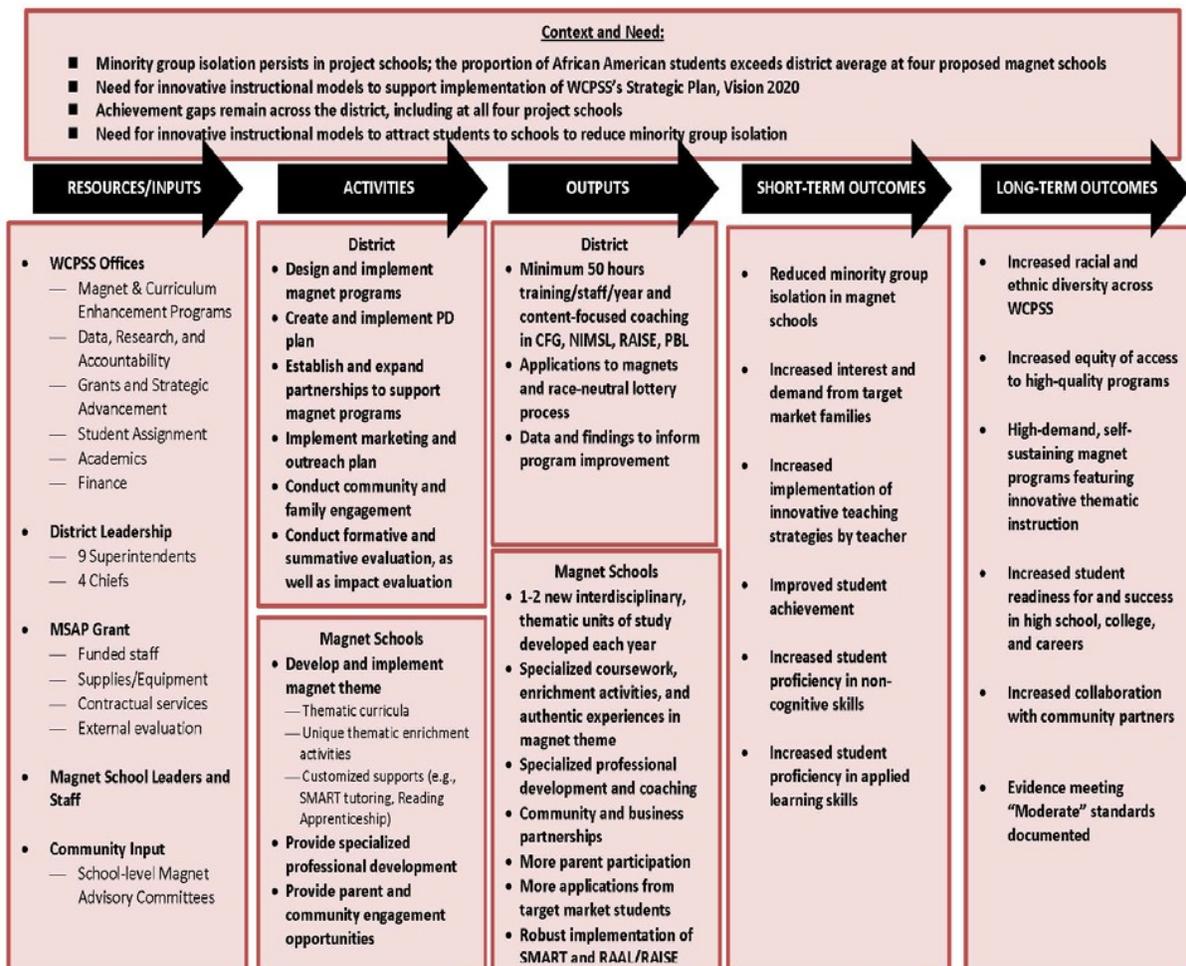
Additional training will be offered annually with MSAP funds to teachers offering courses in the College and Career Pathway for Engineering, Math, and Sciences as well as the College and Career Pathway for Design. The Engineering Place at NCSU is a K-12 resource for teachers and students alike to explore engineering. As one of the SRMHS university partners, the NC State Engineering Place will have an integral role in the conceptualization of these College and Career pathways. The Engineering Place Director will facilitate a design process training opportunity

each year to support theme implementation. This workshop will provide a structure and process that allows students to effectively consider and solve real-life problems.

B(4): Extent to which project is supported by strong theory.

A logic model (see Appendix F) found in Image 1 below shows the critical resources, activities, outputs, and outcomes identified as part of the theory of action guiding the Cornerstone 2017 MSAP grant proposal.

Image 1: Cornerstone 2017 Logic Model



C. QUALITY OF MANAGEMENT PLAN

The management plan provides an efficient and effective framework for administration of the project centrally and within each school. This section presents evidence the plan will be well managed by a team of district- and school-level leaders and staff who are highly qualified to carry out all aspects of the project. The plan takes into account: the landscape and key characteristics of Wake County and WCPSS; the mission, goals, and challenges facing WCPSS; and the goals, objectives, and yearly benchmarks that have been established to determine progress toward achieving the MSAP goals and project objectives. A timeline of management activities is presented, including detailed action steps for successful project implementation.

C(1): Secretary considers adequacy of plan to achieve objectives of the proposed project on time, within budget, including defined responsibilities, timelines, and milestones.

WCPSS ensures proper and efficient administration of the Cornerstone project by developing and implementing a carefully-constructed management plan with the following components:

- Leadership: the MSAP Project Director, with support from a team of district- and school-level leaders, will ensure that the proposed project is completed within the specifications of scope, schedule, and costs detailed in the management plan.
- Scope: specific statement as to what has been agreed to be performed/achieved in the project.
- Schedule: a timeline detailing when each major project component will be implemented.
- Fiscal Management: The efficient and effective management of the personnel and other than personnel resources needed to carry out the project.

Leadership

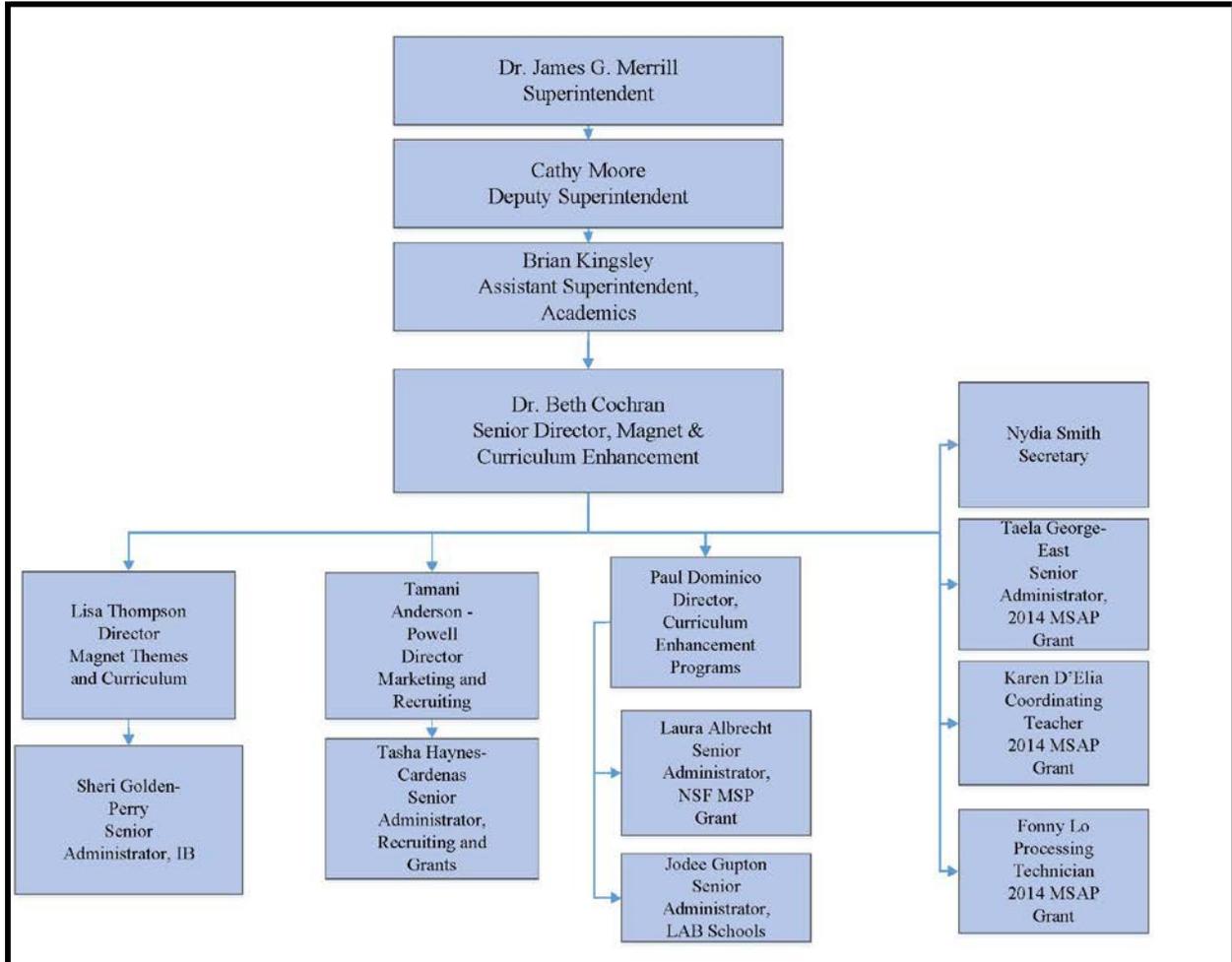
- An experienced and highly qualified project director with prior experience directing MSAP grants and (Dr. Beth Cochran, Senior Director of Magnet & Curriculum Enhancement)

reports directly to the Assistant Superintendent of Academics and Deputy Superintendent;

- A locally-funded Magnet & Curriculum Enhancement Programs Office dedicated to development and enhancement of district magnet programs (see Image 2);
- A comprehensive, district-wide leadership infrastructure with central administrators and district superintendents who provide guidance to overall operations and site-based leadership;
- A site-based leadership structure with principals, leadership teams, and magnet coordinators ensuring operations are tailored to students, school and marketing needs; and
- The support of parents and other stakeholder groups, including community organizations (e.g., Wake Education Partnership, Raleigh Chamber of Commerce), university partners, parent teacher associations (PTA) and principals (see Appendix C for letters of support).

