

Metro Nashville Public Schools

Magnet Schools Assistance Program Grant Application (2017–22)

Program Narrative

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COMPETITIVE PRIORITY #1: NEED FOR ASSISTANCE

- (A) *The Secretary evaluates applicant’s need for assistance, by considering the costs of fully implementing the magnet schools project as proposed.*

The Metro Nashville Public Schools (MNPS) is a large, urban school district that serves close to 88,000 students in 167 schools. As the second largest district in the state of Tennessee, and the 41st largest district in the United States, MNPS holds a vision of becoming “the fastest-improving urban school system in America, ensuring that every student becomes a life-long learner prepared for success in college, career and life.” The district spans 520 square miles and includes the city of Nashville as well as surrounding Davidson County. An exceptionally diverse district, enrolled students represent more than 120 countries. The population of students in Pre-K-12 is 28% white (including students from the Middle East), 23% Hispanic, 44% Black, and 4% Asian. In addition, the majority of students served by the district (75%) qualify as economically disadvantaged. With more than 16,000 employees, MNPS is the second largest employer in Nashville and enshrined in the district’s values is a commitment to “supporting, developing, respecting, compensating, and retaining ... teachers, leaders, and staff.”

As described throughout this proposal, MNPS has a rich and proud history of school desegregation dating back to 1957, the same year as the *Brown v. Board of Education* decision, which serves as the backdrop and critical community context for the magnet schools initiative being proposed to the Magnet Schools Assistance Program (MSAP). With the Board of Education’s February 28, 2017 resolution expressing “its full support to the administration’s applying for the Magnet Schools Assistance Program Grant” and supporting “the administration’s adoption and implementation of the grant’s requirements upon awarding of the

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grant,” MNPS continues to underscore its unflinching commitment to the twin principles of educational equity and excellence that are the hallmarks of the federal magnet program.

In preparation for the 2017–22 funding cycle—and bolstered by the District’s Diversity Management Initiative (described in the narrative responses to Competitive Preference Priorities 3 and 4 and the Desegregation section)—MNPS conducted an initial feasibility study to determine those communities that presented the most compelling need for reducing minority group isolation (MGI) and socioeconomic isolation (SES) and at the same time provided fertile terrain for seeding the MSAP initiative. As a result of this extensive and collaborative vetting process, MNPS is requesting funding from the MSAP to convert five elementary schools into whole-school magnet programs: Glenclyff, Inglewood, Rosebank, Warner, and Whitsitt. As shown in Table 1 below, all five schools are experiencing high degrees of MGI and SES isolation. Collectively, the five schools currently serve a total of 1,828 students in grades K–4.

Table 1: Demographics of Proposed Magnet Schools (2015–16)

Proposed Magnet School	Proportion of AA Students	Proportion of H Students	Proportion of FRL Students
Glenclyff (N=545)	10%	65%	61%
Inglewood (N=230)	76%	10%	76%
Rosebank (N=302)	67%	9%	63%
Warner (N=300)	92%	2%	93%
Whitsitt (N=451)	12%	71%	68%
District (N=39,200)	41%	24%	52%

Source: SY15-16 40-Day Count, Office of Student Assignment, MNPS

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MNPS is requesting a total five-year grant in the amount of \$14,999,599. As described in various responses to the MSAP selection criteria, the planning process for the development of theme-based magnet programs is well under way, but an infusion of resources provided by MSAP is required to bring these unique educational programs to fruition and support efforts to provide more diverse learning environments for the students attending these schools. Funding from the MSAP will support the following mission-critical initiatives.

- **Designing and implementing exciting, rigorous educational opportunities at the elementary level that will attract the population of families we are trying to recapture**

Curriculum development around the magnet themes will revitalize the teaching and learning at each school, making it more attractive to a diverse population of students and families, and will enable magnet school students to meet challenging academic standards. MNPS has requested funds to provide sufficient time for magnet school teachers to engage in curriculum development activities both during and after school, which will be guided and supported by the full-time, MSAP-funded Project Director and Curriculum Specialist as well as an array of external partners. The site-based, MSAP-funded School Curriculum Specialists, in collaboration with classroom teachers and other school-based staff, will develop, enhance, and strengthen the magnet themes at their schools, including developing or modifying theme-related enrichment and curricular materials to be aligned with the Tennessee State Board of Education's academic standards, the Next Generation Science Standards (NGSS), the International Society for Technology in Education (ISTE) Standards, and the National Arts Standards. In addition, to support the five proposed magnet schools in enhancing their science programs to be better aligned with NGSS, the district will be purchasing an evidence-based curriculum, Great

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Explorations in Math and Science (GEMS) (as described in the response to CPP 2), and training the staff at the schools in their use.

➤ **Carrying out aggressive, targeted, and multimodal outreach campaigns to inform parents of the schools' innovative and rigorous academic offerings**

Aggressive and targeted outreach and recruitment, using best-in-class communication and dissemination strategies, will be used to promote awareness of the magnet program offerings in order to attract a more diverse population of families than is currently attending the proposed MNPS magnet schools. Serving as the linchpin of the voluntary desegregation strategy, both district- and school-based staff, with support and guidance from the MSAP Project Director and the full-time MSAP-funded Project Recruiter and the District's Communications Department, will engage in numerous activities throughout the project period to inform families about the District's magnet schools, leveraging the District's Optional Schools application process.

➤ **Designing and carrying out rigorous and sustained PD for magnet school staff on theme- and evidence-based teaching and learning practices**

A strong and targeted professional development (PD) program must be implemented to improve teaching and learning practices among MNPS educators and equip them with the skills and knowledge to incorporate innovative and effective educational methods and practices into classroom instruction. Specifically, MSAP funds will be used to support four cross-site partnerships with educational organizations that bring specific expertise in the instructional practices that will be fostered across the five proposed magnets: (1) the Institute for Learning (IFL) at the University of Pittsburgh will be delivering an evidence-based model of coaching to help the schools maximize the role of instructional coaches in providing personalized supports for teachers and to promoting the effective use of research-based pedagogical practices over the

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five-year grant period (see CPP 2); (2) the Intercultural Development Research Association, a federally funded Equity Assistance Center for Region II (IDRA EAC-South), will support development and implementation of culturally responsive policies and practices in each magnet school and the district's goal of equitable access to high quality instruction for all students; (3) a certified GEMS trainer will build teachers' capacity to use the curriculum units and materials to support thematic instruction and integrate literacy as a support for science teaching and learning; (4) the district will leverage the recent competitive procurement to identify organizations with STEAM expertise to offer a program of PD to the four proposed magnets focused on this theme (Glencliff, Inglewood, Rosebank, and Whitsitt).

Developing and sustaining collaborations to support student enrichment activities

Collaborations with community partners serve to supplement, deepen, and expand the opportunities students have to engage in authentic, hands-on activities in real-world settings. In addition, these partnerships can allow the schools to tap a resource network of volunteers and corporate supporters that are vital for sustaining the magnet programs after the initial infusion of federal funding. As evidenced by the letters of support in the Attachments and the site-based budgets, as well as descriptions provided in the Quality of Project Design section, each magnet school will establish or expand collaborations with a variety of outside organizations to enhance curricular offerings for students both during and beyond the school day. Exposure to the kinds of enrichment experiences these partnerships can offer (including field trips, distance learning activities, and electives) gives students attending high-poverty, MGI schools opportunities they would not ordinarily have access to either at home or in school.

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- **Providing the necessary district-level coordination to ensure effective and efficient coordination of MSAP resources in the service of the project's objectives and performance measures**

The core team that will spearhead the implementation of the MNPS MSAP initiative is a seasoned group of educators and administrators who are deeply familiar with the school communities and with the opportunities that this magnet grant can offer to their staff, students, and families. This team, headed by the full-time Project Director, will ensure that all of the proposed magnet school activities are proceeding on schedule and in accordance with program guidelines and will be responsible for meeting with magnet school staff on a regular basis. The MSAP project design is complex and multifaceted; coordination of this program would be impossible in the absence of this core team.

In addition, MSAP funds will permit a comprehensive rigorous formative and summative evaluation of the project over its lifespan. MNPS will engage the services of an external evaluation firm that has a 25-year history of evaluating MSAP initiatives in districts across the country, and so brings to this effort a deep understanding of and commitment to the core principles of magnet school programming. This evaluation will provide timely, objective, and strategic feedback to the MSAP planning team and the school planning teams so that they are able to make midcourse corrections to improve the delivery of program services. In addition, the impact study design will produce evidence of promise of a critical element of the project design.

Taking these initiatives into consideration, we estimate the magnet program activities will cost \$27,052,956 over five years. The requested MSAP grant will cover 55% of the total project cost, and MNPS is prepared to commit the remaining 45% with in-kind personnel and other resources necessary to support full project implementation over the five years.

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

MNPS is faced with underfunding at both the city and state level in 2017-2018, which means that despite the district's equity-focused, student-based budgeting model, the proposed magnet schools will be challenged to provide the comprehensive array of academic, socio-emotional, and non-cognitive programming and services the students attending these low-performing schools require. Implementing the proposed schoolwide magnet program designs would be out of reach. During the next fiscal year, MNPS will receive almost 9 million fewer dollars than requested from the municipal government, a shortfall that will result in programmatic cuts to services for high-need groups such as English language learners (ELLs) and struggling readers as well as cuts to new textbooks and science kits (The Tennessean, 2016a).

More broadly, Nashville is also disadvantaged by an outdated funding model that is applied statewide by the Tennessee State Board of Education. The state's formula, last updated 25 years ago (in 1992), is critiqued for insufficiently accounting for the cost of teaching 21st century skills and for ignoring the compounding challenges that face districts with high concentrations of student poverty (The Tennessean, 2016b). In fact, Davidson County receives less than \$3,300 annually in per-pupil spending from the state (The Tennessean, 2017), and according to a 2016 report from Education Week's Quality Counts study, Tennessee is 43rd in overall per-pupil expenditures (after accounting for regional cost differences)(Quality Counts, 2016). Recognizing the need for immediate changes to this funding climate, MNPS is one of three Tennessee districts that took the necessary step of suing the state for adequate school funding and is especially noteworthy for suing as the school district that includes the state capital.

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Finally, trend analyses conducted by the MNPS Student Assignment Services indicate that enrollment in MNPS is expected to decrease as more students choose instead to attend a local charter school. In fact, the percentage of MNPS students attending charter schools has almost doubled from 2013-2014 to 2016-2017, increasing from 5% of total enrollment to 11.97% of total enrollment. This movement of students will result in a lower allocation of state and local tax revenue for MNPS-managed schools, thereby increasing the budget shortfall facing the district.

Yet, despite these cuts, MNPS is dedicated to deploying funding in a manner that is equitable, transparent, and empowering to local school leaders. The district allocates half of its budget to a student-based budgeting model, which weights school-level funding by a variety of student-need characteristics including grade level, ELL status, special education status, and low academic performance. In fact, Nashville's allocation to this process is the highest among comparable districts nationwide, including New York City (which allocates only 37.4%), San Francisco (which allocates only 34.2%), Baltimore (which allocates only 38.6%), and Newark (which allocates only 23.4%) (MNPS Presentation to the Chamber of Commerce, 2016).

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

The costs of fully implementing the MNPS magnet program as designed exceed the available resources. After calculating the costs related to personnel and other-than-personnel services (OTPS) expenditures, we estimate that the incremental expense of operating the District's magnet grant is 3.2% of the District's total operating budget. This is based on magnet expenses approximating \$27,052,956 (i.e., in-kind plus MSAP funds) and a total annual operating budget for MNPS of \$843,299,700 (in FY 2017). Importantly, the average per-pupil expenditure associated with the implementation of the magnet program is \$10,418 in excess of the standard

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per capita allocation per student.

- (D) The Secretary evaluates applicant's need for assistance, by considering the difficulty of effectively carrying out the approved plan and project for which assistance is sought, including consideration of how the design of the project impacts on the applicant's ability to successfully carry out the approved plan.*

As was described in the first section of this proposal, the communities in which the five proposed magnet schools are located are experiencing high levels of MGI. The most recent research carried out by the District's Office of Student Assignment Services also shows that in the absence of a magnet program intervention, these five proposed schools will likely remain minority group and socioeconomically isolated through the 2021 school year. Furthermore, a trend analysis of student enrollment from 2014-2015 through 2016-2017 suggests that minority group isolation may increase in three of the five schools (Rosebank, Glenclyff, and Whitsitt).

Moreover, all five schools face significant challenges to raising levels of student achievement, which bears out the research showing the correlation between MGI and SES isolation and lower levels of student achievement (see narrative response to CPP 4 for supporting research). In fact, according to the Tennessee Department of Education, each of the five proposed magnet schools is ranked in the bottom 10 percent of schools, statewide, in overall student achievement based on the last three years of academic performance results. These five schools also demonstrate lower student achievement compared to the MNPS district average for elementary schools. For example, while 34% of students in kindergarten through fourth grade districtwide performed at or above proficiency in reading in 2014-2015, performance rates were substantially lower for the five proposed magnets (27% at Glenclyff, 17% at Inglewood, 19% at Rosebank, 15% at Warner, and 13% at Whitsitt). Results were similar for students' mathematics

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performance, where less than 25% of students at three of the five schools demonstrated proficiency, compared to a 45% rate of proficiency district-wide. Achievement gaps also exist within each school between white and non-white students. In each school, the percentage of white students performing at or above proficiency in reading and Math exceeded the percentages of Black and Hispanic students at or above proficiency.

As described throughout this application and highlighted in Section A above, MSAP funding is directly aimed at creating rigorous, appealing, and innovative learning environments with state-of-the-art technology, proven instructional methods, and a culture of entrepreneurialism within the public school system that will cause parents who are not currently sending their children to these schools to stand up and take notice. The five school communities included in this application are ready, willing, and able to accept this challenge, but they cannot bring the vision of the magnet programs to fruition without a significant infusion of resources.

COMPETITIVE PRIORITY #2: NEW OR REVISED MAGNET SCHOOLS

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

MNPS proposes to develop five new evidence-based magnet school programs that will be implemented at Glencliff, Inglewood, Rosebank, Warner, and Whitsitt. The nature and significance of each of the whole-school magnet programs are described in Table 6 in the Attachments. The proposed themes for the five schools are as follows:

Glencliff Entrepreneurship STEAM Magnet Elementary School

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- Inglewood Environmental Sciences STEAM Magnet Elementary School
- Rosebank STEAM Magnet School: Integrated Technology and Biological Sciences
- Warner Arts Magnet Elementary School
- John B. Whitsitt Environmental Engineering STEAM Magnet Elementary School

Across the five schools, to improve teaching and learning MNPS will invest substantial resources and supports, which the District believes will lead to significant increases in student achievement levels and significant reductions in achievement gaps. As described in citation 1, all schools will participate in a five-year plan of professional development to be facilitated by the Institute for Learning (IFL) at the University of Pittsburgh to enhance the impact and effectiveness of instructional coaches. IFL's coaching model has been proven through strong evidence to have positive effects on student achievement in reading and math, as well as teacher efficacy. MNPS will also provide each school with evidence-based curriculum resources from Great Explorations in Math and Science (GEMS) to enhance thematic instruction. As described in citation 2, there is strong evidence of the positive effect of GEMS in increasing student knowledge and achievement in science. IFL and GEMS will be key components in MNPS magnet program that will lead to improved student achievement outcomes, as shown in the logic model in the Quality of Project Design.

Citation 1 (included in Attachments):

Campbell, P.F. & Malkus, N.N. (2011). The Impact of Elementary Mathematics Coaches on Student Achievement. *The Elementary School Journal* Vol. 111 (3), 430-454.

Citation Outcomes: In this study, 36 schools across Virginia were randomly assigned to treatment (IFL coaching model) or control groups, and the impact of the intervention was measured using student scores on the state assessments in math among students in grade 3-5

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(tested grade levels). Results of the analyses showed that the impact of the intervention (whole-school coaching model) had positive and statistically significant effects in schools that received the treatment across multiple years. For each grade level, the treatment students demonstrated scores that exceeded the mean scaled scores on the assessments by 10.7 points (grade 3), 13.7 points (grade 4), and 15.3 points (grade 5); and the differences were statistically significant at the $p < .001$ level. Additionally, the intervention was attributed to explain between 13-15% of the student-level variance in math achievement scores, 41-47% of the variance at the classroom level, and 41-50% at the school level. The outcomes in the study (standardized math scores) relate directly to the outcomes that will be used to measure the impact of the IFL coaching model (scores on the Tennessee Comprehensive Assessment Program [TCAP] in math).

Relevance to Proposed Project: IFL is a component of the Learning Research and Development Center (LRDC) that provides professional learning programs to help educators implement practices that are proven by rigorous research to have positive effects on student learning gains. In IFL's whole-school coaching model, instructional coaches serve as a vehicle to improve teaching and learning school-wide. IFL provides intensive training for classroom teachers, coaches, and administrators on effective uses of coaches in providing ongoing support and modeling to teachers and in professional learning committees to foster collaboration among teachers. As described in the Quality of Project Design, MNPS's partnership with IFL will focus on strengthening the role of instructional coaches in improving student achievement at all five schools through a comprehensive PD plan that includes multiple on-site training sessions with classroom teachers and coaches, site visits by IFL trainers, and virtual support for coaches.

Similar to the methods used in the cited study, MNPS will use student achievement data in each of the five schools, disaggregated by student subgroups, to assess the impact of the IFL

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coaching model on improving teaching and learning in each of the magnet schools. Additional data will be collected on participation by individual teachers and coaches in the IFL coaching model, such as attendance at training sessions, number of visits by coaches to individual classrooms, and teacher and coach participation in PLCs, to examine if the extent of individual teachers' participation in the IFL coaching model impacts on student achievement.

Citation 2 (included in Attachments):

Granger, E.M., Bevis, T.H., Saka, Y., Southerland, S.A., Sampson, V., & Tate, R.L. (2012). The Efficacy of Student-Centered Instruction in Supporting Science Learning. *Science* Vol 338 (6103), 105-108.

Citation Outcomes: This study examined the effect of participation in the Great Explorations in Math and Science (GEMS) Space Science Curriculum Sequence (SSCS) on student content knowledge and attitudes toward scientific learning and inquiry. Results of multi-level, hierarchical linear modeling indicated that students in the treatment group scored significantly higher than control students on outcomes related to science content knowledge, use of models and evidence, and scientific inquiry, as evidenced by these standardized effects and p values:

- Content knowledge: standardized effect = .171; p=.002
- Models and evidence: standardized effect = .682; p<.001
- Views of scientific inquiry: standardized effect = 1.59; p=.002.

One student characteristic, socioeconomic status, moderated the effect of the intervention on posttest outcomes. Findings showed that “although the two groups differed in achievement, both high- and low-SES students in the treatment group performed better than did students in the control group” (p. 107) and the differences were statistically significant.

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In this study, student outcomes were assessed using standard measures of science content, science inquiry, use of models and evidence, and attitudes toward science using four validated tools and student questionnaires. MNPS will use data from the annual administration of the TCAP in science. The TCAP science test is administered each year to students in grades 3-8 to measure understanding, knowledge, and skills in science content, aligned to NGSS.

Relevance to Proposed Project: The study compared the effectiveness of the student-centered SACS materials and PD associated with the materials to that of a district-adopted, teacher-centered curriculum. The GEMS SACS is a curriculum sequence with individual units that are scaffolded to support deeper content knowledge of science concepts and an explicit focus on models and evidence in science. The sequence includes professional development to help increase teacher content knowledge and to provide extensive pedagogical support and help with implementation of formative and summative assessment tools.

Evidence provided in the study suggests that GEMS SACS has statistically significant and positive impacts on student learning outcomes in science, including increased content knowledge and improved attitudes toward science. These outcomes are critical components in the effectiveness of the new MNPS STEAM magnet programs. The programs will be designed to provide students with enhanced opportunities to engage in science content and process in meaningful ways that promote inquiry and problem-based learning. As such, the outcomes in the study are directly related to the proposed magnet programs (as described in the logic model).

Across the new magnet schools, GEMS will serve as a curricular resource for teachers to integrate into the thematic curriculum units. Over the five-year grant period, each school's GEMS team, which will consist of the School Curriculum Specialist, Literacy Design Specialist, and a teacher from each grade level, will receive PD from a Tennessee-based GEMS trainer to

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learn effective strategies for implementing GEMS materials into science and magnet theme-related instruction and to use it as a resources for integrating science into literacy instruction.

COMPETITIVE PRIORITY #3: SELECTION OF STUDENTS

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

MNPS provides opportunities for students within Davidson County to attend a school other than the school for which they are geographically zoned as part of the *optional application* program.

The optional application program provides opportunities for students to select from schools that may offer different pedagogical approaches and thematic content from their home zone school.

Only schools that participate in the program can accept students from outside of the attendance zone. The five proposed magnet schools will be part of the optional application program and will accept students from outside of the school's attendance zone using a **race- neutral random**

lottery that does not include academic achievement as a selection criterion

(Policy SBO 1.105) (as described in Table 5 in the Attachments).

Students who are geographically zoned for any of the five new magnet schools will receive automatic placement in the school. Students who reside outside of the school's geographic attendance zone will be required to complete an optional school application, in one of five languages (English, Arabic, Kurdish, Somali, and Spanish), to participate in the lottery process for admissions. All applications will be entered into a random lottery selection process that includes, in order of priority, sibling and employee preference.

COMPETITIVE PRIORITY #4: INCREASING RACIAL INTEGRATION AND SOCIOECONOMIC DIVERSITY

Numerous studies show a close relationship between socioeconomic status (SES) and

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

Research also points to the substantial impact of economic desegregation—separate from and in addition to racial/ethnic integration—on student achievement. Specifically, low-income students who attend schools with middle-class peers achieve significantly higher academic outcomes than low-income students who are enrolled in schools with concentrated poverty. In fact, at least one study suggests that the overall SES composition of a school has a greater impact on student achievement than an individual’s familial economic background (Kalhenberg, 2013).

Finally, attendance at a racial and socioeconomically integrated school also results in higher gains in 21st century skills and resulting outcomes. Students attending a diverse school, for example, are more likely to enter STEM career fields and are more likely to have “higher occupational and income attainment,” (Mickelson, 2016) in part due to their increased capacity for critical thinking, collaboration, and interpersonal competence (Mickelson, 2016; Partnership for 21st Century Learning, 2016; Professional Learning Exchange, 2008). It is worth highlighting that these interpersonal competencies accrue not only to students of color, but to the

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white students attending diverse schools as well (Siegel-Hawley, 2012).

Efforts to Leverage SES as a Desegregation Strategy in Nashville

In November 2012, The Metro Nashville Davidson County Board of Public Education unanimously adopted a **comprehensive Diversity Management Plan** to address the importance of racial, ethnic, and socioeconomic integration within its core definition of diversity, as follows: “MNPS views diversity as multi-faceted, including race/ethnicity, income, language, and disability. Taken together, the factors illuminate the diversity that is present in individual schools in the context of the school system as a whole.” The Diversity Management Plan, which has been continually in force since its adoption, recognizes the impact that student enrollment in each individual school has on the school system at large. It serves as a monitoring tool for school and district leadership to assess levels of diversity using multiple benchmarks as a means to helping MNPS achieve integrated learning environments.

According to the plan, a school is diverse if it meets the following student enrollment criteria:

- No single racial or ethnic group represents more than 50% of the school’s total enrollment, no two racial/ethnic subgroups represent more than 30% of the school’s total enrollment each, and no three racial/ethnic subgroups represent over 15% of the school’s total enrollment each

AND, two out of the following three are met:

- The percentage of enrolled students who are **eligible for free or reduced lunch** is at least two-thirds the average for schools in its tier
- The percentage of enrolled students who are eligible for English language services is at least two-thirds the average for schools in its tier
- The percentage of enrolled students classified with a disability is at least two-thirds the

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average for schools in its tier

District-wide practices that support schools' efforts to increase SES diversity include, but are not limited to: school enrollment policies (including school zoning and re-zoning, and application and admission policies); school openings, closings, and locations; student transportation programs; and grade organization and feeder patterns. Consistent with the district's statement that "MNPS Schools of Choice are the District's Diversity Plan," the Diversity Management Plan also includes the use of choice-specific strategies such as the general and targeted recruitment of students to schools of choice, activities to inform parents about schools of choice, and special services intended to retain students in schools of choice.

The Diversity Management Plan is upheld through stringent oversight, including annual diversity reports as well as continuous monitoring of how each district policy impacts racial/ethnic, socioeconomic, language, and disability integration. Schools that do not meet the definition of diversity stated within this plan are considered "in need of greater diversity" and receive increased attention from the district. For schools that fall under this category, the district first works closely with the school principal to develop school-based diversity goals and build these goals into their School Improvement Plans. Then, to increase accountability, the chosen goals are incorporated into the school principal's annual evaluation.