Dr. Beth Cochran, the proposed project director, will devote 15 percent of her time in-kind as the Senior Director of M&CE Programs to implementing the grant (a summary of Dr. Cochran's qualifications and experience is provided in the Quality of Personnel section, and her résumé is included in Appendix B). Dr. Cochran will be joined by others to lead the effort, including staff from the Office of M&CE (e.g., Director of Magnet Themes and Curriculum, Director of Magnet Marketing and Research, and Senior Administrator for Magnet Recruitment), who, combined, have over 100 years of experience with the implementation of magnet programs. These M&CE staff will provide curriculum development support, assistance with theme implementation, consultation on professional development, and expertise in marketing and recruiting for the project schools.

Image 2: WCPSS Magnet and Curriculum Enhancement Program Office



In addition, other members of district leadership representing the Offices of Data, Research, & Accountability; Communications; Facilities, Grants & Strategic Advancement; Student Assignment; Academics; and Finance will be integral to the management of the magnet grant. Staff in these departments have been involved in the administration and oversight of federal grants that have been awarded to WCPSS, including previous MSAP grants as well as grants for the Teacher Incentive Fund, Title I School Improvement program, and Race to the Top.

WCPSS is a large school district with four chiefs under the superintendent: **Operations** (Budget, Accounting, Human Resources, Technology, Facilities, Building, Child Nutrition Services); **Communications** (Family and Public Engagement); **School Performance** (Area

Superintendents, Academics, Magnet and Curriculum Enhancement Programs, Student Assignment); and **Chief of Staff** (Grants and Strategic Planning). Nine area superintendents are currently responsible for supervising the operations of approximately 21 elementary, middle, and high schools, each divided regionally. Individuals representing these areas will work closely with school leaders to implement the project. One of the area superintendents specifically supports high need elementary schools, a program known as the Elementary Support Model (ESM). All three elementary schools are Title I but only Bugg and Lincoln Heights are ESM.

Finally, site-based leaders at each of the four proposed magnet schools will manage and oversee the magnet programs. At each school, the principal, leadership team, and magnet coordinator will ensure operations are tailored to school and student needs, and implemented as planned. Each school will also have an Advisory Board consisting of parents, business partners, school personnel, and other stakeholders to help ensure the success of the new or revised theme.

Scope

The management plan seeks to achieve three WCPSS project-level objectives with the MSAP initiative. These objectives are directly aligned with the purposes/goals of MSAP and the Government Performance and Results Act (GPRA) measures that have been established by the USDOE for the program. This section lists the three objectives (and how each is aligned with the MSAP program purposes and goals) 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 Quality of Project Design sections; plans to measure the extent to which the objectives are met are described in the Quality of Project Evaluation. Following this discussion is a detailed project implementation timeline that includes key activities, responsible parties, and target dates.

Project Objective 1: Reduce or eliminate minority group isolation among Hispanic and

African American students in proposed magnet schools. This goal is aligned with the first purpose of MSAP to support the *elimination, reduction, or prevention of MGI (minority group isolation) in elementary and secondary schools with substantial proportions of minority students.*

As noted in the Desegregation section, all four proposed magnet schools meet the USDOE definition of MGI. All four of the proposed Cornerstone schools will **reduce** MGI among African American students and one school will additionally focus efforts on **reducing** MGI among Hispanic students. The MSAP grant will help **reduce** the isolation of these racial groups by attracting a new and more racially diverse population of students to the schools through the implementation of a multifaceted approach:

- Creation of unique magnet themes (Center for Environmental Connections, Center for Design & Computer Sciences, and University Connections: Design, Art, & Engineering themes) that will be attractive to students of diverse racial, ethnic, and socioeconomic backgrounds and academic needs and interests *and* that are not available to other public schools in the same area of the district;
- A strategic and targeted outreach and recruitment plan to be carried out by magnet program staff and each magnet school in its local and targeted market area neighborhoods;
- Race-neutral student selection process not tied to student academic performance that will ensure equitable access for all students to the magnet programs; and
- Thorough consideration of three key factors when selecting magnet students to schools: 1) socioeconomic status of the area where the student resides, 2) projected overall socioeconomic status of the school to which that student is assigned for the next school year, and 3) crowding level of the student's assigned school.

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. Goal 2 supports the MSAP purposes for the *development, implementation, and expansion of magnet school programs that will assist local educational agencies (LEAs) in achieving systemic reforms and providing all students the opportunity to meet challenging state academic standards.*

As described in the Quality of Project Design, the designs of the four proposed magnet schools have been carefully aligned with key components of the district's strategic vision, mission, goal, and core beliefs as outlined in the district's Strategic Plan, Vision 2020. In order to achieve the goal laid out in Vision 2020 that WCPSS will graduate 95% of its students, the district is implementing several key initiatives and strategies to increase student performance and close achievement gaps. These initiatives, which are described in the Quality of Project Design, include: MTSS (Multi-Tiered Systems of Support), Dynamic Learning Experiences, Cultural Proficiency, the 4Cs, Learner Agency, Digital Learning, UBD, and Growth Mindset.

Focusing on improving the academic rigor and supports for struggling learners is of paramount importance to the four proposed magnet schools, which have not yet been successful in helping all students meet state learning standards. As of spring 2016, less than 50% of students attending each of the proposed magnet elementary schools met or exceeded the state learning standards in ELA and math. Similarly, fewer than half of the students attending the proposed magnet high school performed at or above grade level on the 2016 state tests in English and math. Further, ELA and math proficiency rates were substantially lower than district averages.

The magnet programs will provide new opportunities for all students to meet and exceed NC's *Standard Course of Study* content standards by providing a rigorous and enriched theme-based magnet curriculum that will be integrated across core subject areas. The magnet curricula are designed to support, deepen, and expand the curricular frameworks that have been put into

place statewide (described in the Quality of Project Design section) and will be fully aligned with North Carolina's *Standard Course of Study* content standards. In addition, plans for the proposed magnet programs will supplement the instructional programs at the schools by incorporating innovative, research-based, and evidence-based instructional approaches to help teachers better address the learning needs of *all* students, including students with special needs, such as ELLs and students with disabilities. The specific evidence-based literacy instructional programs that will be implemented are described in both CPP2 and Project Design sections.

Project Objective 3: Build the capacity within the magnet schools to provide rigorous, theme-based instructional programs that will help promote choice and diversity in the WCPSS schools. Goal 4 supports two purposes of the MSAP: *improving the capacity of LEAs, including through PD, to continue operating magnet schools at high performance after federal funding for the magnet schools is terminated and the development and design of innovative educational methods and practices that promote diversity and increase choices in public schools.*

WCPSS has incorporated intentional efforts into the project design to increase the capacity of the school leaders, staff, and community at the four proposed sites to implement high-quality magnet programs and to sustain them after federal funding ends. The district 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 to implement and expand the programs after the federal funding period.

The district will work with NIMSL (National Institute for Magnet School Leadership) to train all four schools in what it means to be a successful magnet. The district will also contract with a national theme consultant to help schools establish a strong foundation for initial theme implementation. Further, staff at project schools will receive professional development on **WWC**

strong evidence strategies (SMART – Bugg, Lincoln Heights, and Millbrook; and Reading Apprenticeship – Southeast Raleigh) detailed in CPP2 and Project Design.

Schedule

Specific management strategies and a timeline of action steps that are aligned with project objectives and ensure effective and efficient implementation are noted in the logic model found in the Quality of Project Design section, along with annual benchmark measures. Key components of the project timeline include the following:

- **Pre-award activities** occurring prior to MSAP funding, including ongoing thematic planning, cementing partnerships, deepening buy-in, marketing and recruitment, student applications, and lottery process.
- **Engagement of school-based staff in project planning:** Staff at the four proposed magnet schools were invited to be part of the planning process of determining their school’s new or significantly revised theme. Many staff were deeply involved in building out the programming associated with theme development. Grant “design teams” were formed at each Cornerstone school to contribute theme ideas and participate in program and budget development. Recognizing that the implementation of a new theme or significantly revised theme brings much support and many resources but can also bring additional requirements all staff may not embrace, the district has given each teacher an opportunity to opt in or opt out by requesting placement at another school should they wish. The staff that choose to remain understand the shift in culture and other commitments (e.g., professional development and implementation of a new thematic curriculum) that accompany such a change.
- **School and classroom enhancements** will begin in year 1 and will continue throughout the grant cycle in coordination with the district’s capital improvement plan. Examples of such

enhancements include signage, lobby entrance designs, technology, furniture needed to create collaborative and dynamic learning environments (e.g., arts labs, design studios), murals to reflect the magnet themes, and exterior enhancements to expand learning beyond the walls of the school (e.g., additions and enhancements to outdoor learning laboratories at Lincoln Heights and Millbrook). Enhancements will also be made to classrooms to support themed curriculum and other learning environments to promote student collaboration.

- Planning for **implementation of a new or significantly revised magnet theme** will continue during the pre-award period. Equipment and supplies will be ordered and staff development scheduled to meet the specific needs of each school. School-based training will be facilitated by organizations whose pedagogy aligns with best practices and evaluation feedback will guide continuous improvement.

Following the same implementation **timeline** each year will ensure consistent management of the project. An overview of the timeline, including key milestones and responsible individuals, is presented below. The timeline follows the district's July to June fiscal calendar.

- Facilitate school-based planning meetings (Project Director, Principals, school teams, and M&CE staff): Oct 2016-Mar 2017
- Make award announcements and schedule meetings with school staff to discuss implementation, goals, and benchmarks (Project Director, M&CE staff): Sep-Oct 2017
- Post MSAP-funded positions and hire staff (Project Director, Principals): Oct-Dec 2017
- Order supplies and equipment needed for theme implementation (Grant Coordinator, Magnet Coordinators, Budget Technician): Oct 2017-Jun 2018 in year 1 and Jul-Jun in years 2-5

- Address federal reporting requirements, including completion of the Annual Performance Report (Project Director, Grant Coordinator, Evaluator, Principals, Magnet Coordinators, school staff): May-Aug 2018 in year 1 and Dec-Jan and May-Aug in years 2-5
- Implement enhancements to school facilities (Grant Coordinator, Facility Planner, Principals, and Magnet Coordinators): Oct 2017-Jun 2018 in year 1 and Jul-Jun in years 2-5
- Establish and convene a project school level Advisory Board consisting of parents, business partners, and school personnel to provide ongoing input on the theme implementation: Jun 2017-Jun 2018 in year 1 and Jul-Jun in years 2-5
- Plan and coordinate professional development (Grant Coordinator, Principals, Instructional Technology Teachers, Magnet Coordinators): Oct 2017-Jun 2018 in year 1 and Jul-Jun in years 2-5
- Establish and maintain project partnerships (Project Director, Grant Coordinator, Principals, and Magnet Coordinators): Oct 2017-Jun 2018 in year 1 and Jul-Jun in years 2-5
- Develop and revise thematic curricula that are designed to meet the learning needs of all students (Grant Coordinator, Director of Magnet Curriculum & Themes, Magnet Coordinators): Oct 2017-Jun 2018 in year 1 and Jul-Jun in years 2-5
- Collect and track magnet applications and conduct student selection process (Student Assignment): Dec-Mar in years 1-5
- Establish and convene a project school-level Magnet Recruitment Team that will focus on marketing and recruiting topics (Grant Coordinator, Director of Magnet Marketing and Recruitment, Senior Administrator of Magnet Recruitment & Grants, Magnet Coordinators, principals, staff, and parents): Oct 2017-Jun 2018 in year 1 and Jul-Jun in years 2-5

- Administer and review annual Magnet Application Survey to determine impact of magnet marketing and recruitment (Grant Coordinator, Director of Magnet Marketing and Recruitment, Senior Administrator of Magnet Recruitment & Grants, Magnet Coordinators, principals, staff, and parents): Oct 2017-Jun 2018 in year 1 and Jul-Jun in years 2-5
- Finalize evaluation design, develop instruments, and collect data (Project Director, Grant Coordinator, Evaluator, Senior Director of Data and Accountability): Oct 2017-Jun 2018 in year 1 and Jul-Jun in years 2-5
- Engage in ongoing monitoring of implementation, including mid-year and annual reviews of performance measures and grant implementation, meeting regularly with the Recruitment Teams and quarterly with Project Director and Principals (Project Director, Grant Coordinator, Magnet Coordinators): Oct 2017-Jun 2018 in year 1 and Jul-Jun in years 2-5

Fiscal Management

Per district Board Policy 8000 Fiscal Management must adhere to the following:

“As trustee of county, state, federal, and other miscellaneous funds allocated for use in local public education, the Board has the responsibility to protect the funds and use them wisely. The Board and the administration shall:

- A. Encourage advance planning and utilize best possible budget process and procedures as an essential element of program and financial planning and identifying district needs and priorities.
- B. Explore all practical and legal sources of income.
- C. Utilize funds in a manner designed to achieve the greatest educational returns.
- D. Develop and maintain efficient and effective financial accounting and reporting procedures.

E. Be cost-efficient and utilize resources in the most effective manner and continue energy conservation efforts.”

Legal Reference: G.S. 115C, Article 31 Adopted: August 9, 1976

Revised: September 20, 1982; April 18, 1988; and June 15, 1992 Reviewed: November 3, 2009

The district’s fiscal management policy will apply to the administration of the MSAP funds. Additionally, Academic Services under the Academic Advancement Division has a Fiscal Administrator directly assigned to review all grant purchases and ensure alignment of resources to the approved budget application. A Fiscal Director that supports the Deputy Superintendent of the Academic Advancement Division reviews transactions at \$100,000; including the establishment of the beginning of the year grant funds in alignment with the state reporting chart structure and the approved MSAP grant budget application. The WCPSS Fiscal Director reviews and approves all contracts and purchase of goods at \$100,000 and reviews the Board Precs (i.e., items submitted for review and approval) for contracts of \$100,000 or more to ensure compliance and fiscal accountability of grant resources prior to obtaining formal approval from the Board of Education. The Fiscal Administrator and Fiscal Director report to the district Finance Officer to maintain independent review of financial transactions.

Undergirding the other elements of a successful management plan is the use of resources needed to implement the plan within the proposed scope and timeline. The Cornerstone proposed budget is reasonable to achieve project objectives and cost-effective for the number of students to be served. The proposed magnet programs are school-wide and will impact all students enrolled in each of the four schools; therefore, as shown in Table 9, the project will directly affect over 3,000 students per year across the schools.

Table 9: Projected Student Impact of Cornerstone

School	Students Affected				
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Bugg	467	469	474	479	489
Lincoln Heights	470	472	477	482	492
Millbrook	663	666	673	679	693
Southeast Raleigh	1540	1541	1551	1594	1637
Total Number of Students Impacted Per Year	3140	3148	3175	3234	3311

Considering the MSAP funding being sought by WCPSS, a per-pupil cost of \$1401 per student is proposed for year 1. This will decrease to approximately \$622 per pupil by the fifth year of the project. By comparison, WCPSS receives \$9,073 per pupil annually from local, state, and federal sources other than MSAP, excluding child nutrition and the building program. The annual per-pupil costs are consistent with national standards for start-up and operational costs.

Furthermore, it should be noted that the proposed schools were determined in collaboration with the Office of Student Assignment and Transportation Department with final approval by the Wake County BOE. All four project schools will receive transportation from the district. When a school is designated a magnet, regardless of MSAP funding, WCPSS makes provisions within budgetary priorities for transportation to the newly designated and existing magnet schools. WCPSS covers 864 square miles and many of the district’s magnet themes, including the four included in this application, are open to students from any part of the district. Transportation is a significant investment and due to the importance the district places upon magnet schools, WCPSS prioritizes the costs associated within the annual budgeting process.

The Cornerstone Management Plan has been designed to bring together students from diverse socioeconomic, ethnic, and racial backgrounds and achievement levels to achieve MSAP purposes. Decisions regarding inclusion of items in the grant were rooted in the three goals of reducing minority group isolation, building staff capacity, and raising achievement. Final school budgets are summarized in the Budget Narrative and reflect reasonable distribution across sites, as aligned with these factors: 1) the extent of the significant revision or new program theme; 2) the educational level of the school (i.e., elementary or high school); 3) the number of students served; 4) the complexity of proposed objectives; and 5) personnel, training, and equipment requirements needed to ensure successful implementation of theme or programmatic strands.

Proper and efficient administration of MSAP funding is assured by district staff's experience with and proficiency in federal rules and regulations (e.g., MSAP guidelines, Uniform Guidance, and EDGAR); however, as shown in Table 1 in the Need for Assistance section, only 16% of the total project budget is directed toward central office coordination and support while the remainder of the budget is dedicated to support of project implementation at the four sites. Personnel comprise 50% of the budget, followed by supplies. This is reasonable for purposes of the grant, as these categories most directly affect students and impact student achievement.

Lincoln Heights is currently undergoing a comprehensive school renovation. While a portion has been done, the full-scale project will not be completed until the start of the 2018-19 school year. Once complete, the renovation will expand the school's overall capacity, thereby increasing seats for magnet applications. Recruiting will begin in the 2017-18 school year with the first round of magnet students attending Lincoln Heights in 2018-19. As a result of the ongoing renovation, 2017-18 will be used as a planning period for Lincoln Heights with magnet implementation to coincide with the grand opening of the renovated facility in 2018-19.

During 2017-18, staffing and professional development will begin at Lincoln Heights. Because the Millbrook Elementary theme, Environmental Connections, is the same, Lincoln Heights will benefit from lessons learned by Millbrook during this planning year. The Lincoln Heights staff will participate alongside Millbrook staff during Year 1 of the grant. Lincoln Heights (southern) and Millbrook (northern) split the district so that the whole district has access to the environmental connections theme. This will allow Lincoln Heights to be positioned to fully implement the new theme at the start of the 2018-19 school year and make for a much smoother transition as a newly designated magnet school. As a result of moving into a state of the art, renovated facility, Lincoln Heights requires fewer supplies/materials than Millbrook, even though both have the same theme. The planning year budget for Lincoln Heights is \$493,045 but increases to \$746,214 in Year 2 when full implementation begins.

(C)(2): Ensure a diversity of perspectives are brought to bear in operation project

The Office of M&CE Programs will establish school-based Magnet Recruitment Team comprised of parents, community stakeholders, project partners, and school-based staff. The teams will support project efforts to recruit students and broadcast the magnet themes to the community. Each school will have a Magnet Advisory Board consisting of business partners, parents, and school staff to provide ongoing input on theme implementation and support. The district will also implement additional strategies to ensure that a diverse set of stakeholder perspectives is welcomed and considered in the development and implementation of the magnet programs at each school. In particular, project leadership will devise and implement strategies and mechanisms to ensure that parents' feedback is gathered systematically and frequently and that parents have opportunities to provide formative feedback about magnet implementation. Examples of such activities include: surveying parents, stakeholders, and partners to gather

feedback on project implementation; conducting school “coffees” or “chats” with parents, stakeholders, and partners; inviting parents, stakeholders, and partners to participate on school-based committees and task forces; and encouraging parents to participate on the school improvement planning team and parent-teacher association (PTA). Below are a list of some members of the each school’s advisory boards.

- Bugg ES: Red Hat, Code.Org, SAS, Crescerance, Vanbara, Apple, and Raleigh Iron Yard
- Lincoln Heights ES and Millbrook ES: NCSU College of Agriculture & Life Sciences – Forestry and Cooperative Extension 4H; NCSU College of Education – Elementary Science; NCSU Departments of Crop and Soil Science, Entomology, Plant Pathology, and Horticulture Science; and the NC Department of Environmental Quality – Office of Education and Public Affairs.
- Southeast Raleigh HS: Duke University, NC Central University School of Biological & Biomedical Sciences, NCSU College of Design, NCSU College of Education, NCSU College of Engineering, NCSU College of Humanities and Social Science, Meredith College, and Peace University.

D. QUALITY OF PERSONNEL

The overall responsibility for effective operation of magnet programs ultimately rests with the WCPSS superintendent. **Dr. James Merrill, Superintendent for the Wake County Public School System**, who was appointed to this role by the school board in June of 2013, after the WCPSS BOE solicited feedback from students, parents, employees, and community stakeholders on the qualities they desired in a Superintendent. An appreciation for diversity and support of magnet programs was a priority. Dr. Merrill brings a tremendous amount of experience and expertise to his role as superintendent of WCPSS. He started his 16-year career in WCPSS as an English teacher, and his last position before leaving to assume his first superintendency was WCPSS Associate Superintendent of Administration and Finance. He then served six years as superintendent of the Alamance-Burlington School System in North Carolina before becoming the superintendent of the Virginia Beach City Public Schools, a position he held for seven years before coming back to Wake County. Dr. Merrill has the honor of being the 2005 and 2016 North Carolina Superintendent of the Year and the 2013 Virginia Superintendent of the Year. Additionally, in December 2016, the American Association of School Administrators recognized Dr. Merrill as one of four finalists for the National Superintendent of the Year.