(A) Desegregation

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

Background and Context

As pointed out in Making the Unequal Metropolis: School Desegregation and Its Limits, Erickson (2016) notes that in the early decades of school desegregation, "Nashville was one of desegregation's best-case scenarios" (p. 2). Yet, she continues, "Even as Nashville's schools

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became exceptional for their statistical desegregation, they remained unexceptional in the patterns of unequal educational opportunity they demonstrated....A focus on the momentary and easily measurable—the ratio of white to black students in a school, especially—took precedence over the deep and long entrenched....and thus prevented the conversion of statistical significance to more broadly constructed equality of educational opportunity” (pp. 3, 8). The student assignment plans in 1957 passed by the Nashville City and Davidson County school boards met with immediate opposition, and civil actions brought forth by plaintiffs (*Kelly et al. v. Board of Education City of Nashville* and *Maxwell v. Board of Education Davidson County*) to declare these plans unconstitutional resulted in the rejection of these early school desegregation plans. In 1963, the city and county consolidated into the Nashville-Davidson County School District, one of the first city/county metropolitan governments in the country. In his May 18, 1963 speech at Vanderbilt University, President John F. Kennedy challenged Nashvillians and Southerners to voluntarily desegregate. Decades of court orders, accompanied by much turmoil, followed. After a series of petitions to the Court, unitary status was formally granted to the consolidated district in 1998 (Tennessee Advisory Committee to the US Commission on Civil Rights, 2008).

Fast forward to November 2012 and the adoption of the resolution by the Metro Nashville Davidson County Board of Public Education Board calling for “all students to be provided the benefits of learning in diverse settings,” and which declares, in addition, that “quality, diverse schools at all grade levels are indispensable to the civic and educational purpose of this School District.” The rationale behind this resolution, and the policies and practices that emanated from it, was in fact to achieve the broader goal of educational opportunity that was lacking in decades past. To bring this vision to fruition, on March 12, 2013, the School Board established the Diversity Management Plan (DMP), designed to guide all diversity in the school district.

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Reaching far beyond the constructs of “statistical desegregation,” the district now defines diversity as “multi-faceted, including race/ethnicity, income, language and disability. Taken together, the factors illuminate the diversity that is present in individual schools in the context of the school system as a whole.” The DMP lays out in detail the four-part conditions that need to be met for a school to achieve the goal of diversity, including student diversity as well as staff diversity. As described in the CPP 3 and 4 narratives, the DMP, and the continual monitoring process built into the Plan, provide a solid foundation upon which to build this MSAP initiative.

A second pillar embedded with the culture and operation of MNPS is that of school choice, which is also integral to the purposes of the MSAP. Families in Nashville have 167 public schools available to them, including:

- Neighborhood or zoned schools: Students attend the school assigned to them based upon their address.
- Magnet schools: Schools have specific thematic or academic focuses, including some with entrance requirements.
- Non-traditional schools: Schools that offer an alternative schedule that provides more independent time for students to work at their own pace.
- Charter schools: Schools that are run independently by their own school leadership.

If a family wants to attend another school besides their zoned school, they need to complete the Optional Schools Application in the fall. Among the magnet/optional school programs families can select are: programs focusing on the arts, Cambridge, International Baccalaureate, Montessori, Paideia, Spanish immersion, museum studies, and STEM. Families opting into this process can choose up to seven school choices.

Upon his arrival as Director of Schools for MNPS in July 2016, Dr. Shawn Joseph formed a

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Transition Team charged with uncovering challenges and strengths of the school system and advising him on potential solutions to systemic, long-standing problems. Four subcommittees were formed to conduct this review, including one focused on School Choice. The School Choice Committee was chaired by Maree Sneed, a national legal expert in the area of school desegregation, and was charged with conducting a review of the processes, policies, and systems that support the school choice selection process in MNPS as well as of best practices regarding school choice in other districts across the country. In addition to highlighting the DMP, in its February 2017 report, the Committee identified a number of system strengths, among them: the number of families participating in the school choice process has increased over time; the aggregate overall applicant pool of students applying through the school choice process is racially/ethnically diverse; and there are a variety of school choices available to families (Transition Team Report, 2017). The Committee also noted areas of needed improvement, which the MNPS MSAP planning team has taken into consideration in designing the proposed magnet initiative. Among the challenges the 2017-2022 MSAP initiative will address are:

- The fact that many schools are not diverse and high levels of MGI and SES isolation remain at many schools. The MSAP initiative is targeting five elementary schools that are experiencing high levels of MGI, as defined by the DMP.
- The lack of vertical alignment within the various thematic pathways. Four of the five schools' thematic plans have been intentionally and systematically crafted to support the District's newly-minted commitment to a system-wide focus on Science, Technology, Engineering, Arts, and Mathematics (STEAM) at the middle school level, thereby ensuring a smooth transition of these elementary school students into middle school. In addition, the Choice Committee specifically recommended the creation of an elementary-level arts magnet

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to establish vertical alignment across tiers in the district's arts offerings. The fifth proposed magnet site addresses this recommendation.

- The lack of a strategic marketing plan for its schools and the need to develop and implement the best strategies for providing outreach and recruitment for parents and students. It is our expectation that the marketing and outreach activities seeded by the MSAP grant will support the objectives of the five proposed magnet sites as well as build the system's capacity to implement this mission-critical strategy.

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

Strategic Selection of Magnet Sites

In preparation for the 2017–22 funding cycle, MNPS conducted an initial feasibility study using the DMP as the lens through which to determine those school communities within the city that presented the most compelling need for reducing MGI and at the same time provided fertile terrain for seeding an MSAP initiative. As shown in Table 2 below, all five schools are experiencing high degrees of MGI of Hispanic students (two schools) or African American students (three schools), with the rates of MGI ranging from 26 percentage points above the districtwide average to a high of 51 percentage points above the districtwide average for the elementary tier.

Additionally, the schools' rates of eligibility for free and reduced-price lunch are considerably higher than the districtwide average for the elementary tier, ranging from 61% at Glenclyff to 93% at Warner (compared to a districtwide average of 52% at the same educational level). As pointed out in the narrative addressing CPP 4, recent large-scale studies show a strong

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correlation between a school’s concentration of poverty and lower levels of student achievement. As detailed in the Quality of Project Design, another key reason for targeting the five proposed magnet sites is to provide the supports needed to significantly raise the levels of achievement among the students there.

Table 2. Student Characteristics by School and District (2016-2017)

Schools	Black or African American	White	Hispanic or Latino	Asian	Eligibility for FRL
Glenclyff (N=509)	9.2%	22%	64.4%	2.6%	61%
Inglewood (N=190)	69.5%	13.2%	11.1%	0%	76%
Rosebank (N=239)	60.7%	20.1%	9.6%	3.3%	63%
Warner (N=273)	89.4%	4.4%	1.8%	0%	93%
Whitsitt (N=413)	10.7%	13.8%	71.2%	2.9%	68%
District (K-4) (N=35,910)	40.3%	31.3%	24.0%	4.1%	52%

In addition to MNPS families that are opting out of their zoned schools, there are significant numbers of families residing in Nashville who are opting out of the public school system entirely and enrolling their children in nonpublic schools, charter schools, or are homeschooling their children. In fact, according to an analysis of MNPS enrollment data from 2000 through 2012, conducted by researchers from Vanderbilt University for the NashvilleNext regional plan, “nearly 10% of MNPS students leave MNPS schools each year and re-enroll in a different public school district or private district” elsewhere (McQueen, Smrekar, & Knudson, 2013). Furthermore, white and non-economically disadvantaged families are more likely to opt out of

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the public schools, which exacerbates the racial and economic imbalance in the system. In 2010, for example, while 65% of those living in Davidson County were white, only 33% of those enrolled in MNPS were white. Furthermore, only 19% of Davidson County residents were considered economically disadvantaged, compared to 71% of those enrolled in MNPS (Greenslate, Sewel, & Showah, 2014).

When examining the demographics of the students attending the non-public schools within a five-mile radius of the proposed magnet sites, it is clear that these schools are considerably more diverse than the public schools (see Table 3 below). It is striking, for example, that only 13% of the students attending the non-public schools serving the communities in proximity to the five proposed magnet sites are African American compared to 41% of the K-4 students attending MNPS public schools. In contrast, 71% of the students attending non-public schools are white versus only 31% of MNPS elementary school students. A key element of the District’s outreach and recruitment strategy is to appeal to families that are currently choosing to incur the cost of a private education for their children because the public school options available to them do not meet their children’s needs. Outreach and recruitment efforts will also target the 296 5-10 year olds that are currently homeschooled by their families.

Table 3. Student Characteristics by NPS School and NPS Total (2016-2017)

Non-Public School	Black or African American	White	Hispanic or Latino	Asian	Two or more races
Akiva School (N=61)	2%	97%	0%	0%	0%
Davidson Academy (N=657)	9%	84%	3%	2%	2%

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Non-Public School	Black or African American	White	Hispanic or Latino	Asian	Two or more races
Donelson Christian Academy (N=648)	6%	84%	2%	3%	4%
F. H. Jenkins (N=53)	98%	2%	0%	0%	0%
Lighthouse Christian School (N=464)	42%	36%	5%	6%	11%
Linden Waldorf School (N=151)	1%	85%	1%	3%	9%
Nashville Int. Academy (N=76)	4%	0%	0%	67%	29%
St. Bernard Academy (N=306)	8%	82%	0%	4%	5%
St. Edward School (N=375)	8%	72%	10%	6%	4%
Univ. School of Nashville (N=1,048)	10%	71%	1%	9%	9%
Total NPS (N=3,839)	13%	71%	3%	6%	7%

Strategic Siting of Magnet Schools

Significant recent changes within the city of Nashville—and in particular in the two communities targeted for support from MSAP, East Nashville and South Nashville—provided the MSAP planning team with ample reason to believe that the timing is ripe to reverse the demographic trends that have resulted in MGI and SES isolation in evidence in the five schools.

East Nashville, home to Inglewood, Rosebank, and Warner, embodies as a community the dynamic tension of rapid gentrification. A longstanding neighborhood with previously deep community roots among non-white and lower-income families, East Nashville has recently become a popular neighborhood for a new influx of families and young professionals. In 2014,

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for example, National Public Radio signaled this trend with a piece titled “East Nashville Rocks,” explaining in part how “longtime residents will note that East Nashville has been gentrifying on and off since the 1970s. Right now, though, the rush is on. The neighborhood's been flooded, not by water, but by the artisanal products of today's consumer-culture elite” (Powers, 2014). As a further reflection of the fluctuation in this neighborhood's cultural identity, Vogue Magazine published an article about East Nashville titled “East Nasty: This Is Nashville's Coolest Neighborhood,” describing it as an “emerging, diverse neighborhood” (Marcus, 2016). While long-time residents would likely have little patience for the new moniker, the increasing diversity and attention being given East Nashville does, nevertheless, have important implications for the MNPS's desegregation efforts. Finally, East Nashville is in close proximity to the city's largest public housing complex, Cacye Place, with just over 700 units. Here too, however, a transformation is underway, through an urban master planning initiative to inject mixed-income units into the site as well as add commercial and business spaces (Metropolitan Development and Housing Agency, 2014).

South Nashville, the broader municipal division that encompasses both Glenclyff and Whitsitt, is a diverse area of Nashville with a large Hispanic population and an increasingly immigrant and international presence. Included in the region is Nolensville Pike, “a hub of commercial activity oriented to immigrants, foreign-born residents, and other Nashvillians and tourists interested in various cultures,” and the community overall is considered the city's “international and socially diverse area” (Nashville Next Community Plan, 2015). Other recent changes to the area include a large municipal investment in the development of a local mall into a new “Global Mall” that will include a branch of the Nashville State Community College as well as a MNPS Enrollment Center with dedicated resources to serve the Hispanic/Latino

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population, which has grown rapidly since 2000. An example of such a local resource is the recently-opened Casa Azafrán, a multi-use community center that houses a breadth of non-profit and service organizations to meet this population's needs. Casa Azafrán's Early Learning Center, which attracts a diverse population of families, will be targeted for recruiting students to the two South Nashville magnets. (The percentage of white students enrolled in the Casa Azafrán Early Learning Center has seen a dramatic increase from 22% in 2015-16 to 33% in 2016-17).

Outreach and Recruitment Strategy

The 2017-22 MSAP initiative—which will leverage the robust infrastructure in place in the district and capitalize on the culture of choice that has firmly taken root here—will target marketing efforts to capitalize on shifting demographics to recapture those families who are leaving MNPS to increase diversity in the five proposed magnet schools. Beginning in 2017-18, the five new magnets will be listed in the District's Optional Schools program, and will benefit from the set of activities sponsored by the District designed to provide opportunities for families to become acquainted with the program options available to them, the requirements associated with the various options, and the timeframes for the application and acceptance processes.

Applications are distributed in the end of October (with a deadline of early December). An essential component of the recruitment and outreach strategy is a series of Tuesday open houses that take place district-wide during the month of November (pre-application) and January (post-application). During these open houses, school staff provides interested families with tours of classrooms and other school facilities (e.g., art studios, outdoor learning spaces, etc.). MNPS provides each school a tool-kit and accompanying guidelines to ensure that tours and open-houses are conducted effectively, including a variety of marketing templates that schools can tailor to their needs (e.g., school tour scripts). Outreach such as this is encouraged as best

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practice by the USDOE's Office of Innovation and Improvement.

Furthermore, to facilitate community outreach, school principals are given access to information on out-of-zone students who have applied through the choice process. By accessing these School Choice Reports, principals are able to obtain contact information for applicants, students who have selected the school (both those who have accepted, declined, and have not yet responded to their acceptance letter) and students who are placed on the waitlist. Principals use this information to conduct person-to-person outreach (such as phone calls and letters) as well as to monitor trends in school enrollment. For example, they are encouraged to identify feeder schools and communities and target their outreach accordingly. The proposed East Nashville schools will benefit from specific outreach efforts being made by the District, including an East Nashville School Fair and a community-specific PTA.

Recognizing the challenges associated with recruiting families to schools dealing with academic achievement challenges, the District's Communications Department has developed a Marketing Action Plan specifically designed to support recruitment for Priority Schools. This Plan will complement the school-specific marketing plans developed by two of the five proposed magnets identified by the State of Tennessee Department of Education as Priority Schools (Inglewood and Whitsitt). The department has developed a multifaceted approach to garner the support of prospective families, and foster relationships among schools and community partners. At the onset, leaders engage in an "information gathering" process, in which the District gathers pertinent information on the school community, events to attend, and relationship building with feeder schools. During this stage, leaders identify potential families and critical community partners. In an effort to communicate a uniformed school message, the district collaborates with school leadership teams to create goals for the appropriate audience.

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The Magnet Project Director and the Project Recruiter will work closely with each school to develop and implement targeted and aggressive outreach and recruitment strategies that reflect the unique characteristics of the school community. The Project Recruiter will develop and disseminate district-based promotional materials (e.g., brochures, videos, fact sheets), establish contacts within the local community, oversee the development of the District magnet program website, and submit information to local media to promote magnet schools' activities. The Project Recruiter will also work hand in hand with the school-based magnet staff to develop marketing materials and activities to promote their individual magnet programs. Without such targeted outreach, the chances of successfully meeting the desegregation goals that are outlined in the project performance measures would be negligible.

School-based recruitment for the magnet schools will be especially important because the students, teachers, administrators, and parents are the individuals who best know the schools and can best advertise them. The Magnet Site Coordinator at each school will develop a school-based marketing and outreach plan to build on the activities and strategies that are conducted by the District. Targeted marketing will focus on MNPS families choosing private school options, community service agencies, faith-based organizations, and private daycares and preschools. Open Houses and showcases of student learning will be conducted for the families and community members; paper and electronic informational flyers and brochures will be shared with families in neighboring daycares and preschools; and presentations will be made by magnet staff and students at community events such as block parties and fairs. Furthermore, each school will develop a magnet page on the school's website to highlight student and teacher achievements in the magnet program and to share information about the magnet theme and related family resources. The schools will also develop magnet program Facebook pages and

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Twitter accounts to share information with families in real time.

Key strategies in reaching a diverse population of families will be the development of strong community partnerships and dissemination of information to prospective families at community-based locations, such as libraries, faith-based organizations, youth centers, play gyms, and recreational facilities, as well as through local governmental offices. In their efforts to disseminate information to “hard-to-reach” parents and families, the Magnet Site Coordinators will receive support from the Family Information Center, a dedicated team that provides telephone and online-chat support for families with questions. Additionally, each school will work with district staff and the MNPS Translation Unit to ensure that they have access to resources to provide verbal and written information about the programs with native speakers of languages other than English. Each school will also work to recruit native speakers of languages other than English from their staff, parent, and local communities to interact directly with parents so that they feel welcome in the school buildings and understand the information that is shared. The school-specific outreach and recruitment efforts that will be carried out by the magnet schools are outlined in Table 4.

Table 4. School-Based Outreach and Recruitment Strategies

School	Desegregation Objective	Strategies
Glenclyff	Reduce Hispanic MGI	<ul style="list-style-type: none">• Distribution of school flyers in community centers, such as YMCA, Coleman Center, and Casa Azafran• Presentations and school performances at local preschools and Head Start programs and district Parent University workshops

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School	Desegregation Objective	Strategies
Inglewood	Reduce African American MGI	<ul style="list-style-type: none"> • Dissemination of marketing materials in local preschools (such as Maddox YMCA daycare and Fannie Battle Day Home) and faith-based organizations (Dalewood Baptist Church and Riverwood Church of Christ) • Presentations for East Nashville Chamber of Commerce, East Nashville Merchants Association, and local real estate professionals • Social media posts and press releases to media (such as East Nashvillian News)
Rosebank	Reduce African American MGI	<ul style="list-style-type: none"> • Presentations and information tables at community organization meetings (such Rosebank, East Hills, and Lockland Spring Neighborhood Associations and MOMs Clubs of East Nashville) • Participation in neighborhood celebrations, such as Tomato Festival Parade • Outreach to daycares and preschools (Ross Early Learning Center, Holly Street Day Care) • Distribution of promotional video and press releases in local media (East Nashville and Nashville Parent Magazines, Tennessean newspaper, and Nashville Symphony playbill)

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School	Desegregation Objective	Strategies
		ads) <ul style="list-style-type: none"> • Social media and digital billboards
Warner	Reduce African American MGI	<ul style="list-style-type: none"> • Presentations and distribution of marketing materials at faith-based organizations (e.g., East Side Church of Christ, Valley View Baptist Church, Temple Beth El); preschools and day cares (e.g., YMCA, Martha O’ Bryan Child Development Center); and local family doctor and dentist offices • Student performances at community events, such as East Park celebrations • Social and print media (East Nashvillian newspaper) and local television and radio stations
Whitsitt	Reduce Hispanic MGI	<ul style="list-style-type: none"> • Presentations and dissemination of school brochures at local day cares and preschools (e.g., Dudley Heat Start, Woodbine Baptist Daycare Center, and Casa Azafran) • Placement of magnet program yard signs through community • Radio, social media, and television messaging about STEAM programming

(2) *The Secretary determines the extent to which the applicant demonstrates how it will*

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foster interaction among students of different social, economic, ethnic, and racial backgrounds in classroom activities, extracurricular activities, or other activities in the schools in which the magnet programs operate.

The District's aggressive outreach and recruitment plan, in concert with an equitable, efficient, and race-neutral student selection process (described in CPP 3 and Table 5), will ensure that the MNPS magnet schools attract and enroll an increasingly diverse population of students and families over the five-year project. However, there is ample evidence to suggest that attracting a diverse student body does not in and of itself guarantee that students of different backgrounds, once enrolled in magnet schools, will develop positive interactions in the absence of educational and structural strategies known to foster positive intergroup relationships and to support all learners to succeed in the magnet program (Bifulco, Buerger, & Cobb, 2012). Some important strategies identified in the literature for promoting positive interactions between students and teachers and among students include implementing a culturally responsive pedagogy and providing opportunities for project-based collaborative learning experiences.

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

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To help foster integrated learning environments within five magnet schools, MNPS will partner with the **Intercultural Development Research Association, the federally funded Equity Assistance Center for Region II (IDRA EAC-South)**, to provide customized technical assistance for building cultural competence and culturally-responsive policies and practices. Because cultural responsiveness is highly dependent upon environment and interpersonal relationships, IDRA-EAC South will initiate its work by conducting needs assessments in each of the five schools to develop customized programs for training and supports. Beginning in Year 1 of the grant, IDRA-EAC South will conduct: a comprehensive review of district- and student-level student achievement data disaggregated by race, ethnicity, and gender; conduct focus group interviews of school leadership, faculty, parents, and students; administer student surveys; and conduct classroom observations using IDRA-EAC South-designed protocols.

Using these data, IDRA-EAC South will collaborate with each school to create a technical assistance plan to build the capacity of administrative and instructional staff at each magnet school to understand and identify implicit bias and cultural competence. The technical assistance plans will include development of a school-wide framework for analyzing data through an equity lens and training (using a train-the-trainer model) to help schools build capacity to integrate the equity framework throughout all aspects of the school. In Years 2-5 of the grant, IDRA-EAC South will conduct seven on-site consultant visits to assist each school to identify challenges and document successes to fostering cultural competence and awareness. The IDRA-EAC South will provide online resources including webinars, podcasts, a virtual learning community, and articles targeted to district leadership and instructional staff during all phases of assistance.

Cooperative group learning as a pedagogical strategy has also shown to help foster positive interactions among students. While definitions of cooperative learning vary, the key components

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are the deliberate use of group work with the groups composed of students of varying academic achievement levels, backgrounds, or perspectives. Cooperative learning techniques are student-centered and are designed to increase the achievement of all students involved in the activity. In fact, according to the National Coalition on School Diversity, “classrooms [that] are structured around cooperative group learning...help to maximize the benefits of diversity.” Furthermore, heterogeneous classroom arrangements that facilitate substantive contact between students leads to reduced prejudice and explicit self-reflection about issues such as racial/ethnic discrimination (Siegel-Hawley, 2012). According to Slavin and Cooper (1999), “Because cooperative learning groups encourage positive social interaction among students of diverse racial and ethnic backgrounds, they have great potential to facilitate the building of cross-ethnic friendships and to reduce racial stereotyping, discrimination, and prejudice” (p. 2).

Cooperative group learning is also defined by its focus on problem solving as the means through which interaction takes place. Through activities such as developing solutions to real-world problems (Cornell University Center for Teaching Excellence, 2016), students engaged in cooperative learning are able to “draw on their past experiences and knowledge” and “are invested in their own learning.” Furthermore, cooperative work and team learning have been shown to have a strong and consistent positive effect on relationships between culturally diverse students (Colbert, 2010). A 2012 study, for example, found that students who had higher-quality interactions with peers from other racial groups reported having more positive academic environments and more positive attitudes toward other groups (Bifulco et al., 2012).

As described in the Quality of Project Design section, in the MNPS magnet initiative, cooperative learning as an integration strategy will be emphasized through a focus on **project-based learning** (PBL). MNPS will support the five schools in their efforts to integrate PBL

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opportunities into instruction by providing immersive learning experiences, staff training, resources, and expertise. MNPS closely partnered with the Buck Institute of Education from 2010 through 2016 to train 28 instructional staff in effective PBL strategies. Currently 23 PBL trainers on staff include general classroom teachers as well as EL, Special Ed, and technology specialists. As a team, these PBL trainers will support each magnet school under the direction of the Magnet Curriculum Specialist, who will become a qualified trainer in PBL practices as well.

- (3) *The Secretary determines the extent to which the applicant demonstrates how it will ensure equal access and treatment from eligible project participants who have been traditionally underrepresented in course or activities offered as part of the magnet school, e.g., women and girls in mathematics, science, or technology courses, and disabled students.*

MNPS Policy on Equal Access

It is the written policy of MNPS not to discriminate on the basis of race, religion, creed, gender, gender identify, sexual orientation, national origin, color, age, and/or disability in admission to, access to, or operation of its programs, services or activities. This non-discrimination policy extends to the district's hiring and employment practices as well. This policy is in accordance with Title VI and Title VII of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; Section 504 of the Rehabilitation Act of 1973, as amended; the Americans with Disabilities Act of 1990, as amended; the Civil Rights Act of 1991; and the Tennessee State and Nashville Human Rights Laws. These policies also fully aligned with guidance provided by the U.S. Department of Education (USDOE) Office for Civil Rights on the voluntary use of race to achieve diversity and avoid racial isolation in elementary

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and secondary schools (U.S. Department of Education Office for Civil Rights and U.S. Department of Justice, 2011).