Other Central Service staff integral to implementation include the Deputy Superintendent for Academic Advancement, Area Superintendents for each MSAP school, the Assistant Superintendent for Academics, the Assistant Superintendent of Equity Affairs, the Assistant Superintendent of Data and Accountability, the Senior Director of Student Assignment, the Senior Director for the Office of Grants, the Senior Directors of Elementary and High School Programs and the Fiscal Director of Financial Services. Their leadership is critical to project success and résumés supporting their qualifications are provided in Appendix B.

Other personnel important to implementation include M&CE Program staff and Cornerstone principals. These educators have spent their careers leading, teaching, and working with magnet programs, both locally and at the national level, with over 100 years combined experience with desegregation efforts. These personnel represent the diversity of the students they support, including: males and females, seasoned and newer educators, African-American and white staff, as well as staff that have worked in rural or impoverished urban settings (see Appendix B).

D(1)(a): The project director is qualified to manage the project

Dr. Beth Cochran, Senior Director of Magnet & Curriculum Enhancement Programs (district-funded) has devoted most of her career to magnet schools. She has had 19 years of experience running magnet programs in schools where one of her main responsibilities was to implement strategies to desegregate schools. She also has extensive experience working with minority populations. As Project Director, she will devote 15% of her time to the project. Dr. Cochran is presently overseeing the 2014-17 MSAP grant (WCPSS received the grant one year late so we are on a 2014-17 cycle instead of 2013-16 cycle), which includes significant fiscal and supervisory experience with budgets in excess of \$10 million. This experience and the district's previous experience implementing MSAP grants help to inform the amount of time she will need to spend on the project. She also has seven staff working under her to support the grant schools.

Other qualifications to manage the grant include Dr. Cochran's five years of experience as a middle school Gifted and Talented/Academically & Intellectually Gifted magnet school principal where she was a Principal of the Year Finalist in 2003 and seven years previous experience as a magnet high school principal at a Gifted & Talented/International Baccalaureate (IB) school. At both schools, Dr. Cochran helped develop new magnet curriculum.

Additionally, Dr. Cochran served as an assistant principal at a school that was transitioning to

IB where she had to immerse herself in knowledge about the IB curriculum and where she was awarded the Assistant Principal of the Year for WCPSS in 1999. Dr. Cochran has worked for Magnet Schools of America as a consultant to review magnet programs and curriculum in several districts across the country. Most recently, Dr. Cochran participated in extensive training on growth mindset (Dweck, 2006); cultural proficiency to reflect on beliefs about culturally relevant instruction; learner agency which personalizes student learning; and social emotional learning to help students develop self-management, self-awareness, responsible decision making and social awareness including empathy and social justice.

D(1)(b): Other key personnel are qualified to manage the project

While the majority of the positions associated with the Cornerstone 2017 project are school-based, there will be grant and district-funded central office staff crucial to grant implementation.

CENTRAL SERVICES PERSONNEL: The Grant Coordinator Senior Administrator

(grant-funded) will supervise project planning and implementation. This individual will report directly to Dr. Cochran, Cornerstone Project Director. One hundred percent of this individual's full-time (12 months) position will be devoted to assisting Dr. Cochran with managing the budget, providing leadership to MSAP schools, overseeing training for schools, communicating with school administrators and supporting marketing, project evaluation, and report preparation.

The individual hired will have a background in desegregation and curriculum development along with experience implementing a MSAP grant-funded program and possess a teaching license. Other qualifications sought will include: teaching or school administration, budget management, teacher training, and educational applications of technology (see the job description in Appendix B).

The infusion of technology is essential to the implementation and revision of magnet themes for the four project schools. Professional development and daily support will be needed to assist project school staff to effectively integrate technology in meaningful ways that prepare students with the tools and skills necessary to navigate a 21st century world, promote STEM principles and innovation and enhance classroom learning. Staff at all four Cornerstone schools will need the technological support that one full-time **Coordinating Teacher Instructional Technology (grant-funded)** will provide. This Instructional Technology Teacher will mentor and coach school-based personnel so that each school implements the new technologies in ways that support the schools' magnet themes and students' academic achievement. He/she will help order, set-up, and inventory technology, and then train students and staff on the technologies' capabilities. Furthermore, their close work with the schools will enable them to communicate needs and successful practices to district personnel. This position will be based at the district level and report directly to Dr. Cochran, the Project Director, so that she can direct their time as needed to project schools in times of greatest demand for theme implementation. Finally, the Coordinating Teacher Instructional Technology will attend conferences and workshops, as well as district technology meetings, in order to bring back best practices to the grant schools (see Appendix B for the job description). Qualifications for the Coordinating Teacher Instructional Technology include a bachelor's degree, extensive knowledge of state and national standards for curriculum including instructional technology and considerable knowledge of the implementation of technology in classroom settings.

The accurate fiscal accounting of all grant transactions is a continuous process and will be the primary responsibility of the **Grant Budget Analyst (grant-funded)**. The Budget Technician will devote 100% of her/his time to the Cornerstone project and will report to Dr.

Cochran. This position will work closely with the WCPSS Budget, Accounting, and Purchasing in order to maintain project quality and compliance with all federal, state and district guidelines. Job duties will include report preparation, processing contracts, regular communicating with Dr. Cochran and MSAP staff on current or pending expenditures (see Appendix B job description).

Lisa Thompson, Director of Magnet Themes and Curriculum (district-funded), reports to Dr. Cochran and will play an integral role in theme implementation for all project schools. Ms. Thompson currently oversees the magnet site coordinators at all magnet schools, and her expertise in magnet theme implementation and curricula, work with minority populations, and in her roles as a teacher, assistant principal, magnet site coordinator, and STEM coordinator at magnet and STEM schools for 14 years, will be critical in helping the district meet expectations of the grant. Ms. Thompson has much experience aligning, reviewing, researching, developing, and writing elective curriculum. This experience will be critical as the Cornerstone schools create and write curriculum for the new or revised themes. She will guide the Grant Coordinator in coordinating staff development and curriculum writing and assist in implementation. She will be involved in all grant activities and assume oversight of the program in project schools when Federal funding ends. Approximately 20% of her time will be devoted to the MSAP.

Tamani Anderson Powell, Director of Magnet Marketing and Research (district-funded), will devote 25-30% of her time to the Project in Years 1 and 2 to get the four schools established and then 20-25% in Years 3-5. In her position she develops relationships with local business and community agencies, creates marketing materials, conducts presentations, creates school-specific marketing plans, researches marketing venues, conducts magnet seminars for principals and teachers, uses social media to advertise school events, contracts with marketing firms to review our marketing plan and works with Human Resources to market magnet schools

to prospective teachers. She will work with each full-time MSAP school magnet coordinator to strengthen the school's reputation, curb appeal, and overall attractiveness. Ms. Anderson-Powell has been involved with at least four previous MSAP grants in WCPSS and has over 20 years of experience working to implement strategies to desegregate schools.

Tasha Haynes-Cardenas, Senior Administrator of Magnet Schools Recruitment and Grants Development (district-funded), will devote 25-30% of her time to the Project in Years 1 and 2 to get the four schools established and then 20-25% in Years 3-5. In her position, she researches grants for magnets, coordinates M&CE MSAP grant writing, designs strategies, and implements marketing and recruitment campaigns for magnets. Her work requires collaboration with the Director of Magnet Marketing and Research, Student Assignment, Data, Research & Accountability, and each MSAP full-time magnet coordinator on target recruitment, application analysis, and survey deployment. She has been involved in at least four previous WCPSS MSAP grants and is a key writer of this MSAP proposal. In addition to her experience with MSAP, she has spent the majority of her over 20 year career working to integrate schools in NC.

Paul Domenico, Director of Curriculum Enhancement Programs (district-funded), will devote 10% of his time to the Project. Mr. Domenico leads the WCPSS STEM Schools Collaborative Network. In his position, he will work with the four grant schools to secure business partnerships in focus areas related to each school's theme. In addition, he leads the STEM Advisory Board consisting of business, community college, university, and community partners to help shape the development of the Collaborative Network. In addition, he collaborates with the Wake Education Partnership, a local educational non-profit, to host the annual World Café. The World Café brings together business and educators to positively impact student learning experiences. During focused networking sessions, participants brainstorm

potential projects for classroom and school-wide engagement in STEM and global studies.

Further, Mr. Domenico oversees several grant programs such as the National Science Foundation grants, which use funds to promote STEM in after-school programs.

MSAP SCHOOL PRINCIPALS: The Cornerstone school principals are talented administrators who are qualified to implement programs aligned to MSAP goals. They are district instructional leaders, responsible for day-to-day operations of their schools and for administering various district initiatives. All four principal positions are **district-funded** and 100% of their time is devoted to the success of their school and implementation of MSAP.

In an effort to build capacity around the district's Learning and Teaching objective of the WCPSS strategic plan, all four principals participated in a multi-day professional development on Dynamic Learning Experiences. The first focus was around Cultural Proficiency: A Manual for School Leaders that provided them with the opportunity to reflect on beliefs regarding culturally-relevant instruction. Social Emotional Learning was an integral part of this training and explicitly integrated multiple learning processes with the goal of developing self-management, self-awareness, responsible-decision making, relationship skills, and social awareness including empathy and social justice, with an emphasis on developing culturally-responsive relationships across the school. Additionally, this same opportunity provided principals with tools and strategies to lead their faculty to reflect and diversify their classroom practices so all students are represented and equitably engaged in dynamic core instruction.

The second focus of the four principals' professional development particularly relevant to magnet programming was around the 4Cs which are grounded in 21st century skills. Specifically, *communication, collaboration, critical thinking and creativity* should be an authentic and intentional focus in the classroom as teacher's are meaningfully incorporating elements into their

daily lesson plans that grow intelligent and well-rounded students who are prepared to be productive citizens once they graduate high school.

All principals participated in the same professional development sessions that explored authentic and successful ways for school leaders to support teachers in their efforts to integrate and align the 4Cs with the North Carolina Standard Course of Study (NCSCOS) in order to more effectively facilitate and access learning. This training provided specific protocols for modeling instruction, crafting lesson/unit plans and having crucial conversations with teachers to ensure that students are continually learning, but more importantly, that students are learning the specific content material that is outlined in the NCSCOS.

The 3rd focus of the four principals' professional development was around Learner Agency. Learner Agency focuses on the need for teachers to personalize learning experiences for students and the learning scenarios that they encounter. Learner Agency is more than differentiated learning in that students are empowered to understand their learning styles and they learn that these can be accessed in order to increase achievement. District academic team members collaboratively created and facilitated this training, which further exposed principals to Barbara Bray's theory of personalized learning lending itself to heightened student engagement. During this learning experience, principals learn protocols to support teachers in their understanding that, "in a personalized learning environment, educators can encourage learners to build more capacity to initiate, manage and maintain their own learning -- which can then be a high-priority activity throughout their lives, and they have the skills and tools to manage this process. In this culture shift, teacher and learner roles change" (Bray and McClaskey, 2015). Students' need to have voice, choice and ownership in their learning experiences, which would lead to purposeful actions from both the students and the teachers.

The fourth focus was around Digital Learning, which focuses on the learning that is enabled through technology. Helping teachers understand the multitude of opportunities that students can experience when the NCSCOS (NC Standard Course of Study) is merged with varying modes of technology further enables student learning while individually meeting the needs of all learners. Through the WCPSS Digital Learning initiative, educators are expected to understand structures and expectations for relevant technology use that prepares learners for successful academically-focused experiences, to model digital citizenship and create systemic practices that reinforce learner agency, and the 4Cs to create a dynamic learning environment for all student success.

Principals also participated in a Mindset professional development (Dweck, 2006) which provided an opportunity to conceptualize the growth mindset versus a fixed mindset, which Dweck defines as beliefs about one's self and one's most basic qualities: intelligence, talents and personality. All district and school leadership participated in a six-day shared Effective Teacher Framework (ETF) training facilitated by district staff with expertise in select topics. Within ETF, educators learned about cultural proficiency dynamics and ways to engage their respective faculties in necessary conversations, Mindset: The Power of Belief, Standards, Assessments and Expectations/Motivation, Curriculum Planning and Instructional Strategies.

Finally, all four principals received Multi-Tiered Systems of Support Training (MTSS), which is a framework for surveying data and using an evidence-based model for educating students and integrating their academic, behavior, and social-emotional instruction. The MTSS framework also designs interventions to maximize the success of all students and eliminate the ability to predict achievement based on demographics. School teams are undergoing training in cohort groups until the whole district gets trained. The Cornerstone principals described below are talented administrators qualified to implement programs aligned to MSAP goals/purposes..

Rebecca Foote, Principal of Bugg Magnet Elementary School is a skilled administrator capable of leading implementation of MSAP goals and the revised magnet theme. She was named the principal of Bugg in the fall of 2016. She was selected for this principalship due to her past experience and potential for being able to help the school improve academically, lead the school through the re-theming process, and reducing minority group isolation at the school. Her strong background in literacy makes her perfectly suited to help Bugg improve student achievement. She began her 26-year career as a Title 1 Reading and Math Teacher for K-12 in New York State. After moving to Wake County, she continued working as a district Title 1 Teacher and Parent Involvement Coordinator. In this role, Ms. Foote was trained on Readers Workshop at Columbia University Teacher's College in order to be able to work with teachers on creating and delivering lessons. She developed reading and writing units designed to align to the NCSCOS and benchmark assessments.

Ms. Foote then became an Intervention Teacher and Literacy Coach at a high-needs elementary school before serving as the district's Coordinator of Secondary Literacy Coaches. Prior to being selected as principal of Bugg Elementary, she was the Assistant Principal for Instruction for four years at Enloe Magnet High School, the flagship magnet high school in the district. At Enloe she helped create and develop a magnet robotics elective that was designed to assist students of all backgrounds in accessing the robotics curriculum. Ms. Foote's significant experience working in other states, elementary and secondary schools, magnet and non-magnet schools, and district and school-level literacy work. This background in understanding and supporting magnet schools makes her perfectly positioned to help lead the re-theming at Bugg.

Kim Grant, Principal of Lincoln Heights Magnet Elementary School, was named the principal of Lincoln Heights Elementary School in February of 2017. Ms. Grant was selected

with the MSAP grant in mind due to her history of improving academic achievement in high poverty schools as well as the district's confidence in her ability to lead the school through the magnetization process for the purpose of reducing minority group isolation.

Ms. Grant has an extensive background in Environmental Education, the thematic focus of the magnet school. She has participated in Wake Soil and Water Conservation "Project Wet," the North Carolina State Parks Educator Workshop at Hammonds Beach State Park, the North Carolina Museum of Natural Sciences School Grounds Workshops "Using Your Grounds as a Teaching Resources" and "Using the Outdoors to Teach Experiential Science," the Trinity Sound to Sea Program, and Duke University Marine Studies Lab Workshops. Ms. Grant has substantial experience in curriculum writing from writing for the district grade one English Language Arts, collaborative class design, and curriculum mapping following the work of Heidi Hayes-Jacobs. In addition, every school that Ms. Grant has worked in for the past 30 years has had high percentages of economically disadvantaged and minority students where she has worked tirelessly to close achievement gaps and desegregate schools.

Dr. Jamee Lynch, Principal of Millbrook Magnet Elementary School, has close to 20 years of experience working with minority and economically-disadvantaged populations in support of desegregating schools. She is a 16-year veteran principal with 11 of those years in WCPSS. In 2006, Dr. Lynch was Wake County's Principal of the Year and one of 8 finalists for the North Carolina Principal of the Year. She was the founding member of a multi-track year round elementary school in Wake County and of KIPP Destiny Elementary in Dallas-Fort Worth, Texas. Dr. Lynch has many years of experience and knowledge in curriculum development. She designed a year-long concept-based curriculum map for Advanced Placement English Literature. She has developed vertically aligned scope and sequence for writing instruction in grades 5-8. At

KIPP Destiny she wrote and implemented the school design plan to open the school, including developing curriculum and assessment plans for English Language Arts, math, social studies, and science. She has been at Millbrook Magnet Elementary School for the past two years leading turnaround efforts and instructional improvement by building systems and structures to maximize student achievement. All of the Title 1 schools where she has been principal have shown significant achievement and growth gains during her tenure.

Candis Jones, Principal of Southeast Raleigh Magnet High School, has been the principal of Southeast Raleigh Magnet High School for the past three years. She has participated in the BB&T (Branch Baking & Trust) Principal Leadership Institute, North Carolina Future READY Leadership Program, Principals Executive Program for Low-Performing High Schools, and the Assistant Principal Leadership Institute to hone her leadership skills. These professional development opportunities help participants develop leadership solutions to improve student performance and impact organizational change. In Cumberland County, NC she helped develop lessons built around academic language, leadership, and self-awareness called *Our Students, Our Content, Our Choice*. At Southeast Raleigh HS she led development of combination honors and academic courses in English and Biology to help desegregate honors courses. She has spent her entire career serving in schools with high percentages of economically disadvantaged and minority students in support of desegregation efforts in both Cumberland and Wake counties.

D(1)(c): Teachers are qualified to implement special curriculum of the magnet schools

WCPSS serves a community with high expectations. The district functions effectively due to its 19,132 high-quality employees. Of WCPSS's 10,225 teachers, 41.8% hold advanced degrees. As of December 2016, more than 2,500 WCPSS educators have earned certification from the National Board for Professional Teaching Standards while teaching in WCPSS, more than any

other school district in the U.S. for the 11th consecutive year. WCPSS teachers exhibit impressive educational backgrounds, highly professional behavior, and consistent quality instruction.

OPT IN/OUT FOR THEME IMPLEMENTATION

In further support of ensuring that the most qualified and committed teachers are prepared to implement the special curriculum at each of the four Cornerstone project schools, WCPSS invited all staff to **Opt In/Out** for their positions in early 2017. This is a significant commitment on the part of our district to support the new theme implementation at the four MSAP schools. Staff from Human Resources and the Magnet Office met with each MSAP School Principal and their staff to talk about the Opt In/Out process. By Opting In, staff members at the schools commit to incorporating the new or significantly revised theme into instructional practices and supporting peers, students, and families in learning and teaching within their school building. Teachers at the four project schools are expected to have expertise in their disciplines, skills in curriculum development, and **experience with instructional programs that promote desegregation**. Opting Out means staff members do not want to be part of the new magnet theme development at their school and want to pursue different opportunities through the district transfer process or working with the district's Human Resources for alternative placement.

After the Opt In/Out process was complete, principals were then allowed to hire for the open positions, emphasizing the need for applicants to have demonstrated success in student achievement, experience with curriculum development, and experience with instructional programs that promote desegregation. Some examples of the caliber of teaching staff that have been hired to date include: National Board Certified teachers, grade level chairs, department chairs, published author and art exhibitionist, computer programming teacher, Cisco Certified Network Associate, Cisco Certified Academy Instructor, flipped math classroom teacher,

computer art and animation teacher, digital photography teacher, teachers of the year, dual certified staff, engineering design process trained teachers, School Improvement team chairs, MTSS Team Leader, Adobe Lightroom trained teacher, a teacher with Alternate Access training (explores different ways individuals with disabilities can access technology), magnet curriculum writers, DIBELS and Read 3D certified teachers, as well as teachers with previous experience working in diverse, economically disadvantaged inner-cities (see Appendix B for résumés).

The unique nature of each project school requires personnel with a variety of job roles. The requested grant-funded, school-based positions demonstrate careful thought by school teams and administrators who have developed a framework for program implementation. Positions at each school include a grant-funded magnet coordinator and then other instructional positions (Bugg: 3 positions, Lincoln Heights: 3 positions, Millbrook: 2 positions, and Southeast Raleigh: 4 positions). Specific instructional positions are detailed in the following paragraphs.

The district will hire highly qualified teachers, trained in applying best practices. **School-based teaching positions (grant-funded)** will include: Coordinating Teacher for Instructional Technology (Bugg), Innovation Coaches (Bugg), Environmental Connections Integration Specialists (Millbrook & Lincoln Heights), University Connections Liaison (Southeast), Broadcasting/Journalism and Design teachers (Southeast), all supporting theme implementation.

The Instructional Technology and Innovation Coach at Bugg ES will collaborate with Bugg teachers to create, schedule and co-facilitate exciting design and computer science classes in the Innovation Lab. The Environmental Connections Integration Specialist at Lincoln Heights ES and Millbrook ES will ensure theme fidelity by working with teachers to align curricula and pedagogy with standards, as well as serving as a liaison between school partners and the magnet office to facilitate concept integration with professional development. While the Environmental

Inquiry teacher at Lincoln Heights will be **grant-funded**, the Environmental Inquiry teacher at Millbrook is not included in the MSAP budget because an existing district-funded position will assume this role. The University Connections Liaison at Southeast Raleigh will cultivate current university and business partnerships to support the four College and Career Pathways, along with pursuing internship opportunities for students across all pathways. The Broadcasting/Journalism teacher at Southeast Raleigh HS will prepare students for 21st Century journalism by providing practical, hands-on training along with necessary digital and entrepreneurial skills. The Design/Arts teacher at Southeast Raleigh HS will build a program that combines elements of design and design thinking with graphic, digital arts, and architectural design.