The MNPS magnet schools will be whole-school programs that provide all students with opportunities to participate in rigorous, theme-based instruction and enrichment activities. As described in CPP 3 and Table 5: Selection of Students, the District will use a race-neutral student selection process to enroll new students at the magnet schools. MNPS ensures that all communications with parents and community members about the magnet program and activities will be provided in multiple languages to reach a diverse population. Furthermore, participation in magnet activities will *not* require financial contributions from students or their families.

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

This section describes some of the major efforts the proposed magnet schools are making to ensure equal access and treatment. **These efforts demonstrate that MNPS is in full compliance with Section 427 of the U.S. Department of Education's General Education Provisions Act (GEPA).** This proactive approach to ensuring equitable access to and participation in the magnet schools initiative provides additional support for students with special learning needs, including ELLs, exceptional students, and struggling learners, and guidance support for all students.

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Support for Students With Special Learning Needs

Services for ELLs. MNPS provides a spectrum of English Language Development (ELD) services for ELLs enrolled in the District. These options range from school-level programs to personalized services for individual students. For example, schools may choose to meet the needs of their ELLs by offering a **New to English Program** for students who are new to the English language and need intensive sheltered instruction. Students enrolled in this program spend the majority of their instructional day together and may remain enrolled in this structured setting for up to one year. Alternatively, a school may offer an **ELD Sheltered ELA/Reading Classroom**, which is an ELA class taught by an ESL-certified teacher. Students scoring at the first four of five proficiency levels (Entering through Expanding) may be eligible to attend if this program is offered by a school. For classrooms with high percentages of EL students, a school may also decide to offer co-teaching instruction where EL certified teachers work in collaboration with content-area instructors to provide concurrent language support.

District schools may also choose to provide services to students on an individual basis. For example, a school may offer **ELD Focus Time**, during regular ELA class periods, where dedicated push-in support is offered to ELLs. Or, a school may offer **Language Support Time** for students during their regularly-scheduled intervention period in their daily schedule. For schools with fewer low-proficiency students, pull-out services are also available and are provided to students by an itinerant EL teacher.

Finally, the MNPS also offers a **Students with Interrupted Formal Education (SIFE) Program** that is designed for students who have emigrated from refugee situations. By offering this program at two elementary schools, the district provides these students an opportunity to adjust culturally in a sheltered environment while also receiving educational support. Students

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enrolled in this program are often not only ELs, but often illiterate in their native languages.

The proposed MNPS magnet schools currently serve EL populations ranging from 4% at Rosebank to 49% at Glencliff. The schools are dedicated to meeting the unique needs of their EL students; programs and services for these students at the proposed magnet schools are listed in Table 5.

Services for Exceptional Students. MNPS provides a continuum of special education services with the overarching goal of serving each student in the least restrictive environment possible. As evidence of this strategic approach to service provision, 65% of exceptional students district-wide are in general education for 80% or more of the day. School leadership and staff at each of the five proposed magnet schools also adhere to this approach, and in fact, four of out of the five schools exceeded this district average in 2015-16, with Inglewood reporting that 76% of its exceptional students were in a regular class at least 80% of the time and Whitsitt reporting that 77% of these students were in a regular class at least 80% of the time.

In order to further bolster these efforts and in accordance with the Individuals with Disability Education Act, MNPS works closely with Nashville and Davidson County municipal agencies to identify, locate, and evaluate all children with disabilities ages 3 to 21 through a joint Child Find initiative. Through this initiative, school personnel help families and caregivers identify signs that a child may require intervention. Once a child is identified, school personnel provide behavioral, social, emotional, academic, and attendance support to the child and their family regardless of whether the student is formally evaluated for exceptional education services. Through this initiative, MNPS aims to ensure that all students (including those in nonpublic schools and home-schooled) receive the appropriate level of educational intervention.

The proportion of students with disabilities at the magnet schools ranges from 7% at

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Inglewood and Whitsitt to 12% at Warner and Rosebank. As shown in Table 6, the proposed magnet schools are dedicated to meeting the needs of exceptional students through various targeted programs.

Table 6. Percentage of Exceptional Students and Programs/Services in the Proposed Magnet Schools

Schools	% Exceptional Students	Programs and Services to Meet Exceptional Students' Needs
Glencliff	7%	<ul style="list-style-type: none"> • Students receive materials that support their individual needs including sensory integration
Inglewood	10%	<ul style="list-style-type: none"> • Participation in an East Nashville Community Continuum of Services for learners with disabilities
Rosebank	12%	<ul style="list-style-type: none"> • All SWD staff are trained on writing instructionally appropriate IEPs • SWD coach leads monthly trainings on IEP components and ensures that they are all evident in IEP meetings; the accurate measurement of goals; and in teacher-supported instructional focuses in small-group/inclusion support. SWD coach also provides FBA/BIP training and support for SWD teachers. • Teachers utilize Wilson Reading, Enhanced Guided Reading, Touchpoints, and explicit instructional strategies

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Schools	% Exceptional Students	Programs and Services to Meet Exceptional Students' Needs
		in reading and math
Warner	12%	<ul style="list-style-type: none"> • Participation in an East Nashville Community Continuum of Services for learners with disabilities • Classroom teachers utilize PCI Reading and Orton Gillingham pedagogical approaches • Push-in and pull-out SWD services are provided by 3 SWD teachers and 3 para-professionals • Inclusion-focused approach: all students attend, at minimum, related arts classes with their typical peers • SWD teachers trained to improve their IEPs, complete FBAs and BIPs, and better support their autistic students
Whitsitt	7%	<ul style="list-style-type: none"> • Classroom teachers utilize Heggerty Phonemic Awareness Curriculum and Connecting Math Concepts

Academic Supports for Struggling Learners. MNPS provides comprehensive academic supports for struggling learners in each district school through a Response to Intervention (RTI) and Response to Instruction and Intervention (RTI2) framework. The Response to Intervention (and RTI2) approach offers nested interventions that escalate based on each student’s particular level of need. The RTI approach begins with universal high quality instruction for all students, which is referred to as Tier 1 in the RTI2 model. Students are then assessed annually to identify

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any academic or behavioral achievement gaps using the FAST (Formative Assessment System for Teachers) universal screening tool. Students identified by FAST as being below the benchmark then receive targeted short-term, evidence-based supplemental instruction in small-groups to remediate needs identified by their FAST performance. During this Tier 2 intervention, the teacher carefully “tracks” each student’s progress. Students who do not respond adequately to this second tier of support transition to more intensive, specialized one-on-one interventions (referred to as Tier 3), and if necessary, are evaluated for special education services. In fact, as of July 2014, specific learning disabilities are only identified through an escalation of RTI2 interventions and assessment. Across all three tiers, the RTI/RTI2 approach is further defined by a focus on data-driven decision-making to guide both student-level interventions and school and district level policies and programs. MNPS’s RTI2 framework was designed and supported by the State Board of Education and informed by several expert-driven working groups, including a Common Core Leadership Council, a state-wide RTI2 task force, and a school psychologist task force (to specifically develop the linkages between the RTI approach and special education services). Locally, the District’s efforts are supported by a leadership team composed of 45 district and school stakeholders that meets monthly to help schools track their progress.

Guidance Services. The goal of these services in MNPS is to develop students’ social and decision-making abilities and establish positive relationships by providing opportunities for them to bond with peers, counselors, parents, school personnel, and the community. Special counseling services are given to Title I–eligible students to support their success in the regular classroom environment. Title I also provides outreach services to families and planning and intervention through the use of pupil personnel committees to support eligible students.

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MNPS also participates in the Positive and Safe Schools Advancing Greater Equity (PASSAGE) initiative, a grant-funded program by the Annenberg Institute for School Reform (AISR) at Brown University that is focused on reducing disparities in school discipline and increasing services for vulnerable youth through development of collaborative wrap-around services. Currently, AISR is helping MNPS bring together multiple stakeholders including school staff, parents, law enforcement, clergy, and community leaders to address the needs of high-risk students. Stakeholders that come together through the work of the PASSAGE initiative are trained to “critically examine the structures, policies, and practices that perpetuate discipline disparities and contribute to negative school climate and culture” (AISR, 2017). A key metric and goal of this invaluable work is the reduction of suspension rates overall and among Black and Latino males in particular. There is indication that MNPS’ initial efforts through the PASSAGE initiative is working. According to a snapshot comparison of the same periods in the SY 2014-15 and SY 2015-16, for example, out-of-school suspensions decreased by 29% and in-school suspensions decreased by 47%. As stated in a 2015 article in *The Tennessean*, “Nashville is leading the pack” among PASSAGE grantees, according to the program’s principal associate at AISR (Gonzales, 2015).

All the aforementioned supports for students with special learning needs will ensure that all students at the proposed magnet schools will have equal access to the same rigorous instructional programs and enrichment and extracurricular activities.

Support for All Students in Science, Technology, Engineering, and Math Courses

Underrepresentation of girls and racial and ethnic minority groups—particularly of African American and Hispanic students—in STEM fields and courses of study is well documented by research (Chen & Thomas, 2009; National Science Foundation, 2013). At the same time,

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literature highlights the advantages to pursuing these fields, both in terms of employability and future earnings, as well as the cognitive benefits that STEM brings to all aspects of education (Malcolm & Webster, 2014; Reed & Berry, 2006). For these reasons, strategies that support participation among all groups of students, including both those who are traditionally underrepresented in STEM and groups who participate more frequently, is of utmost importance to providing equitable access and opportunities.

One of the best ways to build interest in STEM among children and adolescents—and especially students from racial and ethnic minority groups—is to provide hands-on applications of STEM learning (Hayden et al., 2011; Ilumoka, 2012). Opportunities for students and teachers to engage in explicit teaching and learning of STEM content and concepts within the context of real-world examples have been shown to build interest among students in STEM, including girls and racial and ethnic minority groups (Hayden et al., 2011). Furthermore, supplementing engaging, hands-on classroom experiences with out-of-school STEM activities, which may include extracurricular clubs, competitions, or activities during the school year as well as summer bridge and research opportunities, have proven to increase student engagement and motivation to pursue STEM fields (Maton et al., 2009).

MNPS is proud to be the recipient of an Investing in Innovation grant from the USDOE, *Girls and Guys Realizing Opportunities With STEM (G²ROW STEM)*. This *i3* Development project will foster and create a pathway for STEM exploration among middle school students with an emphasis on girls and underrepresented youth. Through high quality STEM extended learning and mentoring, G²ROW STEM seeks to heighten STEM aspirations and empower middle school students. G²ROW STEM: will impact girls and boys at seven Title 1 middle schools serving our highest-need students. Middle school students will have the opportunity to

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participate in after-school programming, STEM fieldtrips, theme-based summer camps, and mentorship with STEM role models. At the forefront, G²ROW STEM will boost student achievement in math and science, and create lasting opportunities that will ultimately inspire students to pursue careers in STEM.

Four of the five proposed magnets will be implementing programs under the STEAM umbrella; their project designs reflect many of the evidence-based and best-in-class strategies highlighted above (see Quality of Project Design for details on the school-specific plans).

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

According to the Diversity Management Plan, the District “views the inclusion of diversity in the educational experience of its students as a perpetual activity, not an activity with a calendar end-point” and holds to the belief that “quality, diverse schools at all grade levels are indispensable to the civic and educational purpose of this School District.” The centrality of diversity to the district’s mission and vision ensures that it remains a priority across policy and program areas. Furthermore, MNPS views diversity as “multi-faceted” and inclusive of race/ethnicity, income, language, and disability. The overall effectiveness of the district’s approach to diversity management is also demonstrated by the recognition that “the diversity experience of students is amplified and reinforced when staffing, certified and non-certified, is diverse, both in the schools and central office.”

Implementation of MNPS’ desegregation efforts is guided by this plan and is overseen by multiple layers of oversight and accountability, led by a dedicated Diversity Task Force. Among

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other responsibilities, this task force issues annual diversity reports that publically summarize student and staff desegregation efforts and outcomes across the district.

Overall, the district drives its desegregation efforts by monitoring and shaping the voluntary choices made by student and their families in response to opportunities and incentives made available by the District. In this way, MNPS is able to effectively eliminate, reduce, and prevent minority group isolation using race-neutral means. As described previously in the narrative addressing CPP 4, these strategies range from opening and closing district schools and adjusting transportation options to general and targeted recruitment of students to schools of choice. Policy decisions adhere to applicable guidance, including the USDOE's Guidance on the Voluntary Use of Race to Achieve Diversity and Avoid Racial Isolation in Elementary and Secondary Schools.

In late March 2017, the MNPS Board of Education approved a new strategic plan which is rooted in the findings from the 2017 Transition Team Report and is informed by the values and vision of the MNPS. This ambitious new strategic plan aligns with the District's ongoing Diversity Management Plan and binds MNPS to several goals, high-level actions, and strategies that directly advance desegregation across the county. Most directly, the strategic plan elevates the goal of [creating] "an environment that promotes active student engagement and consistent improvement in academic achievement among PreK-12 students **from all backgrounds** and programs." This goal is supported by several strategies which further the District's desegregation efforts, including an emphasis on the **(cultural) relevance of curriculum** as well as the rigor, **equitable access** to high quality education, and the **establishment of positive school climate** and culture districtwide. Furthermore, within this plan the District commits to expanding and strengthening the quality of education for all students through a focus and improvement of the choice process, which includes plans to:

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- Restructure and optimize choice in enrollment processes, structures, and school and program options.
- Expand access and availability of programs across district schools and clusters.
- Investigate the role and costs transportation services play in increasing student participation in MNPS schools.

Also consistent with the proposed magnet initiative is the strategic plan's elevation of family and community engagement to a strategic goal, wherein MNPS commits to "Creat[ing] strong partnerships with our family members, guardians, and the community to collectively improve student outcomes and MNPS's contribution to greater Nashville."

(B) Quality of Project Design

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

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

As noted in Section A (Desegregation), in July 2016, Dr. Shawn Joseph assumed the helm of the MNPS in his role as Director of Schools. Integral to the work of the Superintendent's Transition Team was the subcommittee on student achievement, chaired by Michael Casserly, Executive Director of the Council of the Great City Schools, which was charged with focusing on the instructional program of the school district and ways in which the district might improve

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student academic attainment. In its February 2017 report, the subcommittee noted that while the district has seen modest improvements in some key academic indicators over the last several years (e.g., graduation rates), “However one wants to measure it, student achievement in core subjects is lower than anyone would like it.” Moreover, they found that “there is no evidence that achievement gaps—whether defined by race, income, language status, or disability—show any real sign of narrowing.” The findings of this subcommittee, as well as those of the other three subcommittees of the transition team, were a call to action, and led to the establishment of the following vision: “Metropolitan Nashville Public Schools will be the fastest-improving urban school system in America, ensuring that every student becomes a life-long learner prepared for success in college, career, and life.” To achieve this vision and mission—we deliver a great public education to every student, every day—in January 2017, MNPS articulated a set of core values that set the framework for the District’s operations:

- **WHOLE LEARNER**—We believe in meeting each child at the point of need to maximize individual unlimited potential and success.
- **LITERACY**—We believe what research shows: Early reading success is a critical factor in a child’s likelihood of graduating from high school and experiencing future life success.
- **EXCELLENCE**—We believe all students benefit from high-quality instruction and high expectations each year, in each subject, and in each classroom.
- **RELEVANCE**—We believe students learn best when they are inspired by real-world challenges that promote critical thinking, inquiry, problem solving, and creativity.
- **INNOVATION**—We believe teaching and learning is enhanced through creative thinking and experimentation across all subject areas including STEM, literacy, and the creative arts.
- **TALENT**—We believe in supporting, developing, respecting, compensating, and retaining

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our teachers, leaders, and staff.

- **COLLABORATION**—We believe that engaging parents, community members, students, and other stakeholders in the educational process leads to better outcomes for all of our students and benefits the broader Nashville community.
- **EQUITY**—We believe in equitable access and opportunities for all students from early childhood through graduation.
- **DIVERSITY**—We value, respect, and celebrate students, staff, and educators from different backgrounds.

Pillars of MNPS Magnet Program Design

The MNPS magnet initiative has been designed so that it is fully aligned with and supportive of the District’s vision, mission, and values. In particular, the key pillars of the magnet program design embody the District’s commitment to providing innovative, high quality, and relevant educational experiences to all students regardless of background. These key pillars include a focus on **rigorous instruction** in order to raise the level of student achievement and close achievement gaps; a commitment to **human capital development** to support effective implementation of the magnet school program designs; efforts to promote **positive school climate**; and a robust **family and community engagement strategy**. Each of these pillars supporting the MNPS magnet initiative is described below.

Rigorous Instruction. Underscoring the findings of the achievement sub-committee, results of the 2014–15 Tennessee state assessments are presented in Table 7 and 8.¹ Achievement levels

¹Data are presented for the 2014–15 school year because the district transitioned to a new accountability system in 2015–16 and the results of the new assessments have not yet been

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are low across the district—about a third of students (34%) were at or above proficient levels in ELA and just under half were in math (45%). In both subject areas, there were substantial achievement gaps between White students and Black and Hispanic students across the district, and between all students and low-income students.

Two of the five proposed magnet schools have been identified by the State of Tennessee Department of Education as priority schools, with the remaining three at risk of identification during the next state determination (Summer or Fall 2017). Priority schools are those that have been identified in the bottom 5% of schools, statewide, in math, English language arts, and science. Currently, all five of the proposed magnet schools fall in the bottom ten percent of overall achievement statewide.

As shown, as of spring 2015, ELA and math proficiency rates at the proposed MNPS magnet schools were substantially lower than the district averages. For example, at Whitsitt, approximately 13% of students met the learning standards in ELA compared to 34% of students across the district and at Rosebank, 14% of students met the learning standards in math compared to 45% of students across the district. These results also show consistent achievement gaps between white and non-white students across schools and subject areas. Data are not presented when the number of students in a subgroup is less than 10.

Table 7. Percentage of Students At or Above Proficiency on ELA State Standards

Student Group	Glenclyff	Inglewood	Rosebank	Warner	Whitsitt	District (K-4)
	N=168	N=99	N=85	N=110	N=190	N=13,582

validated.

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Student Group	Glenclyff	Inglewood	Rosebank	Warner	Whitsitt	District (K-4)
	N=168	N=99	N=85	N=110	N=190	N=13,582
All Students	27%	17%	19%	15%	13%	34%
Asian	-	-	-	-	-	48%
Black	29%	13%	16%	14%	16%	26%
Hispanic	22%	-	-	-	9%	24%
Indian	-	-	-	-	-	38%
Pacific Islander	-	-	-	-	-	56%
White	36%	31%	24%	-	18%	51%
Economically Disadvantaged (FRL)	25%	18%	17%	13%	11%	26%
Limited English Proficiency	17%	-	-	-	2%	14%
Students with Disabilities	15%	6%	7%	0%	0%	10%

Table 8. Percentage of Students At or Above Proficiency on Math State Standards

Student Group	Glenclyff	Inglewood	Rosebank	Warner	Whitsitt	District (K-4)
	N=174	N=99	N=85	N=111	N=195	N=13,737
All Students	44%	30%	14%	18%	23%	45%

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Student Group	Glenclyff	Inglewood	Rosebank	Warner	Whitsitt	District (K-4)
	N=174	N=99	N=85	N=111	N=195	N=13,737
Asian	-	-	-	-	-	62%
Black	38%	27%	14%	17%	24%	34%
Hispanic	43%	-	-	-	16%	41%
Indian	-	-	-	-	-	44%
Pacific Islander	-	-	-	-	-	67%
White	47%	39%	16%	-	41%	60%
Economically Disadvantaged (FRL)	43%	31%	13%	18%	21%	38%
Limited English Proficiency	37%	-	-	-	8%	34%
Special Education	5%	0%	7%	0%	0%	17%

Under Dr. Joseph’s leadership, the Office of Priority Schools provides consistent and robust support to schools targeted for improvement. The office is staffed with an executive officer who reports directly to the Chief of Schools and who provides the overall vision for school improvement. In addition, the office has two principal supervisors who provide intensive support to the principals and their staff. A curriculum coordinator oversees academic programs and supporting professional development. Two data coaches work directly with the schools to build the schools’ capacity for data-driven improvement. The office is supported by an annual \$1 million grant and five of the priority schools (including Inglewood and Whitsitt) have five-year

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school improvement grants to support their turn-around efforts. All priority schools are supported in their improvement efforts through contracts with Performance Matters and Achievement Network to provide the additional external support needed to effectively employ a continuous improvement model. The elementary priority schools employ a “balanced literacy” approach with intensive intervention support to struggling students from Reading Recovery. Math achievement is supported by intensive professional development for teachers on the new state math standards. The schools receive district-level professional development and have instructional coaches to provide school-level support. Because the State did not administer assessments in grades 3-8, MNPS has measured improvement in these schools through text-level assessments in reading and interim benchmarks in both reading and math. Our elementary priority schools, especially the two included in this application, Whitsitt and Inglewood, have shown dramatic improvements on those district assessments. Our one priority high school showed the highest level of student growth in ELA, a level 5 on the Tennessee Value-Added System, based on state assessments for school year 2015-16.

In addition to the program of supports the five proposed magnets are receiving and will continue to receive through the Office of Priority Schools, these schools will benefit from the District’s commitment to advancing STEM and STEAM teaching and learning practices. To support this work, in 2017, the District launched a new strategic plan, definition, mission, and vision for STEM in the district, emphasizing a STEAM approach. The District currently employs a Director of STEM, and will hire three STEAM district coaches to support STEAM curriculum and instruction, provide teacher support, and enhance and expand the District’s existing STEAM professional learning activities. Moreover, the District supports STEAM and STEM integration through enhanced technology and decreased student-to-computer/device ratio, computer science

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training and curriculum, and District funding for Maker Space equipment.

Within the context of this strategic plan, the District has launched a system-wide initiative to work directly with all 38 middle schools serving the 25,000 students enrolled in grades 5-8 to build their capacity in STEAM. To this end, in January 2017, MNPS issued a request for proposals for STEAM-related products, training, and consultation. The District is specifically searching for the most qualified vendor(s) to provide a range of services including, but not limited to, individualized job-embedded coaching and train-the-trainer models, digitally accessible instructional material that meets state curriculum standards, and formative and summative assessment tools. MNPS is also committed to engaging the community and business partners in their STEAM initiative. To this end, the vendors are required to propose a plan for engaging these stakeholder groups. Finally, consistent with the District's emphasis on professional development, vendors are also required to build professional learning communities (PLCs) among middle school educators and facilitate the sharing of best practices. MNPS is currently in the final stages of selecting the vendor(s) and projects to leverage this procurement to support the four STEAM elementary schools in this proposal.

To further support development of STEAM practices into teaching and learning, all five proposed magnet schools will integrate curriculum materials from the **Great Explorations in Math and Science (GEMS)** instructional model into thematic magnet instruction. GEMS is a research-based instructional program for which there is strong evidence of positive impacts on student achievement, as described in CPP 2. As a supplemental curricular resource, teachers will use GEMS to design and deliver real-world learning experiences for students through extended explorations of core topics. The grant-funded School Curriculum Specialist at each school will work with teachers to align GEMS with core content in each of the quarterly thematic units and

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will provide coaching and support to classroom teachers in integrating GEMS into classroom instruction.

Human Capital Development. MNPS is deeply committed to human capital development, recognizing that student achievement is intricately tied to teacher quality. To achieve excellence in instruction, the District delivers professional development and technical assistance through several internal mechanisms. Most important is the District's system of instructional coaches who provide intensive in-school support to teachers. The instructional coaches are trained monthly by the District and then provide this knowledge and skills to instructors as needed.

In addition, the District supports a Leading for Literacy Team in each school, comprising the principal, several teachers, and a literacy coach. These teams are tasked with moving forward the District's systemic focus on literacy by attending district-wide trainings and then supporting teachers and staff within their own schools. At the same time, both the Office of English Language Learners and the Office of Exceptional Education provide further in-school support to teachers by using district coaches and making instructional resources available.

Finally, teachers are provided with ongoing online skill reinforcement and professional development through SchoolNet, an online system that provides district, state, and national instructional and PD resources. Within the context of these district-wide supports, Subsection 3 provides detailed information on the professional development plan that will be implemented to support effective implementation of the five magnet program designs.