Improving student achievement at each of the grant schools is a critical component of the grant and a goal of the district. Each grant school will have an **Instructional Coach (grant-funded)** to help support literacy teachers in improving student performance. At Bugg, Lincoln Heights, and Millbrook, the Instructional Coach will be responsible for coordinating SMART, including training and managing tutors. At Southeast Raleigh, the Instructional Coach will be responsible for coordinating whole school implementation of RAISE and monitoring for fidelity of implementation. All four Instructional Coaches will focus the remainder of their time on supporting teachers and pushing into classrooms to support student achievement.

Bugg, Lincoln Heights, Millbrook and Southeast Raleigh will each have a full-time **Magnet Coordinator**, devoting 100% of their time to theme implementation, **50% MSAP-funded** and **50% district-funded**. Coordinators will serve as liaisons between school staff and the Grant Coordinator. They will assist the principal with managing implementation of grant activities, market the magnet theme, and support teachers at the project school with theme implementation. Qualifications for the magnet coordinator positions include a bachelor's degree, successful

teaching and teacher leader experience, knowledge of magnet school dynamics, experience working in a magnet school, and experience in planning/delivery of professional development.

All staff hired with MSAP funds will possess expertise in their specialized roles and will be evaluated using the NC Educational Evaluation System. The NC Educator Evaluation System was implemented in 2010-11 in both Wake County and across NC. Standard II, *Teachers Establish a Respectful Environment for a Diverse Population of Students*, speaks to the importance of diversity. One element on which teachers are evaluated is: “teachers embrace diversity in the school community and in the world.” In support of teacher needs, all WCPSS training offered is cross-referenced against this and other NC standards.

D(2): Experience and training related to curriculum development and desegregation.

The grant development team see the highly effective and trained personnel D(1) and D(2) as being inextricably linked. Therefore, the narrative for Quality of Personnel included details on training staff received in fields related to project objectives, their knowledge and experience in curriculum development and desegregation strategies. These areas are summarized below.

- District and school leaders and teaching staff in key roles bring an array of training, skills, and knowledge in magnet programs. The key personnel have over 100 years of experience working with magnet schools to support the WCPSS magnet principles of desegregation in Wake. They possess expertise in developing and implementing specialized curriculum and experience successfully desegregating educational settings across the country.
- M&CE Office personnel have been involved in at least four previous MSAP grants working on desegregation strategies. The Director of Magnet Marketing and Research has worked extensively with student assignment to create magnet selection priorities to support diversity.
- Cornerstone principals have experience working on the National Equity Project to design

school-based professional development on cultural proficiency, examining bias, and designing curriculum from a social justice lens.

- Curriculum specialists working in the Cornerstone project schools are trained to teach culturally relevant pedagogy to principals, assistant principals and teachers.
- Other personnel in M&CE are trainers in the 4Cs of Creativity, Critical thinking, Collaboration, and Communication in addition to cognitive shifts in curriculum standards. Several staff in this office are instrumental in training and ensuring magnet curriculum is rigorous and written to support the themes of our magnet schools.
- The Senior Director of Elementary Programs has worked extensively on development of rigorous new curriculum and assessments aligned to the Common Core.
- The Director of Magnet Themes and Curriculum has extensive experience aligning, reviewing, researching, developing, and writing magnet curriculum. Some examples include Etymology, Themes of Psychology, Principal of Flight, and NC Coastal History. She is responsible for coordinating staff development and curriculum development for all district magnet schools. She works closely with Elementary, Middle, and High School Program administrators to ensure curriculum is aligned to district, state, and national standards.

The district prioritizes equity and created a cabinet level leadership position. Assistant Superintendent for Equity Affairs and Innovation, Dr. Rodney Trice, is a leader in desegregation strategies. He is a member of the Minority Student Achievement Network – Research Practitioners Council Chair, Courageous Conversations about Race Subcommittee. His dissertation topic was on “Academic Attainment and the High School Science Experiences among High Achieving African American Males.” He leads district efforts to promote equity for all student subgroups and is an important collaborator with the M&CE office.

E. QUALITY OF PROJECT EVALUATION

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

The project evaluation of the proposed Cornerstone magnet initiative will include formative and summative components to provide continuous feedback to the district on the effectiveness of program implementation and activities in meeting project objectives by an external evaluator – Metis Associates; and a well-designed impact study utilizing a rigorous experimental design to test for statistical associations between implementation of key project activities (Reading Apprenticeship RAISE) and improvements in student academic outcomes conducted by NC State University. Both efforts will be aided and coordinated with the WCPSS Office of Data, Research, and Accountability (DR&A).

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 MGI targets of the grant? How outreach and recruitment can be improved?
- 2) To what extent is grant-funded professional development building the capacity of teachers and staff to implement and integrate evidence- and research-based instructional strategies into classroom instruction? How can professional development offerings be improved?
- 3) How has the grant supported the development of unique thematic curriculum 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 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 professional

development, and by home school (within or outside zone); and to what extent do those difference or gaps change over the five-year grant?

- 6) What impact does participation among magnet high school students in the Reading Apprenticeship RAISE program have on academic achievement outcomes? How do achievement gains of treatment students compare to non-treatment comparison students?

WCPSS proposes to retain Metis Associates to conduct the project evaluation of the MSAP grant initiative and NCSU to conduct the impact study. 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 evaluated MSAP initiatives over the past 10 MSAP funding cycles for 11 community school districts in New York City; Baltimore County, MD; Broward County, FL; Champaign, IL; Orangeburg County, SC; and Beacon, NY. Metis has conducted system-wide evaluations and audits of magnet and choice programs for large school districts including Montgomery County (MD) Schools in 2015, Broward County in 2014, Baltimore County in 2013, and Pittsburgh Schools in 2008.

Metis has a duly-constituted Institutional Review Board that is registered with the U.S. Department of Health and Human Services and assures compliance with Federal-Wide Assurance requirements for the Protection of Human Subjects. Metis will collaborate with DR&A to secure approval for all activities conducted for the MSAP evaluation.

The evaluation of the WCPSS Cornerstone magnet initiative will be directed by Claire Aulicino, a Senior Associate at Metis (résumé provided in Appendix D). Ms. Aulicino 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. Ms. Aulicino will be supported by highly qualified staff and will regularly consult with Metis's Design Consulting Committee on all aspects of the

evaluation. The evaluation team will participate in all USDOE Project Directors meetings and will assist WCPSS in fulfilling all compliance monitoring and program-related requirements.

A rigorous experimental design to meet evidence of promise standards will be conducted by Dr. Robert Hammond and Dr. Melinda Morrill, faculty from the Economics Department within the NC State University Poole College of Management. These faculty have been collaborating with WCPSS since 2014 to examine the district's student assignment process. Dr. Hammond has conducted research in several areas of empirical microeconomics, including education and industrial organizational. He possesses significant expertise in experimental and behavioral economics. Hammond established an experimental laboratory within the Poole College of Management at NCSU and continues in his role as the lab director. Complementing the NCSU team, Dr. Morrill has extensive experience in grant-funded research involving researcher-practitioner partnerships with the public sector. Morrill is currently a co-PI, along with Hammond, on a large grant funded by the Sloan Foundation to study the retirement transitions of public sector workers in NC through an on-going partnership with the NC Treasurer's Office, Retirement Systems Division. In addition, Morrill was co-PI on a grant funded by the TIAA-CREF Institute to study retirement saving plan participation of school district employees in NC. Through these grants, she has managed several graduate research assistants, published a series of articles in top academic journals, and produced reports on research findings.

E(1) Secretary determines the extent to which methods of evaluation will provide evidence.

The proposed evaluation plan will include a well-designed rigorous experimental design to at least meet evidence of promise standards by measuring the educational benefit of the Reading Apprenticeship RAISE program implemented in Southeast Raleigh High School to produce evidence of promise on the impact of the Cornerstone magnet program on student achievement

outcomes, specifically learning outcomes for students across subject areas by improving reading and literacy skills. The methods in the description that follows Tier 2 (Moderate Evidence) standards for impact evaluation. Over the course of the evaluation, the researchers will follow the WWC Standards for effectiveness studies.

RAISE is designed to improve high school students' literacy by integrating metacognitive strategy instruction into content areas. The primary approach will be to consider outcomes at a school level by aggregating student-level information. This technique allows for a cross-cohort analysis of how students are achieving each year and will capture peer effects that may influence other students' learning. The idea is to aggregate student information at the school level to determine how achievement is affected by the implementation of RAISE. This plan will analyze how school-level organizational changes impact student achievement. The methodology is flexible and allows for an investigation of average and distributional impacts.

In order to measure the impact of Reading Apprenticeship RAISE, we will create a "synthetic" control group in a setting with a singular or small number of treatment groups and a large potential pool of untreated groups (Abadie, Diamond, & Hainmueller, 2010). Because the schools chosen for the intervention are not representative of all non-magnet schools, we must construct a suitable counterfactual of what would have happened in absence of Reading Apprenticeship RAISE implementation. A synthetic control group design overcomes the selection bias challenges by generating a "synthetic" school that would look similar to Southeast Raleigh HS on a number of characteristics, including race/ethnicity, sex, and prior achievement. This technique will compare Southeast Raleigh HS to other schools by giving the most weight to those comparison schools that it most closely resembles. Consider Southeast Raleigh HS in two years, after it has implemented RAISE. The synthetic control research design seeks to measure

educational and behavioral outcomes associated with this change in programming. The weighted composite school (i.e., the synthetic school) is used to generate the counterfactual outcomes that would have been observed for Southeast Raleigh HS had it not implemented RAISE. Synthetic control matching is particularly useful in our setting because we have a long history of pre-RAISE school-level data for Southeast Raleigh HS and the schools that will help generate the counterfactual school. In education settings, synthetic control matching has been used by to measure the impact of a scholarship program on high school graduation (Bifulco, Rubenstein, & Sohn, 2014), and affirmative action bans on postsecondary outcomes (Hinrichs, 2012).

The synthetic control matching approach will be complemented by a student-level matching technique known as propensity score matching (PSM). PSM is a statistical technique that can be applied to create a treatment and control group with similar observable characteristics. The idea is that a treatment population may differ along certain observable characteristics, such as family background, that are correlated with unobservable characteristics, such as literacy. In turn, these unobservable characteristics may be correlated with students' academic achievement or behavioral outcomes. Without properly controlling for unobservable characteristics, the measured treatment effect could be biased. Standard regression techniques (e.g., ordinary least squares [OLS] regression) allow the research to control for any observed characteristics that may simultaneously affect treatment status and educational and behavioral outcomes. However, there may still be unobserved characteristics that result in omitted variable bias. PSM allows the researcher to select a weighting of the control group population to look similar to the treated population along certain observed characteristics (e.g., race, gender, prior achievement). For example, a student whose observable characteristics match well with the treatment group might serve as a better counterfactual than the average non-magnet student population.

The evaluation budget provides an adequate level of resources to conduct a well-designed and well-implemented impact study that will build evidence for the impact of the project on the intended outcomes. In order for the study to produce at least evidence of promise, NCSU has proposed the quasi-experimental design using PSM to identify a well-matched comparison group. As noted above, PSM is an iterative process that requires a one-to-one matching of treatment and comparison students on a comprehensive set of demographic and pre-intervention achievement variables in order to accurately assess the impact of the intervention and associate causal relationships. Building evidence 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 base serves as an essential resource for districts across the country for designing instructional programs and interventions to address student learning and achievement needs.

This approach will be modeled after Altonji, Elder, and Taber (Journal of Political Economy, 2005). Their work shows that when an instrument is not available one can leverage the amount of selection on observables to characterize the potential importance of selection on unobservable characteristics. These matching techniques are well-suited to studying impact evaluation in our environment. The key identifying assumption in PSM models is that selection on unobservables is not stronger than selection on observables. For students in higher grade levels, there is rich data on prior achievement and behavioral outcomes. This history will be combined with WCPSS data on family background, such as parent education and income reported on the ACT test and information collected from family surveys. In addition, the evaluation will use aggregated statistics from the American Community Survey (ACS) to impute family-level income and educational background based on geographic address. First, we will estimate a probability of

attending the treatment school based on a host of observable characteristics occurring prior to the implementation of RAISE. This step will allow us to model the extent to which students were selected on the basis of observed characteristics. The PSM method will then allow for a weighting such that the treatment (i.e., RAISE) and control group are observationally similar in the “pre-treatment” period. Thus, any differences in academic or behavioral outcomes can be attributed to the RAISE program. The analyses will report on the importance of controlling for selection on observables when identifying outcomes associated with magnet school attendance.

The rigorous experimental design to meet evidence of promise standards will provide causal data regarding how implementation of RAISE at Southeast Raleigh HS affects student outcomes. This method will allow the research team to provide a high level of causal, evidence-based findings to evaluate the degree to which RAISE is contributing to Southeast Raleigh achieving its MSAP goals. These methods meet Tier 2 (Moderate Evidence) standards for impact studies. Over the course of the study, the researchers will follow WWC Standards of effectiveness.

E(2) Extent to which evaluation will include objective performance measures related to intended outcomes and will produce quantitative and qualitative data.

The project evaluation is designed to assess the implementation of project activities and the extent to which the activities support achievement of the project outcomes and outputs, as articulated in the Cornerstone logic model. 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 WCPSS 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 for developing program adjustments as part of a continuous improvement model. 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 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, Office of MC&E, and Superintendent with formative feedback on 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 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 in partner meetings and community meetings such as Chamber of Commerce and neighborhood

association meetings. The Project Director will work with WCPSS Communications to share information through press releases, social media posts, and the district's website.

Summative evaluation activities will be conducted to assess attainment of intended outcomes, as outlined in the logic model in the Quality of Project Design (see Image 1). The summative evaluation methods will include analysis of data collected through monthly implementation logs, stakeholder surveys, enrollment and applicant pools, and standardized test scores.

This section presents the project performance measures that will be used to assess the extent to which the MSAP program goals are being met in each year of the grant and the specific methods that will be used to collect and analyze data to evaluate impact.

MSAP Goal 1: Desegregation and Choice. The following performance measures will be used to evaluate progress toward this goal over the five-year grant period.

Performance Measure 1.1 (GPRA Measure): Each MSAP project school achieves its projected annual enrollment percentage change to reduce minority group isolation (MGI) among African-American (AA) students. Targets reflect that the percentage of AA students compared to the total school population will be reduced by the end of the grant by: 15 percentage points at Bugg, 10 percentage points at each of Lincoln Heights and Millbrook, and 15 percentage points at Southeast Raleigh HS. See Table 11 which follows.

In addition to reducing MGI among African-American students, two MSAP project schools (Lincoln Heights and Millbrook), will achieve projected annual enrollment percentage changes to reduce MGI among Hispanic-Latino (H-L) students. Targets as identified in Table 11 reflect that the percentage of H-L students compared to the total school population will be reduced by the end of the grant by 10 percentage points at Lincoln Heights and Millbrook.

Table 10: GPRA Measure 1.1 Targets: African-American

School	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5
Bugg	79.1%	79.1%	77.1%	74.1%	69.1%	64.1%
Lincoln Heights	34.6%	34.6%	33.6%	31.6%	28.6%	24.6%
Millbrook	48.6%	48.6%	47.6%	45.6%	42.6%	38.6%
SE Raleigh	67.2%	67.2%	65.2%	62.2%	58.2%	52.2%

Table 11: GPRA Measure 1.1 Targets: Hispanic/Latino

School	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5
Lincoln Heights	30.3%	30.3%	29.3%	27.3%	24.3%	20.3%
Millbrook	32.1%	32.1%	31.1%	29.1%	26.1%	22.1%

Performance Measure 1.2: In each year of the project, all four schools will meet the enrollment target to reduce minority group isolation.

Performance Measure 1.3: In each year of the project, the number of magnet applicants will increase over the previous year by 20% for Bugg, 30% for Lincoln Heights, 30% for Millbrook, and 20% for Southeast Raleigh. Differences in projected growth percentages are based on size of school, magnet seat availability, and historical trends in magnet applications by school level.

Performance Measure 1.4: WCPSS will develop and implement innovative methods and practices at each MSAP school that promote diversity and choice, as measured by teacher surveys and classroom observations. The proportion of teachers at each school who report implementation of innovative methods will be at least: 50% in Year 1, 75% in Year 2, and 100%

in Years 3-5. Similarly, the proportion of observed classrooms that exhibit innovative instructional practices will be at least: 50% in Year 1, 75% in Year 2, and 100% in Years 3-5

Evaluation Methods for MSAP Goal 1: Data to assess performance measures 1.1 and 1.2 will be obtained from an annual analysis of student enrollment data from the District's Office of Student Assignment 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 enrolled students by racial/ethnic group. Data to assess performance measure 1.3 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. Performance measure 1.4 will be assessed using two methods. First, data will be collected from a locally-developed teacher survey that will be administered to all instructional staff in each of the four MSAP schools in the spring of each project year. The survey will be developed by the external evaluator in consultation with the school and District MSAP staff, and will be analyzed using frequency and cross-tabulation calculations by school and for the project. The survey will collect data on staff's knowledge and skills in key concepts addressed in the magnet professional development, implementation of instructional strategies addressed in the training, and satisfaction with training. The survey 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. The second method to assess Performance measure 1.4 will be annual observations of a representative sample of classrooms in each of the four MSAP schools using a checklist developed by in consultation with the evaluator, WCPSS DR&A, and M&CE staff. The checklist will include

innovative teaching practices taught in professional development sessions and will highlight classroom strategies that promote collaboration between students from different backgrounds.

MSAP Goal 2: Academic Achievement of Students. The following performance measures will be used to evaluate progress toward this goal over the five-year grant period.

Performance Measure 2.1 (GPRA Measure): In each year of the grant, each MSAP school will increase the proportion of students achieving proficiency in core academic subjects of reading and math, as measured by a three percentage point increase in proportion of students who score in Achievement Levels 3-5 on the state end-of-grade or end-of-course tests in reading and math.

Performance Measure 2.2 (GPRA Measure): In each year of the grant, each MSAP school will increase the proportion of students from each racial ethnic subgroup who score proficient or above on state assessments in reading, as measured by a three percentage point increase in the proportion who score Achievement Levels 3-5 on the state end-of-grade or end-of-course tests.

Performance Measure 2.3 (GPRA Measure): In each year of the grant, each MSAP school will increase the proportion of students from each racial ethnic subgroup scoring proficient or above on state assessments in math, as measured by a three percentage point increase in proportion of students who score Achievement Levels 3-5 on the NC end-of-grade/end-of-course tests in math.

Performance Measure 2.4: In each year of the grant, first and second grade students at each MSAP elementary school participating in SMART will demonstrate growth from beginning to middle to end of year on the DIBELS Composite and DIBELS Oral Reading Fluency (DORF).

Performance Measure 2.5 (GPRA Measure): In each year of the grant, the four-year cohort graduation rate at Southeast Raleigh HS will increase one percentage point over the prior year.

Performance Measure 2.6: In each year of the grant, Southeast Raleigh 9th students served by Reading Apprenticeship Academic Literacy (RAAL) will demonstrate growth from beginning to

end of course on *GRADE (Group Reading Assessment and Diagnostic Examination)*.

Performance Measure 2.7: Students at each MSAP school will have equitable access to a high-quality learning that promotes academic success and preparation for postsecondary education or employment by participating in theme-related curricular activities in the magnet programs.

Evaluation Methods for MSAP Goal 2: Evaluation of performance measures 2.1, 2.2, and 2.3 will be derived from student scores on state assessments in reading and math. The standardized instruments for student assessments include the NC End-of-Grade (EOG) administered annually to students in grades 3-8 in reading and math and NC End-of-Course (EOC) to students in grades 9-12 in English II and Math I. Results are expressed both in scale scores and performance level equivalents. Scale scores are equal-interval, criterion-referenced and create a continuous scale that extends across grade levels. For each grade, there are five Achievement level categories: Level 1 (limited command of knowledge and skills), Level 2 (partial command), Level 3 (sufficient command), Level 4 (solid command), and Level 5 (superior command).

Student achievement results 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 (Achievement levels 3 through 5). Chi Square Tests of Independence or 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, by grade level, and by student subgroup, including each major racial and 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 therefore insufficient to yield statistically reliable data, and/or where the results yield personally identifiable information.