Tennessee has a strong teacher evaluation system which includes a robust observational protocol, the Teacher Educator Achievement Model (TEAM), and required components based on teachers' student achievement and growth scores. All administrators must be TEAM certified through a rigorous on-line assessment after attending a three-day State training. The TEAM

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process provides not only the annual evaluation summative rating for teachers, but it also provides direct feedback to teachers on areas for improvement in classroom instruction. The school-level administrators and instructional coaches help the teachers design their professional growth based on the TEAM results. MNPS also uses the teacher evaluation system to deploy the most effective teachers to the schools with the neediest students. This is done through selective recruitment and preferential hiring for high-need schools, including the schools in this proposal.

Positive School Climate. MNPS places a premium on the importance of social-emotional learning (SEL) and the role that positive school and classroom climates has on the students' ability to thrive and achieve. The district defines SEL as "a process through which children and adults learn to recognize and manage emotions, demonstrate care and concern for others, develop positive relationships, make good decisions, and behave ethically, respectfully, and responsibly." In fact, MNPS has implemented an ambitious SEL initiative that supports this work through teacher PD reinforced by formative on-the-ground observations conducted by trained District staff. At the core of this work is the requirement that each school improvement team choose one of three school-wide SEL programs for school-wide implementation:

- SEL Foundations, which is designed to create culturally responsive and socially and emotionally supportive learning environments through core competencies such as self-awareness, self-management, social awareness, responsible decision-making, and relationships skills.
- Restorative Practices, which is designed to promote collaboratively-set expectations for teachers and students that are reinforced using a series of action-specific practices such as Restorative Circles and Restorative Conferences. In addition, restorative practice is built around the idea that those who have harmed others can be empowered to repair that harm

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through the support of the school.

- Positive Behavior Intervention Support, which is a team-based and proactive approach to classroom management that adheres to the idea that behavioral expectations, like academic content, can be taught to students.

In addition to choosing a school-wide approach, teachers and school staff are offered a breadth of supplemental PD trainings that they can choose from (described in subsection 3). These range from brief one-hour sessions to full or multi-day train-the-trainer models. MNPS also conducts walkthroughs of each school, during which time teams of District staff observe for social and emotionally responsive environments, techniques, and behaviors in the school-wide and classroom environments and in teacher instruction, classroom management, and discipline. The results of the district's walkthroughs are shared with school leaders through actionable recommendations.

Within the proposed magnets, teachers and staff at Inglewood, Whitsitt, and Warner have been trained in the Trauma Informed Schools program and staff at Rosebank have received training in Restorative Classrooms/Practices (staff at Glencliff intend to receive this training in the near future).

Strong Family-Community Ties. The strength of the District's family engagement efforts rests on several pillars, including a strong communication plan which provides universal guidance across MNPS offices, a relatively new website that is oriented towards offering an accessible experience for parents, and the District's Family Information Center (FIC). The FIC is the family liaison office with a dedicated phone number, designed to provide parents with individualized support. This office helps parents in numerous ways, including during the school choice process.

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Since MNPS enrolls a large portion of ELL students, the District has prioritized its efforts to engage with non-English language background (NELB) families, which, in coordination, provide parents and caregivers with the tools to navigate the complexities of the school system, advocate for their children, and better communicate with their children's teachers. Two of the District's programs are designed to reduce the language gap. For instructors, MNPS offers Spanish for Educators, a program that helps teachers learn basic Spanish language skills so that they can better engage with parents. For parents, two programs are made available: DynEd, which is an online English-language course that parents can access on any computer or mobile device, and LEAF Nights, which is a weekly evening session hosted at a middle school where parents learn English-language skills while their children participate in science or literacy classes. MNPS also deploys 16 parent ambassadors who speak the district's top four languages other than English (Spanish, Arabic, Kurdish, and Somali). These parents meet for monthly trainings and help new families become acquainted with the District. Furthermore, MNPS hosts a monthly EL Refugee Parent Orientation for refugee families that are interested in learning the basics of United-States-style education. These orientations are coordinated with the region's resettlement agency.

Individual Magnet School Program Designs

Each school selected to participate in the magnet initiative 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. Schools were provided with copies of several tools that were developed by the District to guide the teams through the planning process. These tools include a school-based program design worksheet, a budgeting worksheet, a template for program

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partnership descriptions, a template for letters of support, and signature pages for gathering support from school staff and parents. 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. A detailed description of each proposed magnet school program is provided in the section that follows.

GLENCLIFF ENTREPRENEURSHIP STEAM MAGNET ELEMENTARY SCHOOL

Glenclyff Elementary serves 545 students in grades K-4 in southeast Nashville. Supported by the magnet grant, Glenclyff will transform into a whole-school STEAM magnet with a focus on Entrepreneurship. Students will gain a strong understanding of what it takes to become an entrepreneur by participating in project-based learning activities that challenge them to envision, design, prototype, and market innovations for our future. The theme supports the school's current commitment to fostering the development of 21st century skills, including communication, technological abilities, teamwork, and critical thinking among all Glenclyff learners.

As a whole-school magnet, Glenclyff will engage all students in the study of STEAM entrepreneurship in a variety of ways: 1) a new K-4 interdisciplinary thematic curriculum; 2) project-based learning activities in a new Innovation Lab, which will provide students with hands-on experience in design and business simulations; 3) re-envisioned technology-infused arts instruction to support the magnet theme; and 4) extension activities to provide additional curricular enrichment experiences for students. The key components of the magnet program will be supported by a robust menu of PD for staff (described later in the Quality of Project Design), extensive curriculum development, strong partnerships with business and community, and activities to weave families into the fabric of the magnet program.

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STEAM Entrepreneurship will be integrated into teaching and learning through the use of an **interdisciplinary thematic curriculum** based on Engineering is Elementary (EiE) units of study. EiE is designed to engage students in hands-on learning that fosters direct applications of content area knowledge to solve current-day problems and design solutions for challenges yet to be encountered. EiE offers instructional modules that cover a broad set of real-world STEAM topics, such as acoustical, environmental, industrial, and mechanical engineering. The curriculum helps build a strong foundation in elementary school for further STEAM learning in middle and high school. To ensure students get broad exposure to a range of STEAM opportunities, thematic units will integrate content and standards from the District curriculum in social studies, ELA, math, science, and art to address STEAM concepts and ensure vertical alignment across grades. EiE is fully aligned with Common Core Standards, NGSS, and Tennessee Science Standards.

Curriculum development will begin in Year 1 and continue over the course of the five-year grant. In Year 1 of the grant, teachers will work together to align at least one thematic unit per grade level. In Years 2 and 3 each, teachers will review and revise the units and align two additional units of study. In Years 4 and 5, all teachers will have completed and implemented four thematic units of study. All units will be aligned with Tennessee State Academic Standards and Tennessee Science Standards. Examples of two thematic units are presented in Table 9.

Table 9: Examples of Entrepreneurship STEAM Curriculum Units

Grade 3 Unit: Musical Language Around the World		
Essential Question: <i>How can the language of music influence 21st century Entrepreneurs?</i>		
Cross-Curriculum Connections	Entrepreneurship	Extensions

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	Challenge	
<p>Social Studies: Analyze different origins and characteristics of music in different cultures.</p> <p>ELA/Writing: Read about the history of different types of music and cultural influences of music; write about and illustrate the different types of music; write and compose the lyrics for audio recordings.</p> <p>Math: Use and learn fractions to indicate the language of music for their audio and visual recordings</p> <p>Science: Explore the mathematical properties of musical instrument strings, how sound waves travel, and the anatomy and physiology of human hearing.</p> <p>Art/Technology: Research different music forms in various countries around the world. They will use the Samsung Gear VR visual reality headset product to experience 360 virtual reality experiences. Students will draw and write about their experiences.</p>	<p>Students will create music video and audio recordings designed to promote their local community, school, and the Nashville Region.</p> <p>Students will design and engineer a website to market school-wide visual and multimedia products.</p> <p>Students will design advertising and marketing strategies for the products.</p> <p>Students will create and sell music video and audio recordings in</p>	<p>Field trips to Nashville</p> <p>Symphony and recording studios</p> <p>Jazz in the Schools- jazz artists will perform at schools</p> <p>Shark Tank- students will pitch their audio recordings and music video presentations</p>

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	school store.	
<p>Grade 3 Unit: The Impact of Weather</p> <p>Essential Question: <i>How do weather conditions influence architecture and engineering?</i></p>		
<p>Cross-Curriculum Connections</p>	<p>Entrepreneurship</p> <p>Challenge</p>	<p>Extensions</p>
<p>Social studies: Research how meteorologists compare and contrast the outcomes of historical events on the communities impacted by adverse weather conditions.</p> <p>ELA: Read “The Cloud” and create narrative stories about clouds to describe scientific ideas; conduct presentations of research findings with peers using video recordings.</p> <p>Math: Examine components of architectural measurements based on their building structures and test ideal shapes and structure for their building prototypes.</p> <p>Art: Draw and design a visual representation of</p>	<p>Design and engineer products for students to use at home to use environmental conditions (such as clouds or temperature) to predict and communicate future weather conditions</p>	<p>In-class visit from meteorologists, architects, and engineers</p> <p>Field trips to Adventure Science Center</p>

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their building structures. Engineering: Create building prototype based on architectural standards designed to withstand adverse weather conditions specific to a given location.		
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Each unit will include project-based learning activities and design challenges related to the theme of entrepreneurship that will take place in the newly designed **Innovation Lab**. The lab, which will be located in a classroom, will be transformed into this innovative learning space. The classroom will be equipped with Maker Space materials aligned to the school theme to spark students’ creative and inventive spirit, and will provide technology resources to support all forms of communication including print, digital, audio, and multimedia. Students will direct and broadcast to the school and the greater community to share evidence of learning. Technology kits such as circuit-building materials (e.g., Little Bits and Snap Circuits), coding materials (e.g., makey-makeys), tynker magnetic blocks, tinker toys, Legos, and 3D Doodler pens will support student exploration and experimentation.

In partnership with Junior Achievement (JA) of Middle Tennessee and using the JA curricula “It’s My Business” and “BizTown”, Glenciff students will create a **student-run school store**. Students will learn principles of marketing, production, and distribution to create goods and services for the store; how to develop a business plan; the cost of buying and manufacturing products; advertising and product placement; and financial literacy. The store will feature products created and produced in the Innovation Lab. Proceeds from the sales will be used to support development and production of new goods and services in the Lab, supporting the

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sustainability of the program. Profits may also be used as venture capital to fund projects that students will pitch to a panel. This opportunity would be similar to the television show Shark Tank and would provide valuable learning opportunities for students. The panel would be comprised of community members, business partners, and school stakeholders. In addition, Comcast staff will visit the school at least quarterly to discuss career pathways, mentor students on sales and marketing ideas related to the school store and provide feedback on student “Shark Tank” projects.

To support creative thinking and invention, students in all grades will participate in weekly **technology classes** that will provide opportunities for students to explore various technology tools that are used to create and communicate ideas. The technology curriculum will include coding, robotics, simple app development, creation of gaming and virtual reality experiences, and digital design. Students will gain skills in technology operations and concepts, computational thinking, as well as digital communication, collaboration, and creativity.

Glenclyff will partner with Cane Ridge HS’s *Raven Media* to learn how to develop and produce Glenclyff’s own news show. Cane Ridge students will mentor Glenclyff students in basic audio and video production and post-production skills. Glenclyff will also partner with Nashville Prevention Partnership’s “Rep Your Voice” program, who will train students to use video, photography, and graphic design as a platform for self-expression, product marketing, and school advertising.

Tennessee State University (TSU) Extension Program will lend their expertise to the Glenclyff staff and students in developing an outdoor classroom space to provide additional opportunities for hands-on experiences and physical activity (landscape architecture,

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horticulture, etc.). The outdoor classroom will also provide students with another avenue to expand their interest in science and math through connecting with nature.

Parents will play a key role in fostering students' innovation and inquiry. Magnet staff will engage parents in student learning by organizing quarterly Shark Tank Exhibition Nights where students will have opportunities to showcase and pitch the innovations created in the Innovation Lab to family members and peers. The events will be organized by grade level (K-2 and 3-4) to allow parents to observe student work and participate in hands-on learning activities with their children. In addition to the exhibition nights, magnet staff will share information with parents through print and electronic newsletters, callouts (telephone, email, and text communications), and the school website. School-based parent workshops, facilitated by the magnet staff and family involvement specialists, will equip parents with knowledge and skills to replicate STEAM challenges with their children at home.

INGLEWOOD ENVIRONMENTAL SCIENCES STEAM MAGNET ELEMENTARY SCHOOL

As part of MNPS's magnet initiative, Inglewood Elementary School, which serves 230 students in grades K-4, will become a whole-school Environmental Sciences STEAM magnet. The new magnet program at Inglewood will use a multi-faceted approach to engage all students in continuous STEAM learning throughout the school day through (1) a transdisciplinary, thematic curriculum; (2) elective periods in the new STEAM lab; (3) project-based learning with a resident scientist; and (4) field trips and other extension activities. Through the magnet experience, all students will achieve mastery on the four pillars of performance-based instruction, which serves as the foundation of teaching and learning at Inglewood—understanding, application, communication, and extension.

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The focal point of STEAM learning will be the **transdisciplinary Environmental Sciences curriculum**. Beginning in Year 1 of the grant, teachers at all grade levels will collaborate to review the NGSS to identify cross-cutting standards and develop a K-4 vertically-aligned scope and sequence for science that aligns with the Tennessee State Academic Standards. Using this customized scope and sequence, teachers will identify quarterly environmental science themes that will serve as the content for the units of study and STEAM challenges and will help students build greater depths of knowledge and understanding from grades K to 4. The quarterly units will engage students in learning activities that weave together standards-based science, social studies, ELA/writing, math, and the arts as they work to design and prototype solutions to an **environmental science STEAM challenge**. In Year 1 of the grant, teachers at all grade levels will develop and implement one thematic unit; in each of Years 2 and 3, teachers will revise the existing unit and develop two additional units; and by Year 4 and 5, teachers at all grade levels will have developed, tested, revised, and implemented four quarterly thematic units. All units will be fully aligned with Tennessee State Academic Standards and NGSS. Examples of vertically-aligned units of study are presented below.

Table 10: Examples of Thematic Curriculum for Unit on Natural Hazards

Grade 1: Bridges		
Essential Question: <i>How can we build a bridge to allow the largest number of people to evacuate Nashville in the event of a flood of the Cumberland river?</i>		
Cross-Curriculum Connections	STEAM Challenge	Extensions
Social studies: Read and watch video from primary sources on 2010 flood in Nashville and	Build a model bridge with a maximum	Virtual interview with flood

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<p>discuss benefits and challenges of the evacuation; create picture timelines to show sequence of events.</p> <p>ELA/Writing: Participate in shared research about bridge building and create opinion writing to pitch own bridge designs to the Mayor of Nashville.</p> <p>Math: Use concepts of length and width and number of units to calculate materials needed for bridge designs.</p> <p>Science: Apply engineering design principles to solve problems, ask questions, make logical prediction, plan investigation, and represent data in developing bridge model.</p>	<p>width that can withhold the weight of two bottles of water.</p>	<p>evacuee from Charleston, SC</p> <p>Field trip to the Frist Center, Guest lecture by professional architect</p>
<p>Grade 4: Save My House!</p> <p>Essential Question: <i>What man-made products can be used to resist erosion or destruction from natural disasters due to water and wind?</i></p>		
<p>Cross-Curriculum Connections</p>	<p>STEAM Challenge</p>	<p>Extensions</p>
<p>Social studies: Conduct research about the impact of natural disasters on housing in Malibu, California and prepare questions for skype interview with the city’s Mayor.</p>	<p>Build a model house with a demonstrated ability to stop erosion around the house.</p>	<p>Virtual interview with a member of the City of Malibu, CA</p>

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<p>ELA/Writing: Conduct research on historical events related to natural wind and water disasters.</p> <p>Math: Use calculations of area, perimeter, and fractions to create dimension for model house.</p> <p>Science: Identify basic features of water cycle and impact on weather and climate; design a simple model to illustrate how wind and movement of water after the earth’s surface and can impact human-made structures.</p>		<p>mayor's office</p> <p>Field trips to the Shelby Park Nature Center, KSU Environmental Education Research Farm</p>
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The school’s newly-developed **STEAM Lab** will serve as the hub for students’ learning and exploration, and for addressing the design challenges built into the thematic units. The lab will be located in a large classroom that is adjacent to the school library to allow for collaboration between the School Curriculum Specialist who will provide lab instruction and the school librarian who will help identify and develop STEAM instructional resources. The lab will be fully equipped with technology and print resources, learning materials and manipulatives, and supplies needed to foster student inquiry and exploration, such as mobile laptop lab, teacher and student computer stations, MakerSpaces, iPads, Eno boardes, and 3D printers.

The full-time, MSAP-funded School Curriculum Specialist will coordinate with classroom teachers to align STEAM instruction with the thematic units of study and will co-teach lessons with classroom teachers to support the design challenges and thematic instruction. Four days a week, the Specialist will be supported in the Lab by a **resident scientist from Vanderbilt (University) Center for Science Outreach**, who will provide ongoing PD for the Specialist and

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classroom teachers in science content and will support student learning through hands-on lab lessons and activities. All classes K-4 will be scheduled for STEAM lab once every two weeks as part of the related arts rotation; in addition, teachers will have opportunities to bring their classes to the lab during unscheduled class periods. Every Friday, students in grades 2-4 will participate in interest-based clubs during the related arts rotation to provide deeper exposure to STEAM concepts and learning. Topics of the clubs will change based on student demand and as students develop higher levels of competencies in STEAM. Examples of clubs will include coding, meteorology, robotics, debate, technology, art, and STEAM.

Artifacts of student learning processes and products from the environmental sciences design challenges will be presented to families and community members at quarterly **STEAM Showcases**. The showcases will be held in the evenings to coincide with other school events, such as musical performance, art shows, and book fairs to bring families to the school to learn about the magnet program and observe and engage with their children's accomplishments. Magnet staff will also share information about the program with parents during Back to School Night and Open Houses; through newsletters, call-outs (telephone, email, and text messages from the principal), and social media; and in presentations at PTO meetings and during parent teacher conferences.

Magnet staff will also collaborate with the school's Community Achieves Coordinator to integrate family magnet activities and events with other community-related services. The Community Achieves Coordinators, District staff who support MNPS's community schools initiative, work with families ensure that they have access to resources and information to support student learning, such as access to clothing, food banks, and translation services and connections to social service agencies and community partners. The coordinator works to build

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trust among Inglewood families and will serve as a strong resource for reaching even the school's hard-to-reach populations to engage them in the new magnet program.

ROSEBANK STEAM MAGNET SCHOOL: INTEGRATED TECHNOLOGY AND BIOLOGICAL SCIENCES

Rosebank STEM School, located in East Nashville, is applying to become a new STEAM Magnet School for Integrated Technology and Biological Sciences. Rosebank is currently going through a comprehensive renovation to remodel the indoor spaces and upgrade the technology in the building, which is expected to be completed by December 2017. All classrooms will be equipped with ENO board technology as well as audio enhancement technology. The proposed school-wide magnet program will engage all 300 students in grades PreK-4 in hands-on, immersive, and experiential learning opportunities that will develop investigation, research, and procedural skills. Technology will be integrated into all aspects of the day-to-day activities at Rosebank to prepare students for success in their upcoming rigorous middle school coursework and for the future tech-based workforce.

As a STEM school, Rosebank already has a unique STEM framework in place. All 14 classes of students at Rosebank rotate through the STEM lab each week; the STEM lab is a dedicated full-time science lab operated by the MNPS-funded STEM Facilitator and a Resident Scientist from the Center for Science Outreach at Vanderbilt University. The new STEAM program will use the existing lessons as a platform to develop a comprehensive transdisciplinary, STEAM curriculum. The curriculum will be complemented with project-based learning experiences in a newly-equipped STEAM lab and weekly theme-related enrichment clubs, activities, and field trips. Through these experiences, students will demonstrate greater awareness and application of

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STEAM skills; develop STEAM-focused technology and coding skills; achieve mastery of science content; and improve their informational writing skills.

A key element of the magnet program will be a new **transdisciplinary STEAM curriculum** that integrates hands-on learning of biological sciences content into other core content areas. Development of the curriculum will begin in Year 1 of the grant with teachers from all grade levels collaborating to align NGSS and Tennessee Learning Standards to identify cross-curricular connections and vertical-alignment opportunities. Teachers at all grade levels will review existing STEM lessons and use them as a scaffold for developing a new, comprehensive, quarter-long STEAM unit which will be implemented throughout the spring semester. Each unit will include connections to ELA, math, social studies, and related arts, and will be complemented by hands-on experiments in the STEAM lab. Additionally, each unit will include extension activities, such as field trips, to provide real-world connections to classroom learning. In Years 2 and 3 of the grant, teachers will review and revise the Year 1 unit and develop two additional cross-curricular units. By Years 4 and 5, the faculty will have developed, tested, revised, and implemented four quarterly thematic units. Examples of two transdisciplinary units are described in Table 11.

Table 11: Examples of Thematic Curriculum Units

Grade Topic	Essential Question	Cross-Curricular Connections	Extension Activities
Grade 1 Earth Science	How does the presence of humankind affect	ELA: Use informational texts to gather prior knowledge about geological cycles of Earth.	Trip to Agricultural STEM display at TN State Fair to learn how

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Grade Topic	Essential Question	Cross-Curricular Connections	Extension Activities
	the geological cycles of Earth and result in continuous global change?	<p>Social studies: Create timelines to depict colonization of humans and the environmental impacts caused by colonization.</p> <p>Math: Use measurements to draw accurate timelines.</p> <p>Arts: Design topographical maps based on research.</p>	<p>disruption of land for housing impacts water table.</p> <p>Trip to Adventure Science Center to see planetarium show with data and simulations on the impact of humans on the planet.</p>
Grade 4 Atmospheric Science	How does the presence of humankind affect the physical and chemical makeup of the atmosphere on Earth and affect other organisms on the planet?	<p>ELA: Use informational texts to research primary causes of negative and positive impact of humans on Earth’s atmosphere.</p> <p>Math: Use tools to measure condensation, temperature, and weights of various plants and soils to study atmosphere conditions.</p> <p>Science: Conduct experiment to observe impact of specific</p>	<p>Participation in a demonstration by Metro Water of the water cycle.</p> <p>Field trip to the Adventure Science Center to learn about atmospheric disruptions and impact of human habitation and energy consumption.</p>

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Grade Topic	Essential Question	Cross-Curricular Connections	Extension Activities
		pollutants on simulated atmosphere and plants.	

The interdisciplinary units will be designed to expose students to a variety of texts, including engineering notebooks, field guides, interactive journals, schematics, and maps. Students will be challenged to use expository writing, diagrams, labels, hypotheses, procedures, data charts and tables, and other components of technical writing to exhibit their content knowledge. Technology integration will provide students with the opportunity to master basic technology skills and to develop higher-level skills, such as coding and design. The STEAM lab will be equipped with a variety of portable technologies that will be available for use in individual classrooms as well as in the lab including ozobots, sferos, silhouette cameo, scientific probes, makey-makeys, and code-a-pillars. Teachers will use Google classroom to build portfolios for each student, documenting their projects, research, and graded activities. Access to this content will allow students to reflect and learn from their previous work, encouraging scientific content mastery.

All classes at Rosebank will have one 60-75 minutes period each week to participate in hands-on learning activities and STEAM challenges in the STEAM Lab. The STEAM Lab will be staffed by a two-person STEAM Team comprising the grant-funded STEAM Specialist and a full-time resident scientist from Vanderbilt, who will participate in the STEAM TEAM and co-teach STEAM lessons and activities in the STEAM Lab and classrooms. The resident scientist, who has an established relationship with the Rosebank school community having served in this role during the 2016–17 school year, will also participate in collaborative planning with

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classroom teachers and serve as a resource in development of the thematic curriculum units. During the scheduled STEAM Lab period, classroom teachers will bring students to the lab and will co-teach lessons and activities with a member of the STEAM team. Additionally, one member of the STEAM Team will conduct one push-in 60-75 minute period in the classroom to co-teach STEAM lessons. The STEAM Lab lessons will be developed collaboratively with classroom teachers and the STEAM Team to align with the thematic units and classroom instruction and standards.

Community partnerships with **Tennessee Department of Environment and Conservation (TDEC)** and the **Nashville Zoo** will further our mission of providing students with real-world experiences that will help them master scientific content. With TDEC, 4th grade students will work in small groups on-site at the local water plant to learn about different ways to incorporate water conservation as well the scientific process of how water is treated. Through a new partnership with the Nashville Zoo, a team of teachers and administrators will work with scientists to write a curriculum that will include both school-based and zoo-based small and large group activities for all students in grades PreK-4 to expand knowledge and interest in biological sciences.

A **new outdoor classroom** will be developed to provide a space for students to perform messy scientific experiments, build their own greenhouse, and construct and maintain a solar-powered hydroponics lab and raised garden beds. Additionally, Rosebank will offer a free, one-week **STEAM summer camp** for up to 50 students (10 from each grade level K-4) selected on a first-come, first-served basis.

Families and community members will be able to learn about Rosebank students' newfound skills and knowledge in quarterly school-hosted STEAM Expos open to the public as well as

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through visits to view exhibits and activities. Families and the community can also stay up to date with the STEAM program through the school's new STEAM lab website and interactive blog, which is and will continue to be run by the STEAM team. Additionally, Rosebank will host annual Fall STEAM Street Fairs; parent trainings in digital literacy and online safety through our partnership with Google Education; and a spring STEAM Family Fun night.

WARNER ARTS MAGNET ELEMENTARY SCHOOL

Warner Elementary School, with support from the MSAP, will be re-envisioned into Warner Arts Magnet Elementary School. Warner, located in the historic Edgefield neighborhood of Nashville, has a current population of 300 students in grade K-4. The neighborhood includes an interesting mix of large Victorian houses and more modest homes and apartments, and is a favorite among local artists and musicians and Nashvillians from all over the city who travel to nearby East Park for local festivals and fairs. The new magnet program at Warner will revitalize the school's arts program by adding new disciplines and content to the arts curriculum and by integrating arts into core subject instruction. The magnet program will enable Warner to foster strong partnerships within the Music City community to provide unique instructional and enrichment experiences to students in a diversity of arts disciplines that are not offered in other MNPS elementary schools.

The heart of the magnet program at Warner will be a new arts-integrated thematic curriculum that infuses the study and application of a variety of arts mediums into ELA, math, science, and social science instruction. There is an abundance of academic research identifying arts-integration as an effective tool for fostering students' artistic skills and supporting improved student achievement (Rupert, 2006). This literature also speaks to the power of strong arts programs in increasing student engagement and motivation (Dwyer, 2011). The thematic units in

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the art magnet program will be aligned with Tennessee State Learning Standards and grounded in the Tennessee State Standards for visual and performing arts. The thematic curriculum will be composed of a series of arts-integrated lessons that address core content through an interdisciplinary approach. By integrating arts into the curriculum, the magnet program will foster student learning in the arts and the transfer of learning between arts and core subjects, and help students build skills in critical thinking communication, collaboration, and creativity. Over the five-year grant, all classroom and arts teachers at Warner will collaborate to develop a comprehensive thematic curriculum that will ultimately include up to eight new arts-integrated lessons for each grade level. Examples of two art-integrated lessons are presented in Table 12.

Table 12: Examples of Arts-Integrated Lessons

<p>Grade 2 (ELA): How can the language of the arts (dance and music) be used in descriptive writing?</p>
<p>Arts-Integrated Lesson</p> <ul style="list-style-type: none">• Use pictures of animals to categorize by size and to identify adjectives to describe them.• Listen to music and imitate animal movements to identify adverbs to describe how the animals move.• Using music notation, compose rhythmic patterns based on short and long animal sounds.• Create movement and shapes based on animal-themed music, such as Peter and the Wolf.• Write and illustrate a short story about animals using descriptive language (adjectives and adverbs).

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<p>Extension Activity: Field trip to Nashville Zoo to observe animals in their natural habitat to help collect information for their short story.</p>
<p>Grade 4 (Math) How are mathematical patterns described through music and dance?</p>
<p>Arts-Integrated Lesson</p> <ul style="list-style-type: none">• Observe paintings (e.g., Mondrian, Frank Stella) and identify patterns in the art.• Watch a video of the “Irish Washerwoman” and identify rhythmic patterns in dance and music.
<ul style="list-style-type: none">• Transcribe rhythmic patterns in the dance (Irish Jig) to identify duple and triple meter and discuss how the metric patterns will help inform the dancers.• Working in teams to use metric and rhythmic (duple and triple) patterns to choreograph a dance and demonstrate for the class.
<p>Extension Activity: Visit by The Nashville Irish Step Dancers and TN State University fraternity/sorority step teams to perform and teach students and parents dance steps; staff will lead a discussion of the evolution of tap dancing. Student groups also will perform their choreographed dance for parents.</p>

Teachers will participate in PD provided by the Tennessee Performing Arts Center (TPAC) to build their capacity to collaborate on the development of these arts-integrated unit plans. In Year 1 of the grant, teachers at each grade level will develop and implement two new arts-integrated unit plans. In Years 2 and 3, teachers will refine the existing lessons and create two new lessons each year. In Years 4 and 5, teachers will complete and implement a curriculum of up to eight arts-integrated lessons over the course of the school year.

Currently, more than 90% of students at Warner are low-income and may not have the

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resources to participate in arts and music activities outside of schools. Without opportunities to participate in arts instruction in elementary school, low-income students may not be prepared to gain access to the more selective and rigorous arts programs that are offered in MNPS middle and high schools. Warner will help bridge this equity gap by expanding the opportunities for students to receive instruction in a variety of arts disciplines. In Years 1-3, arts and classroom teachers will work with TPAC to enhance the art curriculum. Students and faculty will benefit from ArtSmart, TPAC's residency program in which professional artists and classroom teachers partner to integrate arts into core content. In Year 4, new artistic genres will be added to the arts classes, including dance, instrumental music, theater, and other disciplines that are not provided in MNPS elementary schools. The new discipline-specific and arts integrated curriculum will be scaffolded to provide opportunities for students to experience deeper learning as they rise in grade level. TPAC will also provide Warner students with free admission to "Humanities Outreach in Tennessee Season for Young People," which provides culturally diverse, quality performances from around the country and the world.

The new arts integrated program will require substantial investments in Warner's arts facilities and equipment. Warner is located in a large, older urban school building with an abundance of arts and music resources that have not been continuously maintained to support the robust program that MNPS is proposing. The school has a dedicated auditorium with a current seating capacity of 200, with a stage and two backstage dressing rooms. With additional seating, the auditorium's capacity will be increased to 300. The balcony has a music room with tiered risers and separate practice areas to support individualized music instruction. The school also has an oversized art room with large windows that fill the room with natural light, and that is equipped with adequate storage space and a kiln. MSAP funding will be used to bring these

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spaces alive with a state-of-the art theater and dance studio equipped with mirrors, flooring and ballet bars, music and arts equipment (piano, percussion and string instruments, sound system, microphones, pottery wheel), and maker-space/technology resources (3D printers, die cut machine, digital cameras, graphic arts software, etc.). With the development of a video production lab (video camera, mics, green screen, computer with video editing software, TV screens and wiring for each classroom), the school will expand the current morning meetings and announcements into a daily news broadcast viewed throughout the school on closed circuit TV. By the end of the grant cycle, *Wildcat News* will be live-streamed on the school website.

To support the rigorous arts program that is proposed, Warner will foster partnerships with many of the cultural resources that the Music City has to offer. In addition to the partnership with TPAC, Warner will collaborate with **Dr. Gloria Wilson**, professor of arts at Middle Tennessee State University (MTSU), who is an expert in arts integration and leads the state-funded Tennessee Arts Academy, a summer PD camp for arts teachers. Dr. Wilson will partner with Warner to support development of the arts integration curriculum. In addition, the visual arts department at MTSU will provide arts education teacher candidates to Warner to complete student teaching practicums and community service hours. The partnership with MTSU will begin with the visual arts department and expand each year to incorporate music, dance and drama, building on the work with TPAC.

Families will serve as the audience for students' artistic expressions and products. Quarterly exhibitions and performances of students' artwork will serve as a key vehicle for engaging parents and families members in school activities and for showcasing student learning and talents. Students will be involved in designing and creating materials to market the showcases, including printed materials and video and audio-recorded clips that can be distributed via email

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or telephone. Magnet staff will also coordinate with local fairs, festivals, and community events to find venues for Warner students to showcase and perform their artworks. Warner will also host monthly *Warner's SAFE* (Saturday Arts Family Experiences) days to provide three-hour arts related classes for families. SAFE sessions will be facilitated by school staff, community artists, and talented parents. The school's website and social media accounts will also be a strong vehicle for showcase student work and providing information to families and the community about the arts programming and student achievements at Warner.

JOHN B. WHITSITT ENVIRONMENTAL ENGINEERING STEAM MAGNET ELEMENTARY SCHOOL

John B. Whitsitt Elementary School in East Nashville has a population of 450 students in grades K-4. With support from the MSAP, Whitsitt will build upon the school's strong instructional foundation in science to become a whole-school Environmental Engineering STEAM magnet school. The program will provide students with in-depth exposure to environmental engineering through: (1) new thematic curriculum units integrated across core content areas; (2) enhanced related arts curricula and a new engineering class; (3) theme-related enrichment activities, outdoor lessons, field trips, and clubs; and (4) partnerships with local organizations with expertise in science and engineering to provide real-world connections for students. Through this comprehensive learning experience, students will develop skills in critical thinking, leadership, collaboration, and communication, for the purpose of providing inquiry-based responses to complex, real-world problems.

The magnet program will build upon a strong instructional focus at Whitsitt on environmental education. Through a partnership with Plant the Seed, Whitsitt has already developed a large school garden and related lessons, which are used to help students learn about a variety of environmental issues, including water pollution, weather and climate change, and

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sustainable farming. Through a partnership with **Plant the Seed**, a nonprofit organization that currently offers a PreK-K gardening curriculum in the exploratory science class, Whitsitt will offers an exploratory science class as part of the related arts rotation for all grade levels. The MSAP grant will enable the school to expand lessons across all grade levels (K-4) to provide students with hands-on learning opportunities related to gardening, including sowing, planting, and studying properties of plants and soil. Both of these existing structures will serve as a foundation upon which the school-wide environmental engineering program will be built.

New **transdisciplinary Environmental Engineering STEAM curriculum units** will be the pillar of the magnet program. The units, examples of which are presented in Table 13, will be focused around school-wide quarterly themes to integrate environmental content and concepts into standards-based instruction in core subject areas. Each unit will include engineering challenges and extension activities including field trips and outdoor environmental lessons. Teachers across all grade levels will collaborate to develop and implement at least one new unit in Year 1 of the grant. In Years 2 and 3, teachers will revise the existing units and develop two additional units each year. In Years 4 and 5, teachers will complete and implement at least four units for each grade level. All of the units will be fully aligned with Tennessee State Academic Standards and NGSS.

Table 13: Examples of Thematic Curriculum Units

Quarterly Theme: Protecting and Preserving Our Environment
Essential Question: <i>How do we protect our environment and, in the process, ourselves?</i>
Grade 1: We can have a positive impact on protecting the environment
Cross-Curricular Connections

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ELA: Read two or more informational texts about recycling and conservation such as *Michael Recycle* by Ellie Bethel, *Recycle*, by Gail Gibbons, and *What Can You Do with an Old Red Shoe* by Anna Alter's

Science: Examine physical properties of trash and sort items into categories for recycling

Math: Use graphs to count and compare the number of items by recycling/trash categories; Use addition to understand the impact of trash accumulation over a week

Social Studies: Conduct research on topics studied in ELA to debate topics about recycling and conservation, such as: Is the world today a better place than the world of the past? Will our future world be better than today's world?

Extension Activities: Class visit from Waste Management about local recycling center and process and student activity to collect, count, and sort materials for recycling within the school building

Grade 4: Our role in preserving the environment

Cross-Curricular Connections

ELA: Read informational texts such as *Habitats and Wildlife in Danger* by Sarah LeVete; *What does an Animal Eat?* by Lawrence F. Lowery, and *This is My Planet: The Kid's Guide to Global Warming* by Jan Thornhill to learn about the impact of human activity on the environment and use evidence in the texts to support opinion writing

Math: Collect and measure data on weights of trash and recyclables; Use area and volume to design effective shortage units for recyclables at Whitsitt

Science: Research natural habitats for plants and animals and the impact of human activity on their environments and how they are adapted; conduct lessons in outdoor classroom to study

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gardening and impact of weather on plant growth

Social studies: Conduct research to learn about the impact of pollution and human created waste during the Industrial Revolution and make connections to current environmental issues

Extension Activities: Trip to Shelby Bottoms Nature Center to participate in trash pick-up and student activity to estimate the impact of waste on the environment using calculation from the amount of trash collected

The related arts rotation at Whitsitt currently includes visual art, music, technology, exploratory science, and three physical education periods. For the new magnet program, Whitsitt will replace one physical education period with a new **engineering related arts class** that will engage students in each grade level in project-based applications of STEAM concepts and skills using the research-based Engineering is Elementary (EIE) curriculum as a foundation (described in Glencliff school description). The engineering class will be taught by the School Curriculum Specialist in the new Maker Space, which will be equipped with a variety of hands-on learning materials and technologies such as MakerBot 3D printers, laptop computers, Lego Mindstorm robotics kits, K'Nex sets, tinker toys, arts supplies, and digital video and camera equipment to create movie shorts and promotional videos.

One Monday in each month will be designated as “Whitsitt Power Monday,” during which students will participate in school-based extension activities provided by a variety of STEAM partners while classroom teachers collaborate on curriculum development and planning. Each Power Monday, Whitsitt will host community partners, including Asset, Super Science, Green Elephant, and Cheekwood Botanical Gardens, who will conduct hands-on learning experiences with students on topics related to zoo animals, gardening, robotics, song writing, chess, and

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readers' theater. **Adventure Science Center** will provide Power Monday programming in the areas of LEGO Robotics and physics and tower building. Whitsitt will also develop a partnership with **Vanderbilt University's Department of Engineering** to provide hands-on learning experience for 3rd and 4th-grade students in robotics and simple machines. Students will learn to code robots to perform simple functions. The Power Monday activities will be co-facilitated by the related arts teachers to ensure connections to curriculum and standards.

Magnet staff at Whitsitt will implement a multi-faceted strategy to engage families in the Environmental Engineering STEAM program and provide opportunities for parents to participate in their children's learning. Whitsitt will integrate information about and exhibits of theme-related activities and student work into all of the school's existing family nights, including Literacy Night, Science Fair, Numeracy Night, and Back to School Night. The magnet team will also organize a STEAM Expo during which students will be able to provide hands-on demonstrations of learning from all of the related arts classes. Exhibitions will be held in the Maker Space, outdoor learning spaces and garden, and the art, music, technology, and exploratory science classes and labs to showcase student work in content area. The magnet staff will work with teachers and administrative staff to develop and disseminate monthly school-wide and grade-level STEAM newsletters to share information about magnet theme-related student learning and accomplishments and will conduct presentations about the magnet program at all PTO meetings. Magnet staff will also collaborate with the school's Community Achieves Coordinator to integrate family magnet activities and events with other community-related services.

- (2) *The Secretary considers the extent to which the applicant demonstrates that it has the resources to operate the project beyond the length of the grant, including a*

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multi-year financial and operating model and accompanying plan; the demonstrated commitment of any partners; evidence of broad support from stakeholders (e.g., State educational agencies, teachers' unions) critical to the project's long-term success; or more than one of these types of evidence.

Commitment to Magnet Project

As evidenced in the first section of this proposal, there is widespread support for the MNPS magnet initiative, stemming from the highest level of the District down to each of the proposed magnet schools. Table 14 shows the number of parents and staff in each school who expressed support for the magnet program (these support forms are provided in the Attachments). Should MNPS be awarded an MSAP grant, the momentum and excitement that was generated during the proposal development phase will be leveraged in support of program implementation.

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Table 14. Number of Parents and Staff Who Signed Support Forms for the Magnet Programs

School	Parents (N)	Staff (N)
Glenclyff	215	37
Inglewood	124	27
Rosebank	115	31
Warner	229	31
Whitsitt	216	38

Capacity-Building Strategies to Support the Sustainability of Magnet Programs

Built into the MNPS magnet program design—and funded by the MSAP grant—are numerous activities that, starting from Day 1 of grant implementation, will help to establish a solid foundation for the sustainability of the four magnet programs. These activities include (1) developing and refining innovative, thematic curricula; (2) offering extensive PD and support to magnet teachers and school leaders; (3) building strong and lasting collaborations with outside partners; (4) working with parents to enhance their decision-making roles; (5) designing and implementing formative evaluation tools to measure the programs’ progress as they mature; and (6) disseminating and sharing lessons learned from magnet implementation. These capacity-building activities, which are described throughout this application and are summarized below, will provide a fertile environment in which the successful project components will continue to flourish after federal magnet funds expire.

Curriculum Development. Over the five-year grant period, with the support of MSAP-

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funded partnerships, school-based Specialists, and the District-based Curriculum Specialist and Project Recruiter, the MNPS magnet schools will develop and disseminate theme-based curricular materials and elective course sequences for use by classroom and related arts teachers, and staff, thereby increasing the schools' capacity to meet current and emerging student instructional needs. These curricular products, which will be developed by each school over the course of the project, will contain standards-based goals and objectives, activities, resources, and assessments that are tied to each school's magnet theme and will serve as an important vehicle for sustaining the magnet programs beyond the funding cycle.

Professional Development and Support. A comprehensive set of PD initiatives will enable staff at each of the magnet schools to develop and implement evidence-based instructional strategies that will transform their classrooms into innovative and effective learning environments. The MSAP Project Director and Site Coordinators will arrange opportunities for teachers to share the skills and knowledge learned through PD with their colleagues in workshops, inter-visitations, and cross-school conferences and meetings, as well as through digital media. Additionally, the Magnet Site Coordinators and Specialists at each school will use established structures for planning and collaboration with key staff within the school—such as professional learning communities (PLCs) and grade-level teams—to support effective implementation of the magnet program (see detailed description of PD plans for the magnet schools in sub-section 3 below).

Enhanced Decision-Making Roles for Parents. MNPS is strongly committed to developing collaborative and supportive relationships with parents, and that commitment extends to the magnet program. As part of the planning phase for this proposal, each of the MNPS magnet schools conducted outreach to its parent communities to disseminate information and mobilize

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support for the program. The proposed magnet schools will establish school-based magnet advisory committees to ensure that parents have an opportunity to play a meaningful role in magnet planning. Additionally, as discussed in the individual magnet program descriptions, each magnet school will provide a robust set of opportunities for parents to expand their role through participation in a wide variety of magnet-related parent involvement events.

Continuous Improvement Process. MNPS will implement a process of continuous improvement that incorporates real-time data, feedback from various stakeholders, and rigorous research to test, refine, and scale the models and practices that define the magnet programs. The Project Director will work closely with the Site Coordinators and other magnet and school staff to engage in continuous improvement activities. For example, the Magnet Curriculum Specialist will meet regularly with teachers to obtain formative feedback on their experiences with the magnet program. The school-based magnet team, in collaboration with school administrators, will use teacher feedback as well as feedback obtained from other key stakeholder groups (e.g., parents, students, and program partners) to identify ineffective practices and implementation challenges and inform midcourse corrections to program activities.

Program evaluation is a key mechanism supporting the continuous improvement process. As discussed in the Quality of Project Evaluation, the evaluation is to be carried out jointly by the project staff and the project evaluator and is designed to gather formative and summative findings on program implementation and outcomes in order to ensure that project activities are being carried out as planned and to address challenges or issues as they arise.

Dissemination Strategies. The monthly meetings of school-based magnet staff convened by the Project Director will provide an invaluable opportunity for the magnet schools to discuss implementation experiences, challenges, and effective practices with their peers and to share the

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curricular products that have been developed. In addition, the Project Director and other district- and school-based magnet staff will actively participate in USDOE and Magnet Schools of America (MSA)-sponsored conferences throughout the five-year project period to learn about the experiences of other magnet districts and schools and to share best magnet practices from MNPS in these venues. Additionally, the District will capitalize on its information technology structure to support the project's dissemination goals. The MNPS magnet schools will use the District's virtual collaboration vehicle, SchoolNet, an online system that provides district, state, and national instructional and PD resources, to support and enhance schoolwide professional learning about theme integration.

A District-level MSAP website will be developed as the overarching umbrella to unite the five schools in their endeavors and will facilitate communication and information sharing between the schools, parents, and the larger community. The website will include information about each school as well as student- and teacher-generated materials, such as a blogging site for sharing information and for teacher and student collaborations; lesson plans and student work products; PD opportunities and resources; links to specific subject-related resources; and student-created public service announcements, advertisements, and posters that show the types of activities and partnerships that each magnet school has cultivated.

As noted in the Desegregation section, MNPS has as part of its school choice portfolio a number of magnet schools, including those that were funded under a previous MSAP funding cycle. As testimony to the District's commitment to magnet schools as a powerful vehicle for supporting educational equity and excellence, there are numerous examples of MNPS magnet schools that have been self-sustaining after the 2010-2014 funding cycle. These include:

- John Early Museum Magnet (Middle School) – MNPS continued the magnet theme by

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building an attached museum that includes an exhibit room and training room. School activities have also been strengthened through ongoing robust partnerships with local museums.

- Stratford STEM Magnet (High School) – The magnet theme has been sustained at Stratford HS through an academy model wherein students are enrolled in topical learning communities such as the Academy of National Safety and Security Technologies and the Academy of Science and Engineering. Students enrolled in the school’s interdisciplinary science and research pathway are supported by an ongoing partnership with the Vanderbilt Center for Science Outreach.
- Hattie Cotton STEM Magnet (Elementary School) – Race to the Top (RTTT) funding was used to sustain the STEM theme, which is embodied through core-subject teaching through the lens of Engineering Design Process. When RTTT grant funds expired, the District began providing support through funding a full-time STEM Instructional Designer, who currently facilitates the school’s STEM learning lab and assists teachers with STEM integration.

A 2013 WestED monitoring visit, conducted as part of the USDOE’s oversight of the federally-funded magnet programs, confirmed the District’s commitment to sustaining the practices at the schools. In particular, WestED found that MNPS effectively leveraged MSAP funding to build the internal capacity of the District and the schools, preparing each for continuation after the grant ended. For example, each of the schools included in the monitoring visit was found to have formal sustainability plans in place and were also found to have structured themselves around an “academy model” to ensure that PD and leadership would continue to support the chosen magnet themes. In addition, WestEd found that the District was committed to fiscally sustaining the thematic programs once the federal grant ended through a

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variety of means, including coordinating the use of additional federal and state grants and establishing partnerships with universities, community organizations, and local businesses (WestEd, 2014). These positive findings underscore the District's commitment to and capacity for sustaining the magnet programs beyond the federal funding period and augur well for a similar set of outcomes should the District be award a MSAP grant in this funding cycle.

Multivear Financial and Operating Models to Sustain Magnet Programs

Developing the MNPS budget starts months before it is approved by Metro Council, typically in the month of January. District leaders come together to discuss the budget priorities for the upcoming school year and determine what is needed to be able to provide every student with a high quality education. Every decision is made through the lens of supporting students and instruction in every way possible. Once the Board of Education has approved a proposed operating budget for the subsequent fiscal year, the Mayor, MNPS Finance Director, and Metro Council decide how best to fund it.

MNPS school principals directly control more than half of the district's operating budget. The rest of the operating budget goes to essential services, including transportation, utilities, building maintenance, district office support such as IT services, and more. By far the biggest expense in all of MNPS is personnel – payroll, benefits, and pensions – which accounts for more than 80% of the total operating budget. Once the MSAP grant has expired, schools will have the flexibility under school-based budgeting practices to absorb positions and other expenditures that are critical to sustaining the magnet program, should this be the decision of the school's leadership team. It is our goal that the MSAP grant will serve as a lever for the strategic realignment of fiscal, technological, and human resources within each school community such that magnet programming can be easily sustained at the conclusion of the funding cycle.

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As detailed in the Quality of Management Plan section, each school is planning to commit significant in-kind personnel and other-than-personnel resources to promote the development of whole-school magnet programs. Funding for these come from federal, state, and local funding sources that typically have been awarded on an annual basis and may be expected to continue. However, it should be noted that in some cases, federal, state, and local funds for education programs are not guaranteed from year to year and are subject to discontinuation or reductions. Provided in Table 15 is an overview of the multiple funding streams coming from public and private sources into the five proposed magnet schools.