Performance measure 2.4 will be evaluated through DIBELS assessment data at the beginning of the year, middle of the year, and end of the year. The DIBELS Composite Score is a combination of multiple DIBELS scores and provides the best overall estimate of students' early literacy and/or reading proficiency. The DIBELS Oral Reading Fluency (DORF) will also be used as a measure of reading comprehension. Performance measure 2.5 will be assessed with a comparison of data on four-year cohort graduation rates at Southeast Raleigh HS for each year of the grant. Performance measure 2.6 will be based on a review of *GRADE* assessment results. Scale scores for participating students are expected to increase from the beginning to the middle and end of the year. Performance measure 2.7 will be evaluated via a review of magnet-themed curricular units developed and implemented at each project school. Qualitative data for context purposes on implementation of thematic curriculum activities at each school will be obtained via biannual site visits by the evaluator to each MSAP school in each project year and include class observations, interviews and focus groups with planning team members, teachers, and students.

MSAP Goal 3: Build Capacity. The following performance measures will be used to evaluate progress toward this goal over the five-year grant period.

Performance Measure 3.1: In each year of the grant, each MSAP school will develop and implement at least two new curriculum units that are aligned with state standards and address the following magnet themes: computational thinking and design at Bugg ES; environmental literacy at Lincoln Heights and Millbrook; and arts; design; humanities and social sciences; and engineering, math, and sciences at Southeast Raleigh HS.

Performance Measure 3.2: At each MSAP school, the proportion of teachers who implement instructional content and strategies that are learned through magnet-related professional development will be: 50% in Year 1, 75% in Year 2; and 100% in each of Years 3-5.

Evaluation Methods for MSAP Goal 3: Data to assess performance measure 3.1 will be derived from a systematic review of curriculum development and implementation logs and copies of thematic curriculum units, elective course syllabi and other materials, and magnet elective course registration and enrollment data. These data will be reviewed to assess the new thematic curriculum that is developed and implemented as part of the magnet programs. Data to assess performance measure 3.2 will be assessed with the administration of the teacher survey (as described above) and through a review of data on teacher participation in magnet-related professional development. Qualitative data to provide contextual information about the implementation of thematic curriculum units and elective courses at each school and teacher implementation of instructional content and strategies will be obtained from biannual site visits by the evaluator to each magnet school in each project year that will include class observations and interviews and focus groups with planning team members, teachers, and students.

All data collected through the project evaluation will be triangulated to incorporate diverse perspectives from MSAP stakeholder groups. The findings will be analyzed to objectively *document* the effort expended to implement MSAP activities, 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 via monthly communications, status updates, and biannual summary reports. The evaluator will also provide ongoing informal feedback as data are collected and will participate in MSAP meetings conducted by the Project Director to share these data. Ongoing feedback will support continuous project improvement.

The results of the quantitative and qualitative data analyses will be synthesized and presented by WCPSS 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 WCPSS 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 performance measures. The District will also provide data to the USDOE to report on progress on the five project-level measures as required by Government Performance and Results Act (GPRA).

E(3) Secretary determines extent to which costs are reasonable for the proposed project.

Altogether, the evaluation costs represent 4% (\$599,000) of the total grant request, that's a small investment in light of the expected return in knowledge gains regarding effectiveness of the proposed MSAP program model. The inclusion of an experimental design requires the level of resources that have been allocated in the budget. These costs reflect the total amount needed to address the research questions and meet MSAP program evaluation goals, as well as providing formative and summative data for continuous improvement of the project and addressing the GPRA and project-level performance measures each year of the grant period. The total figures reflect an external evaluation by Metis, the rigorous experimental design to meet at least evidence of promise standards conducted by NCSU, and local support by the WCPSS Data, Research, & Accountability team to organize data for the evaluation and research study.

The external evaluation conducted by Metis includes resources for on-site data collection activities, including bi-annual visits to each proposed magnet school to collect formative and summative feedback from multiple stakeholder groups through focus groups, interviews, and class observations. Additionally, resources are allocated to administer annual surveys of magnet school staff and other key stakeholders to provide opportunities for all to provide feedback, in an anonymous and sanction-free environment. Resources are also allocated for processing and analysis of qualitative data to ensure all human subject rights are adhered to and respected.

Included in the external evaluation budget are costs associated with implementing a comprehensive set of qualitative and quantitative data analysis and reporting activities. For example, the evaluation requires a detailed analysis plan to assess outcomes of students in each school and by subgroup (racial and ethnic groups, low-income students, ELLs, and students with disabilities) to evaluate progress of the grant in meeting the ambitious goals to improve student achievement. Resources are also allocated to ensure 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 biannual 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 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, 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 communication (e.g., video-conferencing as appropriate) to minimize costs associated with travel for the Philadelphia-based Metis evaluation team to WCPSS.

Finally, the evaluation budget includes limited funding for the District's Department of Data, Research, and Accountability 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 performance measures outlined in the evaluation plan.

References

- Abadie, A., Diamond, A., and Hainmueller, J. (2010). Synthetic control methods for comparative case studies: Estimating the effect of California's tobacco control program. *Journal of the American Statistical Association*, 105(490), 493-505.
- Altonji, J. G., Elder, T.E., and Taber, C.R. (2005). Selection on observed and unobserved variables: Assessing the effectiveness of catholic schools. *Journal of Political Economy*, 113(1), 151-84.
- Bazon, E. (July 20, 2008). The next kind of integration. *New York Times Magazine*. Retrieved from: <http://www.nytimes.com/2008/07/20/magazine/20integration-t.html>.
- Bifulco, R., Rubenstein, R., and Sohn, H. (2014). Estimating the effect of Say Yes to Education in Syracuse: An application of synthetic control methods. Association for Education Finance and Policy Presentation, San Antonio, TX.
- Bray, B. and McClaskey, K. (2015). *Make learning personal: The what, who, wow, where, and why*. Thousand Oaks, CA: Corwin.
- Brumbach, M.A. and Ridenour, K.K. (2003). Collaborating with local schools: Resources for building partnerships. *American Association for Higher Education and Accreditation Bulletin*, 55(6).
- Cohen, R. (March 31, 2014). Design thinking: A unified framework for innovation. *Forbes Magazine*. Retrieved from: <https://www.forbes.com/sites/reuvencohen/2014/03/31/design-thinking-a-unified-framework-for-innovation/#6c4c58e18c11>.
- Coyle, K. J. (2010). Back to school: back outside! How outdoor education and outdoor school time create high performance students. *National Wildlife Federation*, 1-41.
- Dweck, C. S. (2006). *Mindset: The new psychology of success*. New York: Random House.

- Grant, G. (2009). *Hope and despair in the American city: Why there are no bad schools in Raleigh*. Cambridge, MA: Harvard University Press.
- Hartig, T., Evan, G.W., Jamner, L.D., Davis, D.S., and Garling, T. (2003). Tracking restoration in natural and urban field settings. *Journal of Environmental Psychology*, 23(2), 109-123.
- Hinrichs, P. (2012). The effects of affirmative action bans on college enrollment, educational attainment, and the demographic composition of universities. *The Review of Economics and Statistics*, 94(3), 712-722.
- Kahlenberg, R. (2009, April 02). *Socioeconomic School Integration: Preliminary lessons from more than 60 districts*. Speech presented at Looking to the Future Legal and Policy Options for Racially Integrated Education in the South and the Nation in North Carolina, Chapel Hill.
- Kodable Outcomes (n.d.). Retrieved March 21, 2017 from <https://www.kodable.com/outcomes>.
- Ladd, H., Clotfelter, C. and Holbein, J. (2016). The growing segmentation of the charter school sector in North Carolina. *Education Finance and Policy*, 1-48.
- Learn Computer Science (n.d.) Retrieved March 21, 2017 from <https://code.org/student>.
- Lee, A.C.K., Jordan, H.C., and Horsley, J. (2015). Value of urban green spaces in promoting healthy living and wellbeing: Prospects for planning. *Risk Management and Healthcare Policy*, 8, 131-137.
- Louv, R. (2008). *Last child in the woods: Saving our children from nature-deficit disorder*. Chapel Hill, NC: Algonquin.
- Morin, A. (n.d.). Universal design for learning: What it is and how it works. Retrieved from: <https://www.understood.org/en/school-learning/assistive-technology/assistive-technologies-basics/universal-design-for-learning-what-it-is-and-how-it-works>.

National Center for Education Statistics (n.d.). Degrees in computer and information sciences conferred by degree-granting institutions, by level of degree and sex of student: 1970-71 through 2010-11.

NC Office of Environmental Education and Public Affairs (2014). Smarter minds: Greener future. NC environmental literacy plan. Retrieved from <http://www.eenorthcarolina.org/educators--literacy-plan.html>.

Orfield, G. (January 1, 2009). Reviving the Goal of an Integrated Society: A 21st Century Challenge. Retrieved from <http://www.racialequitytools.org/resourcefiles/orfield.pdf>

Priyev, M. (July 18, 2016). Teaching coding can also help improve our students' math scores. Retrieved from: <http://tech.co/teach-math-through-coding-2016-07>.

Resnick, M., & Rosenbaum, E. (2013). Designing for Tinkerability. In Honey, M., & Kanter, D. (eds.), *Design, Make, Play: Growing the Next Generation of STEM Innovators*, pp. 163-181. New York, NY: Routledge.

Ruzic, R. & O'Connell, K. (2001). Manipulatives. *National Center on Accessing the General Curriculum*. Retrieved from: <https://www.learningresources.com/text/pdf/Mathresearch.pdf>.

Strobel, J. and van Barneveld, A. (2009). When is PBL more effective? A meta-synthesis of meta-analyses comparing PBL to conventional classrooms. *Interdisciplinary Journal of Problem-Based Learning*, 3(1), 43-58.

U.S. Supreme Court (June 2007). *Parents Involved in the Community Schools v. Seattle and Meredith v. Jefferson County Board of Education* No. 1, 551 U.S. 701, 782.

Vescio, V., Ross, D., and Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and Teacher*

Education, 24(1), 80-91.

Voyles, E. (November 29, 2016). Number of women in technology fields decrease despite STEM initiatives. Retrieved from: <http://www.ballstatedaily.com/article/2016/11/news-women-in-technology>.

Walker, A. and Leary, H. (2009). A problem based learning meta analysis: Differences across problem types, implementation types, disciplines, and assessment levels. *Interdisciplinary Journal of Problem-Based Learning*, 3(1), 6-28.

Wiggins, G.P. and McTighe, J. (2005). *Understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.

Youth Thrive (2015). Wake county: Youth well-being profile. Retrieved from: <http://www.youth-thrive.org/resources/>.