Table 15. Sources of Funding for MNPS Magnet Schools

Funding Source	Purpose (Proposed Magnet Schools)
iZone School Improvement Funds (USDOE)	To improve teacher quality through the funding of a small group of Innovation Zone (iZone) schools (Inglewood, Whitsitt)
ESEA Title I (USDOE)	To improve the academic achievement of disadvantaged students through supplemental instruction to students who are educationally disadvantaged and failing or most at risk of failing to meet high academic standards (All Schools)
ESEA Title IIA (USDOE)	To improve the preparation, training, and recruitment of high quality teachers and principals (All Schools)
ESEA Title III (USDOE)	To improve language instruction for limited English proficient and immigrant students and to help LEP students meet the same State academic standards required of all students (All Schools)
Pre-K Expansion Grant	To increase Pre-k access among children in high-need

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Funding Source	Purpose (Proposed Magnet Schools)
(USDOE)	communities and to strengthen alignment of Pre-k to 3 rd grade continuum (All Schools)
School Improvement Grants (USDOE)	To support implementation of school improvement models in priority schools (Inglewood, Whitsitt)
21 st Century Community Learning Centers (USDOE)	To establish or expand community learning centers that provide students with opportunities for academic enrichment, youth development and family support during non-school hours or during periods when school is not in session (Whitsitt)
Project Prevent (USDOE)	To make schools safer and ensure that schools provide social, emotional, and behavioral supports for youth (All Schools)
Tennessee Safe Schools (TSDE)	To implement innovative violence prevention programs, conflict resolution, disruptive or assaultive behavior management, peer mediation, and training for employees on the identification of possible perpetrators of school-related violence (All Schools)
Collaborative for Academic, Social, and Emotional Learning Grant (NoVo Foundation)	To implement evidence-based SEL programs, pilot school climate/SEL walk-through protocols, provide targeted support to ensure effective SEL practices, align SEL in all district initiatives, and provide SEL professional learning (All Schools)
Family Resource Centers/Community Achieves (TSDE and	To establish Family Resource Centers that work proactively to establish collaborative partnerships with parents, communities, and business leaders, state and local service agencies, and public

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Funding Source	Purpose (Proposed Magnet Schools)
Local)	and private organizations (Glencliff, Inglewood, Whitsitt)
Title X (USDOE)	To support district programs that serve homeless students by ensuring immediate enrollment and educational stability for homeless children and youth (All Schools)
Tennessee Arts Commission (State)	To provide student ticket subsidies for theater, museums, and other art sites (All Schools)
Individual with Disabilities Education Act (USDOE)	To protect the rights of students with disabilities by ensuring that everyone receives a free appropriate public education regardless of ability (All Schools)

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

Research on effective teacher PD suggests that training should be intensive, supportive, engaging, content-specific, and aligned with school improvement goals. Intensive PD is often defined as ongoing and for duration of at least 14 hours (Yoon, Garet, Birman, & Jacobson, 2007). A meta-analysis of nine experimental studies of teacher PD found that the duration of a program was positively associated with changes in teacher practice and student learning (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009).

PD strategies that provide job-embedded support through coaching are highly effective in providing opportunities for teachers to implement and master new skills (Knight & Cornet, 2007;

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Truesdale, 2003). Furthermore, expert demonstration of a new skill through modeling has proven to be an effective technique for teacher learning (Desimone, Porter, Garet, & Yoon, 2002; Snow-Renner & Lauer, 2005). It is equally important that teacher PD be highly engaging and applicable to instruction—for example, by employing varied approaches such as reading, role playing, classroom observations, and discussions—to help teachers see and make direct connections to their own teaching practices (Garet, Porter, Desimone, Birman, & Yoon, 2001; Yoon, Garet, Birman, & Jacobson, 2007).

Research also suggests that teachers benefit more from PD that is directly tied to discipline-specific concepts that they can easily apply in their own classrooms (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009), and that discipline-specific PD has been shown to have strong positive impacts on student learning (Blank, de las Alas, & Smith, 2007). Lastly, PD has been shown to be more effective in improving teachers' knowledge and skills when it is integrated into a wider set of opportunities for teacher learning and development (Garet, Porter, Desimone, Birman, & Yoon, 2001).

Comprehensive Approach to Magnet School Professional Development

The proposed MNPS magnet schools will provide a concentrated program of PD for teachers and school leaders to prepare them for effectively meeting the student achievement needs of their students. Research studies have underscored the fact that, due to the array of educational, social, and cultural challenges confronting magnet schools, PD is of paramount importance (Ben-Ari & Strier, 2010). In fact, studies have found that student diversity often comes as a challenge for the teaching workforce, which is largely women and White. Many teachers do not have experience working or living in diverse environments, which makes it difficult for them to help prepare students for working with diverse groups (Robinson & Clardy, 2011).

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MNPS is committed to identifying effective and innovative methods of delivering customized PD and support services to staff in order to better enable them to develop and implement high-quality instructional programs. As outlined in the performance measures in the Quality of Project Evaluation, each school will provide 50 hours or more of magnet-related PD to at least 25% of instructional staff and school leaders in Year 1 of the grant, 50% in Year 2, and 100% by the end of the grant period.

District-Level Professional Development Initiatives

The PD plan for the MNPS magnet initiative will provide experiences that are of sufficient quality, intensity, and duration to lead to improvements in teacher practice. In order to support the transformation of teaching and learning across the five magnet schools, MNPS will provide intensive PD to school leaders, MSAP-funded staff, classroom teachers, and other support staff in each school. The training will focus on evidence-based instructional strategies that will equip teachers with knowledge and skills to conduct inquiry-based instruction, develop and implement interdisciplinary units, and integrate project-based learning into learner-centered environments. MNPS will develop strong and ongoing partnerships with well-respected and qualified organizations, including the Institute for Literacy at the University of Pittsburgh and the Intercultural Development Research Association, among others, whose staff development programs have proven effective based on practice and research.

MNPS will leverage findings and strategies emanating from an existing partnership between the State of Tennessee and the **IFL** at the University of Pittsburgh to develop and implement an intensive five-part plan of customized PD in each of the five proposed magnet schools. IFL works with schools and districts to provide professional learning programs to help educators implement practices proven by rigorous research to have positive effects on student learning

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gains. MNPS's partnership with IFL will focus on strengthening the role of instructional coaches in improving student achievement.

In each year of the grant, IFL will conduct three or four two-day on-site training sessions with classroom teachers to deepen their understanding of content knowledge and use of evidence-based instructional strategies, including Practice via Task Analysis and Accountable Talk. IFL will also facilitate two or three two-day trainings with instructional coaches on the IFL coaching model and effective use of professional learning communities. IFL trainers will make two or three three-day site visits each year to conduct classroom observations and work with principals and coaches to build their capacity to support classroom teachers effectively; and will provide 10 to 15 days of off-site support to review student work on classroom tasks, analyze formative assessments and classroom monitoring tools, and conduct bimonthly conversations with coaches at each school. Years 1 through 3 of the grant will focus on math content, coaching, and pedagogy. Years 4 and 5 will focus on ELA using the same PD model.

To help foster integrated learning environments within five magnet schools, MNPS will partner with the Intercultural Development Research Association, the federally funded Equity Assistance Center for Region II (IDRA EAC-South) to provide customized technical assistance for building cultural competence and culturally-responsive policies and practices. A detailed description of the plans for PD and TA were provided in the Desegregation section.

MNPS partnered with The Buck Institute for Education (BIE), a mission-driven nonprofit organization that supports teachers, schools, and districts in implementing effective PBL opportunities in all grade levels and subject areas through its high-quality PBL instructional practices and products. The District will leverage the expertise of a resident cadre of PBL trainers who were trained by BIE over the period from 2010–16 to help bring coherence to PBL

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practices and support the creation of school-wide processes and structures to support the effective and sustained implementation of PBL across grade levels and subject areas in the five proposed magnet schools.

To build each school's capacity to integrate **GEMS** curriculum and materials into science and STEAM instruction, MNPS will partner with a local GEMS trainer in each of Years 1-3 to conduct three, full-day on-site trainings. The Project Curriculum Specialist, along with the school-based School Curriculum Specialists, all 3rd and 4th grade teachers, and at least one teacher from each of grades K-2 from each of the five schools, will attend each of the trainings to build a strong knowledge and understanding of the programs and participate in model lessons for effective integration of the GEMS materials into classroom learning.

MNPS will also leverage the district's portfolio of PD initiatives designed to build exemplary social emotional learning (SEL) programming across the five proposed magnet schools. MNPS offers training on a range of topic areas to address the student needs and behaviors that have potentially negative impacts on student learning and positive interpersonal interactions. For example, through its two-day "SEL Foundations" training, MNPS supports teachers in building awareness of the role of social and emotional competences on creating culturally and emotionally responsive learning environments. MNPS also provides two trainings on Positive Behavior Intervention Support (PBIS) to foster best practices among educators in implementing multi-tiered systems of supports to help students succeed academically, socially, and behaviorally. Four-day trainings are also provided on Restorative Practices, including effective implementation of affective statements and questions, conferencing, group decision making, Restorative Circles, and peer mediation and juries. Taken together, the training offered by the District will ensure that all students across the five proposed magnet schools are taught in

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socially and culturally responsive and supportive environments.

Finally, as described earlier in this section, MNPS is the process of developing partnerships with firms to provide professional development as a component in the district-wide initiative to develop STEAM across MNPS schools. The Project Director will work closely with the District's STEM Director to develop a plan that leverages those partnerships to design PD plans that support STEAM implementation across the four proposed STEAM schools. These plans will be fleshed out immediately upon notification of an MSAP grant award.

School-Level Professional Development

Each magnet school will implement a coordinated PD for all instructional staff and school leaders to directly support the implementation of the magnet program. The Magnet School Curriculum Specialists will participate in all PD activities so they can then provide in-classroom support to the teachers and other instructional staff in their buildings. School administrators will monitor the impact of training activities on staff knowledge and skills in order to evaluate their effectiveness. Furthermore, teachers will be encouraged to transmit their knowledge to their peers through turnkey training, co-teaching, and modeling activities in order to build staff capacity in these areas in subsequent years.

Each of the proposed magnet schools has planned extensive professional development to support theme integration. These activities are discussed below.

Glenclyff will provide opportunities for teachers to receive training through on-line certification courses from **Microsoft Imagine Academy** and from **Junior Achievement** on its *BizTown* and *It's My Business* entrepreneurship programs. Additionally, **Tennessee State University** will provide technical assistance in designing the outdoor classroom and developing curriculum integration.

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Inglewood and Whitsitt will build upon MNPS' existing partnership with **American Alliance for Innovative Systems, LLC (AAIS)** to provide job-embedded PD and coaching for integrating NGSS into science content, conceptually-based instruction, and technology and arts integration across core content areas. Through conceptual instruction teachers will be able to teach concepts in greater and deeper detail to engage and enhance student understanding and acquisition of knowledge. In each of Years 1-4 of the grant, an AAIS consultant will work with each school to provide grade-level teachers with quarterly planning based on their Teaching for Understanding Framework, a planning and professional learning framework that addresses the essential questions related to instructional planning and delivery. Through this process, 14 teachers at Inglewood and 27 teachers at Whitsitt will establish a nine-week scope and sequence for each grade level which serves as a planning calendar for weekly planning sessions. AAIS will also provide PD to related arts and classroom teachers on art integration, with a concentration on the incorporation of technology.

Inglewood and Rosebank will continue their partnerships with **Vanderbilt Center of Science Outreach**. Through the partnership, a graduate student works with each school one day per week to co-teach with classroom teachers to provide deeper content knowledge in the sciences and modeling of PBL activities.

To provide all teachers with a strong foundation in arts integration and instruction, Warner will work with **Dr. Gloria Wilson of MTSU** on the development and implementation of an arts-integrated curriculum. Dr. Wilson will conduct on-site support for teachers, providing lessons modeling and coaching in each year of the grant: Year 1 (8 days), Year 2 (13 days), Years 3 and 4 (12 days) and Year 5 (3 days). **Tennessee Performing Arts Center (TPAC)** will provide ongoing technical assistance and support over the five-year grant. TPAC's academic and arts

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specialists will work with school staff on integrating units related to upcoming performances and facilitate co-teaching with ArtSmart artists that will expand classroom teachers' capacity around arts integration.

With the comprehensive plan for PD, MNPS will expose *all* MSAP-funded staff, school leaders, and instructional staff in each of five magnet schools to a minimum of 50 hours of PD each year of the grant. As a result, we are confident that teachers and staff will demonstrate increased collaboration in developing and implementing interdisciplinary instructional units of study and improved knowledge, skills, and use of evidence-based teaching practices.

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

The MNPS magnet initiative is designed with a strong theory of change that is fully aligned with the MNPS's instructional goals and frameworks and will serve to advance the schools' missions to increase equity by raising the academic bar for all students and decreasing achievement gaps. **The theory of change states that by transforming teaching and learning in five new whole-school magnet programs through innovative, inquiry-based programs of instruction with a thematic focus, MNPS will increase equity of access to programs of choice, help improve academic achievement and other outcomes for all students and staff, and reduce minority group isolation in the magnet schools.** To support this theory of change, MNPS developed the following logic model for the initiative.

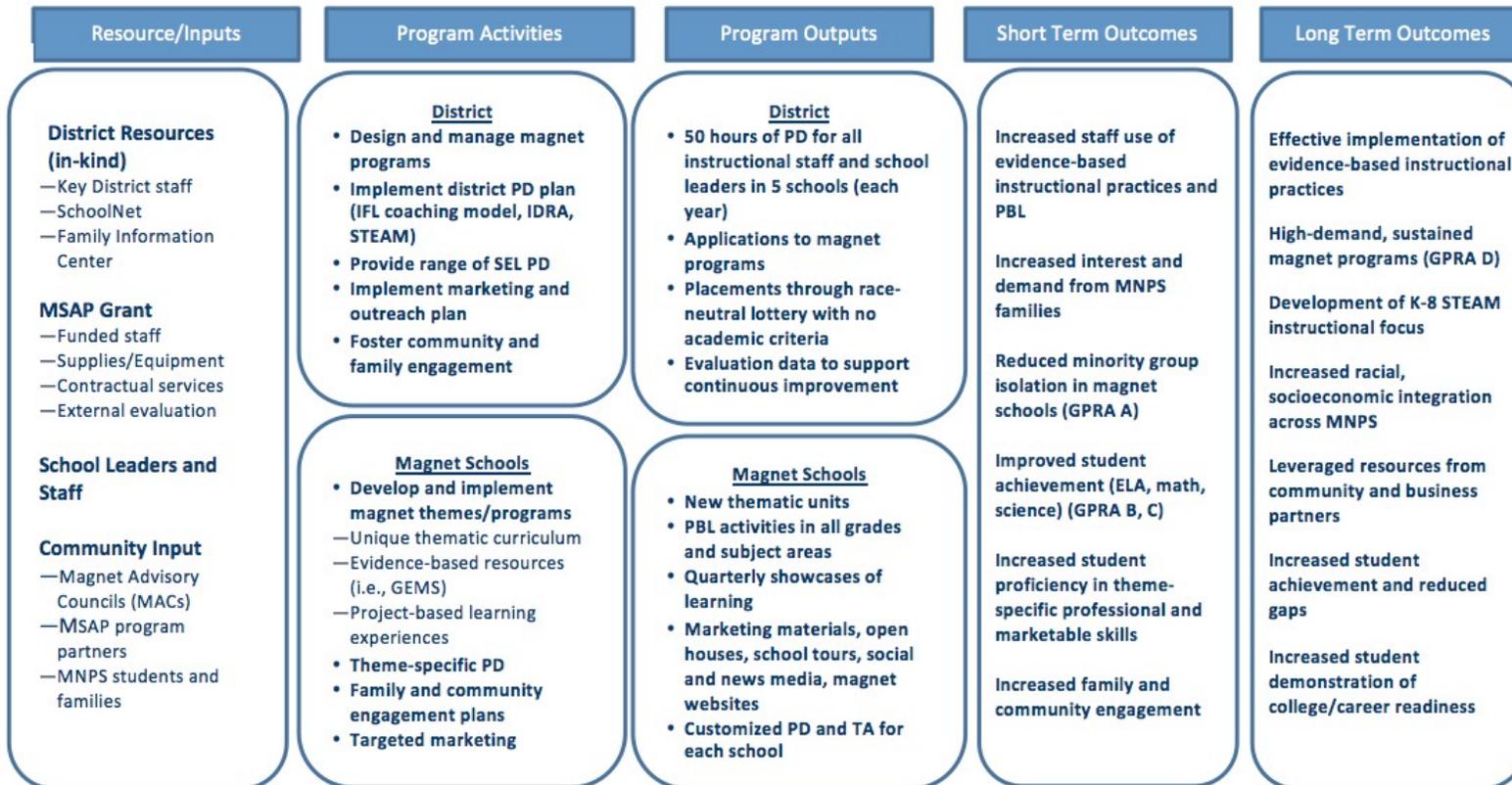
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MAGNET PROGRAM LOGIC MODEL

Context and Need:

- District commitment to rigorous instruction, human capital development, positive school climate, and community engagement strategy
- Recommendations from Transition Task Force on School Choice to develop new magnet programs
- Development and implementation of district-wide STEAM initiative at middle school level
- Minority group and socioeconomic isolation in elementary schools located in East and South Nashville—areas of rapid gentrification
- Low proficiency rates and achievement gaps between student subgroups in targeted elementary schools



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(C) Quality of Management Plan

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

MSAP Project Management Framework

The management plan for the MNPS Magnet Schools Assistance Program initiative has several core elements that in combination will ensure the success of the project and the attainment of all of the project's objectives and performance measures:

- a leadership and accountability structure in place within the District that fosters innovation but holds all instructional leaders in the school system to rigorous performance standards;
- an efficient staffing and management structure for the MSAP initiative within and across the MNPS magnet schools, including reporting and accountability mechanisms to ensure the timely, effective, and efficient implementation of all key MSAP activities;
- a detailed project implementation plan to achieve the project's objectives and performance measures, supported by a reasonable and cost-effective budget and leveraged in-kind resources designed to promote capacity building and sustainability of the project beyond the federal funding period; and
- a continuous improvement process that engages MSAP stakeholders in ongoing feedback, assessment, and refinement of project activities.

A detailed discussion of the four pillars of the project management framework is provided in the following paragraphs.

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Leadership and Accountability Structure

The MNPS operates under the aegis of the Director of Schools, Dr. Shawn Joseph (see Quality of Personnel for Dr. Joseph's credentials), who reports directly to the Metropolitan Board of Education. In MNPS, schools are organized into geographic clusters. As of March 1, 2017, the district's 12 school clusters were reorganized into four district zones, each containing three school clusters. Each zone is led by a community superintendent who will be empowered to better meet the needs of each individual school as well as the parent and neighborhood communities within which each cluster is located. This structure will also provide consistency across grade levels, since the same community superintendent will oversee a community's elementary, middle, and high schools, thereby becoming a single point of contact for families. Furthermore, this will facilitate cross-grade alignment within each zone and clusters. The five proposed magnet schools are located within two clusters, each within a separate zone. Inglewood, Warner, and Rosebank are located within the Stratford Cluster, and Glencliff and Whitsitt are located within the Glencliff Cluster. The community superintendents report to the district's Chief of Schools, Dr. Sito Narcisse, who reports directly to Dr. Joseph.

The MSAP Project Director will work under the direct supervision of the Director of Student Assignment Services, Christopher Weber (see summary of Mr. Weber's qualifications in the Quality of Personnel section and his résumé in Attachments). The Office of Student Assignment Services manages the district's choice school system and the optimization of this system for the purposes of school desegregation. Mr. Weber, as director, oversees the choice process for 85 schools and over 45,000 applications annually. The district's 2010 MSAP grant of \$12 million was co-designed, written, and executed by Mr. Weber, who more recently facilitated a public advisory council to produce a redesign of East Nashville's school pathways and also leads the

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internal work group tasked with carrying out the district’s Diversity Management Plan. Mr. Weber will report to the Executive Officer of Operations, who reports to the Chief Operating Officer (a cabinet level position under the Director of Schools).

Project Staffing and Management Structure

Summarized in Table 16 is the proposed staffing structure for the MNPS MSAP initiative, followed by a detailed description of the roles and responsibilities of these key staff. We believe that this staffing plan provides the optimal infrastructure at both the district and school levels to support the attainment of the MSAP initiative’s ambitious objectives and outcomes.

Table 16. MSAP-Funded Staff

Personnel	Number	Level of Effort
District-Level Staffing		
Magnet Project Director	1	1.0 FTE
Project Curriculum Specialist	1	1.0 FTE
Project Recruiter	1	1.0 FTE
Grants Assistant	1	0.5 FTE
School-Based Staffing		
Magnet Site Coordinator	5	1.0 FTE
School Curriculum Specialist	5	1.0 FTE

District-Level Staffing. The full-time MSAP Project Director will work directly with the magnet staff and planning teams at each school to ensure that the magnet programs are developed and implemented in alignment with the purposes of the MSAP statute and the

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approved grant application and that they are using best practices that will ensure attainment of the MSAP goals and performance measures. In this role, the duties of the MSAP Project Director will include the following:

- recruiting, hiring, and supervising the district magnet staff;
- interfacing regularly with key District offices, such as the office of the Chief Academic Officer, Equity and Diversity, English Learners, Human Resources, Talent Strategy, Facility Planning and Construction, Transportation, Communications, and Research Assessment and Evaluation.
- coordinating regular meetings with magnet school staff and collaborating partners to disseminate pertinent information regarding MSAP guidelines and build a professional support network among school-based staff with similar responsibilities and interests;
- providing workshops and organizing conferences for school and district leaders and teachers on the latest evidence-based practices related to TN State Standards, STEAM, curriculum mapping, PBL, cultural competence, and other strategies being piloted by the magnet school programs;
- developing cohorts of teacher leaders, including recruitment teams and curriculum design teams, to ensure the sustainability of the magnet programs beyond the funding period;
- coordinating district-wide and school-based staff training activities, including those facilitated by outside agencies;
- providing technical assistance to magnet school leadership on all outreach and recruitment efforts, including organizing multimedia advertising campaigns, developing promotional materials, and planning events;
- monitoring the applicant pool and enrollment data for the magnet and feeder schools;

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- editing district-wide magnet publications, collaborating on the magnet website, and using social media outlets to support the District's marketing efforts;
- developing positive community support for the District's magnet programs through public presentations at widely advertised parent workshops, and other community forums, and supporting the schools in their efforts to increase parent involvement;
- serving as the primary liaison to the USDOE MSAP Program Officer and ensuring compliance with all requirements laid out by the USDOE and the Office for Civil Rights;
- monitoring all project expenditures and providing school staff with technical assistance in meeting fiscal and budgetary guidelines;
- providing guidance and support to the school-level Magnet Advisory Councils (described in Section 2 below);
- overseeing a rigorous and ongoing process of continuous improvement, which will entail convening regular meetings with magnet Principals, parents, teachers, and project partners to solicit and share feedback on program activities; and
- serving as a liaison to the project evaluator, assisting schools in the collection of required program data and documentation, providing feedback to the evaluator on the evaluation design, instrument development activities, and data collection procedures, preparing required reports, and disseminating results to key stakeholders.

The MSAP grant will be used to support a full-time **MSAP Curriculum Specialist** who will work under the direction of the Project Director. The Curriculum Specialist will be responsible for working with school teams to facilitate thematic curriculum development and implementation in each magnet program and ensure that all magnet curricula are fully aligned with TN State Standards. In this role, the Curriculum Specialist will perform the following responsibilities:

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- collaborate with the schools' curriculum and PD teams on the development and alignment of new magnet theme curricula and train staff in their use;
- serve as a liaison with outside consultants providing on-site training for school staff;
- create and maintain partnerships with community agencies participating in the project and offering services to families; and
- schedule, develop, and participate in PD activities in collaboration with the school-based Magnet Curriculum Specialists.

The MSAP **Project Recruiter** will be responsible for planning, coordinating, and implementing a comprehensive magnet outreach program and recruitment program. Specifically, the Project Recruiter will work with the Project Director, Curriculum Specialist, school teams, MACs, and others to brand and market the magnet school programs. The specific role and responsibilities of the Project Recruiter are:

- developing magnet materials and products such as websites, flyers, brochures, banners, advertisements, and social media items for outreach and recruitment;
- collaborating with the Project Director to develop, implement, and monitor a plan for program promotion and outreach and with the Site Coordinators on school-specific plans;
- participating in local, regional, and national conferences to identify best practices in magnet school promotion; and
- assisting the Project Director, Curriculum Specialist, and other district- and school-based staff with other aspects of the magnet program, including documentation, evaluation, and compliance monitoring.

Finally, the part-time **MSAP Grants Assistant** will support the Project Director on projects related to recruitment, student selection, and preparation of MSAP budgets. The Grants Assistant

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will maintain all administrative and data files to support program implementation, fiscal monitoring, and the program evaluation. The Grants Assistant will be responsible for communicating with program stakeholders, including families, external partners, and the USDOE, and for assisting the Project Director in scheduling and convening project staff meetings, PD sessions, and marketing events.

School-Level Staffing. The **magnet school Principals and Assistant Principals** will be responsible for overseeing the implementation of the magnet programs in their buildings and ensuring that the magnet school planning teams, the School Improvement Teams (SITs), and the MACs communicate regularly. They will also supervise all teaching staff working on magnet-related programs and activities, including the Site Coordinators and Curriculum Specialists, whose responsibilities are described below, during and beyond the regular school day and year.

At each school, the magnet grant will pay for the salary of a **full-time Magnet Site Coordinator**, who will have major responsibility for all administrative aspects of the magnet program, including budget management, data collection activities, outreach and recruitment, and family and community engagement. The Site Coordinator will be responsible for sharing information about the magnet program with members of the target communities through the development and distribution of magnet program brochures and other outreach materials, speaking with parents and community members, and fostering partnerships to support the increased diversity of the applicant pool for the program.

In addition, the magnet grant will pay for the salary of one **full-time Curriculum Specialist** at each school, who will have major responsibility for planning, implementing, and refining the magnet instructional program and coordinating all school-based, magnet-related PD initiatives. Although their roles will be customized to the curriculum and instructional needs at each magnet

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school, in general, the Curriculum Specialists will be responsible for the following activities:

- working with regular classroom and related arts teachers to develop or modify magnet theme-related materials;
- working with the MSAP Curriculum Specialist to coordinate development of magnet program curricular units and materials;
- assisting the Project Director in providing the teacher training necessary to implement the newly created curricular materials;
- designing and providing theme-based instruction;
- participating in the school's magnet planning committee and MAC;
- meeting regularly with the Project Director to report on implementation progress;
- participating in staff development workshops specific to their core subject area; and
- supporting the development and facilitation of magnet-related parent involvement activities.

Throughout the five-year grant, the Project Director will convene group meetings with the Site Coordinators and Curriculum Specialists from the five schools on a bimonthly basis. These meetings will be held on a rotating basis at the various magnet schools, which will give staff from across the magnet schools an opportunity to experience their colleagues' programs firsthand. Meeting topics will include, for example, effective strategies for outreach and recruitment, theme-based curriculum development and implementation, resources for PD, successes and challenges of working with outside partners, strategies for engaging hard-to-reach and non-English-speaking parents, and evaluation activities and findings. At each meeting, the Site Coordinators will provide an update of their schools' progress in implementing the various components of the program, share effective strategies, and brainstorm solutions to

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implementation challenges encountered. Other meeting participants will include the local evaluator, magnet school Principals, and staff members from the District as needed.

At the school level, in addition to the Principals, MNPS will provide the services of classroom teachers, professional support staff, parent coordinators, and paraprofessionals **at no cost to the grant** to support implementation.

- Classroom teachers will be responsible for providing magnet school students with theme-based instruction, and the related arts teachers and school library media specialists will provide direct instruction to students in the areas of the magnet themes at their schools.
- Instructional coaches provide targeted job-embedded training and mentoring for classroom teachers in literacy, math, and supports for ELLs and exceptional students.
- To ensure that students and their families are able to fully participate in and benefit from the magnet school programs, school-based support staff (e.g., guidance counselors, social workers) will offer access to a wide range of social services designed to meet students' health, social, and emotional needs.
- Paraprofessionals and aides will be responsible for assisting the classroom teachers in providing magnet school students with theme-based instruction.

In addition to these personnel resources, each school has existing equipment, supplies, and facilities that will be leveraged to support the implementation of the magnet programs in their buildings. Information about these resources was provided in the individual school descriptions in the Quality of Project Design section.

Finally, the District operates a grants management system with strong internal controls that is fully compliant under the USDOE's General Administrative Regulations as revised in December 2014. The MNPS Office of Federal Programs and Grants has a dedicated **Compliance**

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Coordinator who serves as a state and federal grant manager for the district. MNPS has an exemplary track record in regards to fiscal compliance and grant management, the latter of which was identified as a “best practice” by the Metropolitan Nashville Council in a 2014 Performance Audit. Furthermore, MNPS was also awarded the Meritorious Budget Award in 2016-17 by the Association of School Business Officials International for excellence in budget presentation.

Project Implementation Plan

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

Project Objective 1: Reduce minority group isolation among Hispanic and African American students in the proposed magnet schools. This objective is aligned with the MSAP purpose to support the *elimination, reduction, or prevention of minority group isolation (MGI) in elementary and secondary schools with substantial proportions of minority students*. All five proposed magnet schools meet the district’s definition of MGI. In two of the five schools—Glenclyff and Whitsitt—MGI will be reduced among Hispanic students and in three of the five schools—Inglewood, Rosebank, and Warner—MGI will be reduced among African American students. The MSAP grant will help reduce the isolation of these racial groups by attracting a

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new and more racially diverse population of students to the schools through the implementation of a multifaceted approach:

- creation of unique magnet themes that will be attractive to students of diverse racial, ethnic, and socioeconomic backgrounds and academic needs and interests *and* that are not available in other public schools in the District;
- a strategic, targeted, and aggressive outreach and recruitment plan to be carried out by magnet program staff and by each magnet school in its local and surrounding neighborhoods; and
- a race-neutral student selection process that will ensure equitable access for all students to the magnet programs.

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

The five proposed magnet schools have not yet been successful in helping all students meet state learning standards. As of spring 2015, in each of the five proposed magnet schools, less than one third of students met or exceeded the state learning standards in ELA. In addition, in four of the five proposed magnet schools, less than one third of the students met or exceeded the state learning standards in Math (in the fifth school, 44% met or exceeded the state learning standard in Math). Finally, all five schools had ELA and math proficiency rates lower than the district averages.

The magnet programs will provide new opportunities for all students to meet and exceed the

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learning 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 and initiatives that have been put into place system-wide (described in the Quality of Project Design) and will be fully aligned with Tennessee State Standards. In addition, plans for the magnet programs will supplement the instructional programs at the schools by incorporating innovative and research-based instructional approaches to help teachers better address the learning needs of *all* students, including students with special needs, such as ELLs and exceptional students.

Project Objective 3: Ensure that all students attending the magnet schools benefit from the magnet’s educational offerings and have equal opportunities to gain magnet theme-specific value-added skills and knowledge. This objective aligns with two MSAP purposes: to *ensure that all students enrolled in magnet school programs have equitable access to high-quality education that will enable them to succeed academically and continue with postsecondary education or productive employment* and to *provide courses of instruction that will substantially strengthen the knowledge of academic subjects and the attainment of tangible and marketable career, technological, and professional skills.*

The magnet schools will provide whole-school programs that will expose *all* students to theme-based curriculum and enrichment opportunities. The magnet planning teams understand that the needs and interests of students can vary drastically depending upon the opportunities and experiences they have been awarded prior to enrolling in the magnet schools. Therefore, the programs will align with other services in the schools and across the District to address the needs of students, including learning, language, economic, behavioral, and other needs (see Section A3 for a discussion of programs and services to ensure equal access and treatment). The

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instructional staff who provide services to exceptional students and ELLs at the proposed magnets will participate in magnet curriculum development to ensure that instructional units and materials are designed to meet the learning needs of all students.

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

Project Objective 4: Build the capacity within the magnet schools to provide rigorous, theme-based instructional programs that will help promote choice and diversity in the MNPS schools. Objective 4 supports two MSAP purposes: *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 encouraging the development and design of innovative educational methods and practices that promote diversity and increase choices in public schools.*

MNPS has incorporated several mechanisms into the design of each magnet school program to increase the capacity of the school leaders, staff, and community to implement high-quality magnet programs and to sustain them after the federal funding terminates. The District realizes that the MSAP grant provides seed money to develop magnet programs and that these

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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. By creating sustainable magnet programs, MNPS will increase choice and promote diversity for all students.

The MNPS MSAP planning team, in collaboration with the proposed magnet schools, has developed a strong plan of professional and curriculum development to enhance the knowledge and skills of all instructional staff and school leaders in theme-based topics and evidence-based instructional approaches and to develop rigorous magnet curricula and lessons that will be provided to all students (see the Quality of Project Design for descriptions of curriculum and PD activities). The MSAP Project Director, in close collaboration with the Site Coordinators, will arrange opportunities for knowledge and skill-sharing among instructors through workshops, inter-visitations, cross-school conferences and meetings, and through digital media. School-level partnerships with outside vendors, including institutions of higher education, arts and cultural organizations, local businesses, and CBOs, will offer training and technical assistance in the specific themes and related instructional strategies being delivered by each school. In addition, all schools will use the mechanisms of PLCs to share best practices with colleagues in their schools and offer peer mentoring.

Continuous Improvement Process

MNPS has embarked on the development and implementation of a performance management culture, which will be supported by district-wide systems, practices, processes, protocols, training, and coaching designed to create a data infrastructure and expectations. The magnet school grant progress monitoring and improvement approach will be folded into our performance management priorities.

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The MSAP Project Director will work with the Director of Policy, Planning, and Project Management to build a Magnet School Working Group that will comprise members of the District magnet team, representatives from the magnet schools (including funded and non-funded staff), and the external evaluator to guide and modify the process for continuous improvement as the project develops. The Magnet School Working Group will provide high-level direction to ensure the successful implementation of the grant, including the process of continuous improvement, and will serve as a sounding board for ideas and solutions to critical issues that arise through implementation. As discussed in the following section, the magnet program participants—students, families, teachers, and school leaders—will play an integral and active role in the continuous improvement process to ensure that it provides meaningful and timely information. Furthermore, the project’s external evaluator will conduct a comprehensive formative and summative evaluation of the initiative to provide external feedback on the implementation and effectiveness of program activities (see the Quality of Project Evaluation).

An implementation timeline showing key milestones by project objective is provided below.

MNPS MSAP Project Implementation Timeline: Key Activities and Benchmarks by Objective

MSAP Objective 1: Reduce Minority Group Isolation						
Key Activities	YR 1 Benchmarks 10/17–9/18	YR 2 Benchmarks 10/18–9/19	YR 3 Benchmarks 10/19–9/20	YR 4 Benchmarks 10/20–9/21	YR 5 Benchmarks 10/21–9/22	Responsible Parties*
<ul style="list-style-type: none"> • Create district-wide marketing and outreach campaign for the five new magnets to be coordinated with the Optional Schools application process 	<ul style="list-style-type: none"> • Adapt district templates for marketing materials (e.g., school tours, brochures) for each new magnet school 	<ul style="list-style-type: none"> • Disseminate information on new magnet programs districtwide and build community awareness of and interest in magnet programs • Increase numbers of applications to five magnet schools by 5% each year over the baseline year 				PD, PR
<ul style="list-style-type: none"> • Design and conduct school-level targeted and multi-faceted outreach campaign to profile the new magnet themes 	<ul style="list-style-type: none"> • Develop suite of marketing materials (e.g., flyers, brochures) and establish social media presence for the magnet programs (Facebook, Twitter) • Translate marketing materials into languages spoken by the magnet school parent communities • Use new promotional materials in conducting outreach to feeder schools and other venues 	<ul style="list-style-type: none"> • Update and disseminate marketing materials • Continue to build and expand social media presence • Conduct marketing and outreach activities in targeted community locations 				SC, PR, P, D
<ul style="list-style-type: none"> • Implement a fair, equitable, and race neutral student selection and placement process for the new magnets aligned with the District’s Diversity Management Plan and student assignment process 	<ul style="list-style-type: none"> • Develop application for new magnets that is aligned with MNPS Optional Schools choice process • Process applications for magnets • Run race-neutral lottery process for the following school year if schools are over-selected 	<ul style="list-style-type: none"> • Process applications for magnets • Run race-neutral lottery process for the following school year if schools are over-selected 				PD, D

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MSAP Objective 2: Improve Students' College and Career Readiness						
Key Activities	YR 1 Benchmarks 10/17-9/18	YR 2 Benchmarks 10/18-9/19	YR 3 Benchmarks 10/19-9/20	YR 4 Benchmarks 10/20-9/21	YR 5 Benchmarks 10/21-9/22	Responsible Parties*
<ul style="list-style-type: none"> Design, implement, and refine thematic curricula 	<ul style="list-style-type: none"> Develop 1 interdisciplinary unit focused on inquiry and PBL per grade per school 	<ul style="list-style-type: none"> Refine Yr 1 unit Create 1-2 new interdisciplinary units per grade 		<ul style="list-style-type: none"> Refine Yr 1-3 units Implement four interdisciplinary units per grade 		PCS, SCS, PP
<ul style="list-style-type: none"> Incorporate research- and evidence-based instructional strategies aligned to NGSS, CCSS, NCAS, and TN State standards 	<ul style="list-style-type: none"> Pilot implementation of innovative and effective instructional strategies to support the implementation of the magnet themes in at least half of the grades served by the school 	<ul style="list-style-type: none"> Expand implementation of innovative instructional strategies to all grades served by the school 	<ul style="list-style-type: none"> Schoolwide implementation of innovative instructional strategies in all classes and grades 			PCS, PR, SCS, P

MSAP Objective 3: Provide Equal Access to Magnet Program Offerings						
Key Activities	YR 1 Benchmarks 10/17-9/18	YR 2 Benchmarks 10/18-9/19	YR 3 Benchmarks 10/19-9/20	YR 4 Benchmarks 10/20-9/21	YR 5 Benchmarks 10/21-9/22	Responsible Parties*
<ul style="list-style-type: none"> Provide staff development in cultural competence for magnet school staff 	<ul style="list-style-type: none"> Finalize scope of services with IDRA to provide PD to all magnet schools in culturally responsive teaching, including baseline needs assessment, and begin training 	<ul style="list-style-type: none"> Provide ongoing consultation in culturally responsive teaching to magnet school staff in all magnet schools 		<ul style="list-style-type: none"> Continue to provide ongoing consultation in culturally responsive teaching to magnet school staff in all magnet schools 		PD, PP
<ul style="list-style-type: none"> Adapt thematic curricula and instructional strategies to meet the needs of ELLs and SWDs 	<ul style="list-style-type: none"> Modify the 1 interdisciplinary unit focused on inquiry and PBL per grade per school to meet the needs of ELLs and SWDs 	<ul style="list-style-type: none"> Review and revise interdisciplinary units, as needed to align with needs and resources of ELLs and SWDs 				PCS, SCS, CT, D
<ul style="list-style-type: none"> Provide enrichment opportunities within and beyond the regular school day to level the playing field for students attending high-poverty, MGI schools 	<ul style="list-style-type: none"> Finalize scope of services with all external partners for curriculum enrichment Begin implementation of enrichment activities 	<ul style="list-style-type: none"> Refine scopes of services based on feedback Continue implementation 	<ul style="list-style-type: none"> Expand implementation of enrichment activities to serve all grades 			PD, SC, PP

MSAP Objective 4: Build Capacity to Sustain Magnet Programs						
Key Activities	YR 1 Benchmarks 10/17-9/18	YR 2 Benchmarks 10/18-9/19	YR 3 Benchmarks 10/19-9/20	YR 4 Benchmarks 10/20-9/21	YR 5 Benchmarks 10/21-9/22	Responsible Parties*
<ul style="list-style-type: none"> Develop and implement a rigorous plan of PD for magnet school staff and instructional leaders 	<ul style="list-style-type: none"> Draft magnet PD plan for each school and implement 50 hours of PD for each staff member and instructional leader 	<ul style="list-style-type: none"> Revise PD plan based on feedback and evaluation findings each year Provide at least 50 hours of PD (per year) for each staff member and instructional leader Use PLCs to tumkey training on PD strategies 				PD, PCS, SC, SCS, P, PP
<ul style="list-style-type: none"> Conduct school-level processes to share best practices and assess program implementation 	<ul style="list-style-type: none"> Include magnet as agenda item on all SIT, PA meetings Establish Magnet Advisory Council to bring diverse perspectives to discussion of program status, challenges, and lessons learned 	<ul style="list-style-type: none"> Include magnet as agenda item on all SIT, PA meetings Convene 3-4 meetings of the Magnet Advisory Council per year to bring diverse perspectives to discussion of program status, challenges, and lessons learned 				SC, P, SCS, CT, MAC
<ul style="list-style-type: none"> Implement district-level processes to share best practices 	<ul style="list-style-type: none"> Conduct monthly MSAP meetings to discuss magnet theme and implementation of innovative instructional strategies Establish MSAP presence on SchoolNet to support and enhance districtwide professional learning about magnet programming 	<ul style="list-style-type: none"> Conduct monthly MSAP meetings to discuss magnet theme and implementation of innovative instructional strategies Upload magnet-related program materials (e.g., unit plans, PD resources) to SchoolNet 				PD, PCS
<ul style="list-style-type: none"> Design and conduct a rigorous continuous improvement process to assess program implementation and inform sustainability 	<ul style="list-style-type: none"> Establish Magnet School Working Group, convene 2-3 meetings Finalize scope of services with external evaluator, conduct formative and summative evaluation 	<ul style="list-style-type: none"> Convene 4-6 meetings per year of the Magnet School Working Group Refine scope of services for external evaluation, conduct formative and summative evaluation 	<ul style="list-style-type: none"> Convene 4-6 meetings per year of the Magnet School Working Group Refine scope of services for external evaluation, conduct formative and summative evaluation and impact study 			PD, PE

*Responsible Parties: PD=Magnet Project Director; PCS=Project Curriculum Specialist; PR= Project Recruiter; GA= Grant Assistant; P= Principals; SC=Magnet Site Coordinators; SCS=School Curriculum Specialists; CT= Classroom Teachers; PE=Project Evaluator; MSWG=Magnet School Working Group; MAC=Magnet Advisory Committees; PP= Project Partners;

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

Should MNPS be awarded an MSAP grant, a solid foundation of collaboration, excitement, and momentum that was fostered during the proposal development phase will be leveraged to support the high-quality implementation of the project. Several mechanisms are built into the project design and management structure that will ensure that a diversity of perspectives is encouraged and incorporated into the ongoing operation and refinement of the magnet project.

School Improvement Teams (SITs)

Every MNPS school is required to have a school improvement team which must include a parent representative, principal, the assigned school improvement leader for the school, instructional coaches, teacher representatives from each grade level, and teachers of exceptional students and ELLs. The team is responsible for developing the school improvement plan based on the school needs and the corresponding school-level budget, which includes any supplemental funds such as Title I or School Improvement Grant Funds and their local funds. Local school-level funds are based on the district's weighted student funding formula, which provides funds to a school based on its student demographics. The District supports schools in effective planning and budgeting through the federal programs office. Housed in this office is the Office of School Improvement Strategies consisting of School Improvement Facilitators, each assigned to a group of schools. Each school's plan and budget is reviewed by the federal programs office and the supervisor of the principal for approval. Schools are required to annually revise their plans through a thorough needs assessment process. Schools must conduct quarterly milestone

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meetings to review the progress of the plan and make amendments if necessary. The school must present the plan to families for input at the annual parent meeting. All staff in the school participate in the development and monitoring of the plan through their SIT representatives.

Engaging Parents in Decision Making

MNPS maintains a district-wide Family Engagement Policy which outlines expectations for the inclusion of parents and families in decision-making at the district and school levels. Families are intended to have a voice in school and district planning processes through participation in school and district committees, parent-teacher associations, and District and cluster-specific Parent Advisory Councils. To ensure equitable access to these decision-making opportunities for families of all backgrounds and language preferences, a variety of supports are deployed to schools to strengthen engagement practices. MNPS hosts, for example, a Parent University that offers parent leadership and advocacy workshops at school sites and, in partnership with the Tennessee PTA, offers capacity building opportunities for families and school staff. In addition, the district's Communications Department ensures that community outreach events are effective in soliciting parent feedback.

The MNPS magnet initiative will carry out the following practices, which have been found in the literature to be particularly effective in encouraging parents to serve as decision makers in their children's schools:

- maintain regularly updated communication with information for families that include written and online guides to help families understand their rights and responsibilities;
- provide multi-channel support for families to substantively increase engagement, including school-based family involvement specialists and state and locally-funded family resource centers;

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- empower parents and families to be active consumers of district data and informed advocates for their children and communities, through materials on how to interpret those school and district level data, district-sponsored summer training to prepare parents to become school leaders, parent leadership trainings for those who want to become more involved in school improvement teams, and cultural competency workshops held for immigrant families, covering such topics as the educational philosophy of the school; and
- offer multiple occasions for input and decision-making, such as inclusion of parents in school management teams, inclusion of parents in school councils, and development of parent councils which allow for parents to coordinate among themselves prior to interfacing with school staff.

Magnet Advisory Councils (MACs)

The Magnet Advisory Council (MAC) that will be established in each magnet school will be the primary mechanism to ensure that the voices of all magnet stakeholders are heard and heeded on an ongoing basis. Established either as a subcommittee of the SIT or a stand-alone body, the MAC will serve a critical role in ensuring that the perspectives of magnet program and school staff, parents, students, and members of the larger school community are taken into account when reviewing the progress of the magnet initiative in each building. As noted above, a representative of the MAC will participate in the Magnet School Working Group convened by the Magnet Project Director. The charge of the MACs, which will meet on a quarterly basis over the life span of the grant, will be as follows: review project updates from the school magnet staff, including challenges, accomplishments, and proposed refinements; review formative and summative evaluation data provided by the external evaluator to identify potential issues with meeting performance measures; identify District policies and practices that can be leveraged in

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support of magnet program goals and those that have the potential to impede program progress, to be flagged to the district magnet team; and confer with other MNPS MACs to share knowledge and help to build a magnet culture and community within the school district. Within three months of the grant award notification, each school will be asked to provide the names and affiliations of the MAC team members to the Magnet Project Director.

(D) Quality of Personnel

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

MNPS has assembled an exceptionally well-qualified team to spearhead the implementation of the magnet program. Included in the core project team are seasoned staff with direct experience working in and supporting elementary school magnet programs, including all areas of magnet school design, delivery, and assessment. Should this application be funded, MNPS will ensure that the magnet project will benefit from the wealth of knowledge and expertise resident within the system at the district and school levels in support of MSAP objectives.

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

The MSAP Project Director will have programmatic and administrative responsibility for the project and will commit 100% of his or her time to magnet responsibilities. Upon receiving notification of the MSAP grant, MNPS will begin an aggressive search to find a highly qualified and experienced educator to fill the position of MSAP Project Director (described in the Quality of Management Plan). We understand the importance of finding a Project Director who is well versed in the philosophy and best practices of magnet programs and can understand and relate to the community that the District's schools serve. Requisites for this position will include

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experience with the administration of successful magnet and other federally-funded grant programs, in-depth educator training and PD experience, strong leadership and interpersonal skills, and demonstrated expertise in the areas of desegregation and curriculum development and implementation.

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

District Leadership

Dr. Shawn Joseph took the helm of the Metro Nashville Public Schools as the **Director of Schools** in the summer of 2016, bringing 20 years' experience as a school leader and teacher. Dr. Joseph has been committed throughout his career to eradicating gaps in student achievement. In his prior role, for instance, as Deputy Superintendent for Teaching and Learning in Maryland's Prince George's County Public School District, Dr. Joseph significantly improved African American students' reading performance in grades 3 through 8 and 10 in comparison with all other school districts in the state. He also led the District's academic initiative that improved White and African American students' algebra and algebra II performance levels on the PARCC assessments to a 4 and 5 (i.e., meeting or exceeding standards), which exceeded the overall state average of the number of students performing at this level for algebra. Dr. Joseph is also experienced with expanding program options and implementing thematic curriculum to meet students' needs and build academic rigor. While he served as Superintendent of Schools for Delaware's Seaford School District, Dr. Joseph supported Seaford High School's transition to an IB World School and fully implemented a high school New Tech Academy that set the state precedent for students' development of 21st century skills. Dr. Joseph is the author of *The Principal's Guide to the First 100 Days of the School Year: Creating Instructional Momentum*

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and the recipient of the 2010 American Educational Research Association's Outstanding Dissertation Award in the area of educational leadership. Dr. Joseph received his doctorate in educational administration and policy studies from George Washington University. He has an MS in education with a specialization in reading education from John Hopkins University.

Director of Student Assignment Services Christopher Weber has worked for MNPS since the year 2000. During this time, Mr. Weber has served in a leadership capacity for 14 years and has used his strong technical background and project management experience to lead the District's strategic planning for its school choice system and optimization of its program placement for zoning and transportation.

Mr. Weber led the District's internal team and facilitated a 21-group public advisory council to produce a successful proposal for the redesign of East Nashville's school pathways. Mr. Weber currently plays a central role in the management of the District's school choice operations, leading its processes for 85 schools and over 45,000 applications. In 2010, Mr. Weber was an essential team member in the design, writing, and execution of the District's \$12 million 2010 MSAP grant to create six new magnet schools. In 2012, Mr. Weber led the initiative to streamline all forms of school choice into one process, which was successful in several aspects; from this integration, the number of school choice applications increased by 6% and families were able to prioritize their preferences for school choice, resulting in a 35% reduction in students placed on a waiting list. Mr. Weber also implemented several web-based applications for school choice which increased online applications by 40%. By 2013, under Mr. Weber's leadership, more than half of the District's charter schools voluntarily joined the District's choice process and in 2015, the school choice process was implemented for all high school academies, with a 300% increase in applications. In addition to this work, Mr. Weber

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plays a key role in the implementation of the District's Diversity Management Plan: he leads the internal work group, writes reports, and presents findings to the school board and community task force. Mr. Weber graduated from Middle Tennessee State University College of Business with an MS in information systems with a concentration in IT project management.

Dr. Sito Narcisse is a seasoned school administrator with nearly 20 years of experience in education in Maryland, Massachusetts, Pennsylvania, and Tennessee. Currently, as the **Chief of Schools**, Dr. Narcisse reports to the Director of Schools and supervises the daily operations of the District's 169 schools. Dr. Narcisse serves as a member of the Superintendent's cabinet, where he assists with the District's \$800 million budgetary decisions, and works with the school board to support strategic planning efforts. Dr. Narcisse has also been instrumental in supporting the District's systems development and resources through his partnerships with various foundations including the Wallace, CASEL, and Panasonic Foundations. Dr. Narcisse received his doctorate in educational leadership from the University of Pittsburgh. He holds an MA in education from Peabody College at Vanderbilt University, as well as a certificate in executive education from Harvard University's Business School Public Education Leadership Project.

Dr. Kristopher Elliott, the Director of STEM for MNPS since 2015, oversees all schools' STEM/STEAM and science planning. Dr. Elliott is responsible for coordinating the District's science curriculum, plans and provides district-wide faculty PD in the area of instruction, and assists with the design of schools' science facilities and laboratories. Dr. Elliott also plays a key role in supporting the District's STEM magnet schools. In managing the District's STEM/STEAM initiatives, Dr. Elliott supervises its internal team and oversees its \$4 million annual budget. He also manages the Investing in Innovation (i3) grant and assists with the management of other STEAM and science grants. Dr. Elliott earned his Ph.D. in science

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education, with concentrations in K-12 learning and cultural and linguistic diversity, from Oregon State University.

Since 2016, **Dr. Monique Felder** has served as the District's Chief Academic Officer for the Division of Teaching and Learning. Under the guidance of the Director of Schools, Dr. Felder coordinates the efforts of numerous District offices to ensure their collaboration, alignment, and integration across schools and that these offices promote effective work processes, eliminate the achievement gap, and improve the academic achievement of all students. Specifically, she oversees the offices of Curriculum and Instructional Programs, Student Services, Diversity and Equity, English Language Learners, Family and Community Engagement, Students with Disabilities, Academies of Nashville, Instructional Technology and Library Services, and the Pre-Kindergarten program. Dr. Felder also manages the budgets for these offices to ensure their efficient utilization of District resources and is a member of the District's executive leadership team. Prior to this position, Dr. Felder was the Executive Director to the Deputy Superintendent, Prince George's County Public Schools, Maryland. Dr. Felder received her Ph.D. in educational leadership and policy studies from Virginia Polytechnic Institute and State University. She also has a master of education in elementary education with a specialization in elementary education and mathematics from John Hopkins University.

Dr. David Williams brings 16 years of administrative and teaching experience to his role as the **Executive Director of Curriculum and Instruction** for MNPS. Dr. Williams, who oversees the development and implementation of curriculum across the school district, leads the interdisciplinary teacher council and has experience implementing curriculum walks. Dr. Williams also has extensive experience with math curriculum. In 2015–16, just prior to assuming his current position, Dr. Williams was the Executive Director of Mathematics for grades Pre-K

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through 12, where he focused on the implementation of rigorous math instruction across the District. Before this position, at the Tennessee Department of Education, Dr. Williams was the Coordinator of Mathematics Content and Resources for grades K through 12. Dr. Williams received his doctorate in educational leadership and policy from Vanderbilt University, his MA in secondary mathematics education from Wake Forest University, and his BS degree in mathematics from Auburn University.

Dr. Nola Jones is the Coordinator of Visual and Performing Arts for MNPS. Her duties include instructional supervision of 400 professional arts education specialists and oversight of curriculum planning, PD, and implementation of *Music Makes Us*, the District's public/private music education partnership. Prior to this position, Dr. Jones enjoyed a successful career as a middle school and high school music educator. Her accomplishments have earned her national recognition as a leader in K-12 and institutions of higher education, and she actively maintains commitments as a guest conductor and adjudicator. Dr. Jones also serves on the Board of Directors for the Tennessee Performing Arts Center. Dr. Jones earned her doctor of musical arts degree from the University of South Carolina. She has a bachelor's degree in music education from Mississippi State University and an MA in music education from Mississippi College.

Key MSAP District Staff

Working closely with and reporting to the Project Director will be the full-time, district-level, MSAP-funded **Curriculum Specialist**, who will support all five magnet schools through the design, facilitation, and oversight of curriculum development and thematic integration activities. The Curriculum Specialist will build capacity at each magnet school as curricula and programs are developed over the lifetime of the grant. The responsibilities of this position will include designing and implementing PD on magnet theme curricula and instructional approaches, serving

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as a liaison with magnet school teams and District staff in all magnet curriculum areas, and creating and maintaining partnerships with community partners.

The proposed candidate for the MSAP Curriculum Specialist is Dr. Regina Etter. Dr. Etter is currently the Academic Lead Coach of the i3 G²ROW STEM Program for MNPS—a role which provides rich opportunities to promote STEM awareness to the District’s community stakeholders, including students and their families, teachers, and administrators. In this position, Dr. Etter provides coaching and models instructional strategies to teachers to ensure the fidelity of implementation with the Engineering Everywhere curriculum. Her coaching challenges instructors to think critically about interdisciplinary instruction and the integration of technology into the classroom.

Prior to this role, Dr. Etter had extensive experience in MNPS providing instructional expertise and PD in science and STEM. As a teacher, Dr. Etter gained instructional experience in all subject areas and served as a 21st Century Lead Learner where she practiced experiential technological skills, which earned her nomination for the National Board for Professional Teaching Standards. Later, as a Teacher-in-Residence for the NSF Systemic Change in Science Education Project in Middle Tennessee, Dr. Etter developed and conducted PD and supported teachers’ implementation of a nationally-validated science curriculum in 25 Nashville schools. Dr. Etter also served as a Science Mentor Specialist, a position funded by the Vanderbilt University Center for Science Outreach. While in this position, Dr. Etter created science units of study and planned their sequence, researched developmentally appropriate science resources for classroom implementation, and identified teachers to be science leaders. Importantly, Dr. Etter also served as STEM Instructional Designer for the 2010-2014 MSAP grant, a position that she achieved due to her best practices knowledge of STEM and instructional modeling skills. The

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PD she led for elementary schools focused on PBL, differentiation, formative assessment, and STEM content. Dr. Etter received her doctor of theology degree from Robbins College of Biblical Studies. She also has an MS degree in administration and supervision from Trevecca Nazarene University and a BA in early childhood education from Tennessee State University.

The third key member of the MNPS magnet team will be the full-time **Project Recruiter**, who will be responsible for planning, coordinating, and implementing a comprehensive magnet outreach campaign for the five proposed magnet schools (see position description in the Quality of Management Plan). The Project Recruiter will be required to have the following credentials: an advanced degree in education; experience with website development and graphic design; experience in creating multimedia materials and documents; familiarity with the use of presentation tools and media; experience in working with students and families from different backgrounds; superior organizational skills; demonstrated ability to work as part of a team; and excellent communication and interpersonal skills suitable for collaboration with all constituencies involved in the program.

School Leadership

The magnet school Principals will oversee the implementation of the program at their buildings and ensure regular communication among the magnet school planning teams, School Improvement Teams, and the Magnet Advisory Councils. Periodically, the Principals will meet as a group to exchange ideas and discuss topics of interest to all magnet schools in the District. Brief descriptions of the skills and expertise of each magnet school Principal follow; résumés are included in the Attachments.

Julie Hopkins, Principal of Glenclyff, has worked for MNPS for 24 years, during which time she has been a classroom teacher, a mentor teacher, and school leader. Ms. Hopkins has

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training in collaborative learning and school culture and climate. She received two graduate studies degrees from Tennessee State University: her master's in elementary education and her educational specialist degree (Ed.S.) in administration and supervision. She is currently pursuing a doctor of education degree at Lipscomb University.

Tracy McPherson, Principal of Inglewood, has experience as an elementary and secondary school teacher, literacy coach, and Assistant Principal. Throughout these positions, Ms. McPherson has led instructional and curriculum development initiatives in several subject areas including language arts, social studies, science, and math. She also has specialized knowledge of STEAM instruction, and since being recruited as Turn-Around Principal for Inglewood, has led the school-wide adoption of a STEAM curriculum. She also designs and conducts the school's PD and designed a school-wide Positive Behavior Support Plan. Ms. McPherson has an MA in educational leadership from Grand Canyon University, holds a multiple subjects teaching credential from Whittier College, and has training in explicit direct instruction.

Kellee Akers, Principal of Rosebank since 2015, has a proven record of school improvement and increased academic achievement across multiple settings over her 20-year career with MNPS. Ms. Akers is currently overseeing a multi-phased, \$10 million building renovation, and utilized community resources to build an outdoor classroom and garden. From 2015-16, Ms. Akers served as a Network Lead Principal, directly supervising five executive principals in addition to serving as a building principal. Ms. Akers began her career as a teacher, then served as a reading specialist and literacy leader, before becoming Assistant Principal of Granbery Elementary School. In 2014, while Principal of Hermitage Elementary School, Ms. Akers implemented the first Cambridge Primary School program in Tennessee, and received

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District Recognition for Greatest Increase in Student Achievement. Ms. Akers has an MA in education from Cumberland University.

As Principal of Warner, Denise Jacono oversees all operations, including curriculum development, staff recruitment and evaluation, communications, and student discipline and improvement. In only a year's time, Ms. Jacono's efforts have produced very positive results for Warner. She has created a 90-minute weekly professional learning community for all teaching teams in the school, and has secured a contract with Research for Better Teaching to provide 36 hours of PD for all faculty members. Ms. Jacono has also implemented PBIS and developed a partnership with Tennessee State University's Art Department to have murals painted at the school. In previous roles, both as a classroom teacher and a school leader, Ms. Jacono has mentored teachers, designed hands-on science programming, raised money to renovate science classrooms, and promoted arts programming. Ms. Jacono has an MA in education from Wilmington University.

In 2014, **Justin Uppinghouse** became **Turn Around Principal of Whitsitt**. Mr. Uppinghouse is responsible for leading Whitsitt's instructional vision, and to meet this goal, implements an observation and instructional focus walkthrough cycle that monitors the continuous improvement of teachers' instructional strategies. He also leads teachers through a planning and instructional process that implements the Four Pillars of Learning across all subject areas and emphasizes students' conceptual learning. Similarly, Mr. Uppinghouse emphasizes a school climate focused on student-centered instructional strategies and respect for professional learning and collaboration. Mr. Uppinghouse's student-centered approach is informed by his background as a school social worker. In previous positions, he worked with students individually and in groups to support their academic and socio-emotional skill development. Mr.

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Uppinghouse has an MS in educational administration from Eastern Illinois University and a MSW from University of Illinois at Urbana-Champaign.

Key School-Based MSAP Staff

At the school level, the **Magnet Site Coordinator** will work closely with the school Principal to spearhead the implementation of the magnet program in their buildings. Desired qualifications for the Magnet Site Coordinators include experience with magnet school development and implementation, experience in staff development and coaching, extensive familiarity with the school and parent community, demonstrated effectiveness in time management and attention to detail, and a demonstrated ability to work well with all constituents of the school community, including students, teachers, and parents. Additional qualifications for the position of site coordinator include a BA or BS in education, a Tennessee teaching license in elementary education, and at least three years of experience in a magnet school (preferred).

(c) The Secretary determines the extent to which teachers who will provide instruction in participating magnet schools are qualified to implement the special curriculum of the magnet schools.

The principal instructional personnel for the MNPS magnet initiative will consist of **Curriculum Specialists**. The Curriculum Specialists will be highly qualified individuals who will be appropriately licensed in the subject areas for which they will be assigned, as will all classroom teachers in the five magnet schools. Specifically, the Curriculum Specialists will have demonstrated competence in the following areas: instruction of heterogeneously grouped classes consisting of children from diverse ethnic, racial, and socioeconomic backgrounds with varying levels of academic skills; use of innovative, evidence-based teaching methods (e.g., PBL, arts integration, STEAM methodologies) and materials to address the learning styles of different

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students; development of theme-related curriculum materials that have been effectively used with elementary school students; demonstrated effectiveness in differentiating instruction and in the evaluation of student academic performance, including the use of authentic and/or performance-based assessment methods within their subject area or specialty; familiarity with implementing culturally-competent approaches designed to foster positive and productive interactions among students of different backgrounds; and the ability to work effectively with students, parents, teachers, and administrators. Additional qualifications for the position of Curriculum Specialist include an MA or MS in education, a Tennessee teaching license in elementary education, and at least three years of experience in a magnet school (preferred).

Currently, each proposed magnet school has several staff members who will directly contribute to the design and implementation of the thematic curricula of the magnet school. Should teaching vacancies occur during the lifespan of the magnet grant, the Principal, working with the school-based magnet team and the MSAP project team and the Department of Human Resources and Talent Services, will make every effort to recruit a staff member who brings relevant experience as well as a passion for the magnet program on board. Highlighted below are examples of the resident expertise at the five schools that will be instrumental to the success of the magnet grant.

- Dr. Smart, ELL teacher at **Glenciff**, serves as the school's Technology Lead. Dr. Smart has experience mentoring teachers and leading PLCs.
- Mr. Fell, Dean of Instruction, Instructional Coach, and TurnAround Teacher at **Inglewood**, coordinates the school's STEAM implementation and trains teachers to develop STEAM curricula.
- Mr. Hartfelder, Assistant Principal of **Inglewood**, assisted with the development of the

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school's STEAM vision and plan. To support this initiative Mr. Hartfelder has assisted with leading PD and collaborative planning to create STEAM challenges and student presentations.

- Ms. Rodney, Media Specialist at **Rosebank**, plans and delivers lessons to Pre-K through grade 4 students with a literacy and technology lens, as well as facilitates two model blended learning classrooms. For over a decade Ms. Rodney has been an active learner of new educational technologies and she is trained in PBL and responsive classroom.
- Ms. Williams McGee is the District's STEM Lead Teacher and **Rosebank's** STEM Facilitator. Her professional accomplishments include presenter at the Tennessee STEM Educational Research Conference, Founding Contributor to eduToolbox, and Rosebank Teacher of the Year in 2013. Ms. Williams McGee also has participated in a PBL 101 workshop and the 21st Century Technology Integration Institute.
- Mr. Merrick is the Computer Teacher for grades K through 4 at **Warner**. He is also the Vice President of the ISTE Online Learning Network. Previously, Mr. Merrick was Associate Engineer and Virtualization Lead Teacher, Academy Coach, and Learning Support Specialist for Virtualization at MNPS Virtual School.
- Mr. Calzadilla, Exploratory Science Teacher at **Whitsitt**, teaches differentiated science lessons to students in grades K through 4 and facilitates daily science experiments that focus on experiential learning. Previously, as a grade 3 teacher, Mr. Calzadilla taught hands-on math and science lessons and led the Whitsitt Green Machine, a club that integrated science, gardening, and recycling. Mr. Calzadilla also has experience as Program Educator for Club Discovery, a camp for children with disabilities that emphasizes STEM education, and as a science Museum Educator. Mr. Calzadilla has Science Kit 101 Pre-K through grade 6

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training as well as School-Wide STEM Integration training for grades 3 through 8. Mr. Calzadilla is also fluent in Spanish.

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

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

Extensive training and experience in promoting initiatives related to equity and culturally responsive pedagogy. MNPS is currently participating in the Positive and Safe Schools Advancing Greater Equity (PASSAGE) initiative in partnership with the Annenberg Institute, which is designed to address disparities in school discipline and student suspensions in particular. School staff are brought together with stakeholders to identify the best way to meet the needs of vulnerable students as a way of addressing these disciplinary challenges. A new initiative in our pre-K classes, Pyramid Model, provides culturally responsive training to our teachers of students in poverty to reduce early suspensions, which will expand to our kindergarten classrooms next year. As a partner district with the Consortium of Academic, Social and Emotional Learning (CASEL), MNPS receives an annual grant to support an extensive array of PD focused on cultural sensitivity. Recognizing the foundational role that a system-wide commitment to equity must play in achieving its mission and vision, the District recently appointed an Executive Officer of Equity and Diversity, reporting directly to the Chief Academic Officer. Finally, MNPS is partnering with the Intercultural Development Research Association (IDRA) to implement and monitor a district-wide plan to address

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diversity and equity challenges.

- Demonstrated expertise in innovative, research-based practices** that support active engagement of students in learning and making connections across subject matter through a project-based teaching and learning approach. For example, MNPS partnered with The Buck Institute for Education from 2010 until 2016 to build a cadre of 28 certified PBL trainers who are now equipped to turnkey their trainings at the five slated magnet schools.
- **Successful implementation of school turn-around practices** to raise levels of student achievement and close achievement gaps. To support its lowest-performing schools, MNPS has successfully applied for and received millions of dollars of School Improvement Grant funds. MNPS strategically applies these resources to bring about school transformation. One school, GraMar MS, for example, has been identified as one of the State’s best examples of a school that has achieved a “turnaround” and has served as a state-wide model.
- **A robust infrastructure in marketing, communications, and parent engagement** to support of a system-wide commitment to school choice. MNPS’s Communications Department provides option schools with a toolkit of templates, best practices, calendars and timelines, media support, and other resources to promote the district’s school choice initiative. Each year for the past five years, approximately 8,000 children applied to one of the District’s option schools for entry at elementary, middle, and/or high school programs.

(e) **Quality of Project Evaluation**

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

The project evaluation of the proposed MNPS 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 and performance measures,

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and a well-designed impact study that uses a rigorous research design to test for theoretical linkages between implementation of at least one key project component and at least one relevant outcome presented in the logic model. The evaluation design will guide the collection of data from multiple sources and stakeholder groups to provide feedback and findings to examine several overarching research questions:

1. To what extent are the MSAP-related outreach and student recruitment activities helping the district to meet the MGI targets outlined in the grant? How can outreach and student recruitment activities be improved?
2. To what extent is grant-funded PD building the capacity of teachers and staff to implement and integrate evidence- and research-based instructional strategies into classroom instruction? How can PD offerings be improved?
3. How has the grant supported the development of unique thematic curricula and enrichment activities? How can curriculum development efforts and products be improved?
4. To what extent are academic achievement outcomes of all subgroups of students in the magnet schools improving over the five-year grant period?
5. Are there differences in academic achievement gains among subgroups of students, such as by demographic characteristics, level of teacher participation in MSAP-related PD, and by home school (within or outside zone); and to what extent do those differences or gaps change over the five-year grant?
6. What impact does implementation of the IFL whole-school coaching model in each of the five elementary magnet schools have on student academic achievement outcomes in reading and math? How do achievement gains of treatment students compare to those of

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non-treatment comparison students?

MNPS proposes to retain Metis Associates to conduct the impact study (as described in section 1) and the comprehensive project evaluation of the MSAP grant (described in section 2). Metis, 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, has conducted evaluations of MSAP initiatives over the past 10 MSAP funding cycles for 11 community school districts in New York City; Broward County, FL; Baltimore County, MD; Champaign, IL; and Orangeburg County, SC. Metis has also conducted system-wide evaluations and audits of magnet and choice programs for several school districts including for Montgomery County (MD) Public Schools in 2015, Broward County (FL) Public Schools in 2014, Baltimore County (MD) Public Schools in 2013; and Pittsburgh Public Schools in 2008.

The evaluation of the MNPS magnet initiative will be directed by Claire Aulicino, a Senior Associate at Metis (see résumé in Attachments). Ms. Aulicino has more than 17 years of experience in designing and conducting program reviews and evaluations in the area of K-12 education. For the past 13 years, the focus of her work has been on school choice and magnet programs. She has directed evaluations of MSAP grants over the past six MSAP funding cycles and she has served as the lead evaluator for 13 MSAP grants. She also served as the lead researcher on the district-wide evaluations of magnet and choice programs for Montgomery County Public Schools in 2015, Broward County Public Schools in 2014, and Baltimore County Public Schools in 2013.

For the impact study, Ms. Aulicino will be supported and advised by Metis's Senior Associate for Design and Analysis Dr. Zhu (see résumé in Attachments). Dr. Zhu is an expert in research design, statistical analysis, survey research, and data management functions. She has

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played a key role in developing and/or implementing rigorous designs (both experimental and quasi-experimental) and applying advanced statistical techniques to evaluate intervention effectiveness and help programs become evidence-based. Dr. Zhu is in the company of only approximately 300 researchers nationwide who are certified as eligible to review education research studies for inclusion in the What Works Clearinghouse (WWC)—an initiative of the U.S. Department of Education Institute of Education Sciences—and thus is intimately familiar with the level of evidence that is specified in the Notice of Funding Availability and that the evaluation is expected to address. Metis is certified as Dr. Zhu’s organizational affiliation. Dr. Zhu holds a Ph.D. in Quantitative Research, Evaluation, and Measurement, and a M.A.S. in Applied Statistics, both from The Ohio State University.

In her role as Evaluation Director, Ms. Aulicino will be supported by highly qualified staff, including Dr. Zhu, and will regularly consult with Metis’s Design Consulting Committee (DCC) on all aspects of the evaluation. The DCC ensures that evaluation designs and analyses that are carried out are sound, of high quality, and appropriately address the key research questions. The DCC is a key component of Metis’s quality management process and provides a systematic review of the data and assurance of high technical standards in line with the accuracy standards of the Joint Committee on Standards, and with the American Evaluation Association’s principles for Systematic Inquiry. In addition, Metis has a duly constituted Institutional Review Board that is registered with the U.S. Department of Health and Human Services (IRB #00003465) and assures compliance with Federal-Wide Assurance requirements for the Protection of Human Subjects (FWA #00004755). Members of the IRB are specialized in various social sciences and are experienced in all aspects of field-based research and evaluation. Metis’s IRB meets as needed to review evaluation designs and guarantee protection to human subjects for Metis’s

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research studies. The IRB has submitted and gained approval for study protocols from numerous external IRBs from school districts around the country.

Furthermore, to obtain extant data to support research and evaluations within localities, Metis has successfully negotiated data sharing agreements to gather identifiable (when warranted) and de-identified individual student- and teacher-level data with numerous local education agencies across the United States.

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

Guided by the *What Works Clearinghouse (WWC) Procedures and Standards Handbook* (v3.0, 2014), Metis proposes to conduct a rigorous evaluation that is capable of producing evidence of promise if well-implemented. The rigorous evaluation, or impact study, will be conducted to establish empirical evidence to support the theoretical linkage between implementation of the IFL whole-school coaching model (key component) and student achievement in reading and math (relevant outcomes) as presented in the project logic model.

The impact study will build the research base on the effect of the IFL whole-school coaching model on student achievement outcomes. As described in CPP 2 and the Quality of Project Design, there is strong evidence that this model produces improvement in student outcomes, specifically reading and math achievement scores. The impact study will test the effect of this whole-school coaching model across the five MNPS magnet schools on student achievement outcomes and will add to an emerging body of positive evaluation findings on the impact of the IFL model on student learning. The impact study will be informed by qualitative and quantitative data to measure implementation of the whole-school coaching model. These data, as described below in section 2, will be collected from multiple sources and methods to measure fidelity of

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implementation of the model and will describe any variations in implementation fidelity, such as whether implementation varies across grades, schools, and time. Guided by implementation data, the impact study will use a rigorous design to estimate the impact of the IFL whole-school coaching model on intended student outcomes at different points in time based on treatment-comparison contrasts.

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

Using PSM, students who are enrolled in the tested grades in the five elementary magnet schools in fall 2017 will be matched 1:1 with comparable students in similar non-participating MNPS schools based on important observed baseline characteristics related to the outcomes of

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interest.² Depending on data quality and availability, the matching variables may include, but not be limited to: (1) at the student level – baseline achievement (previous ELA and Math scale scores as measured by the TNReady state assessments), grade level, age, gender, race/ethnicity, FRL eligibility, ELL and special education status, mobility, and previous school year average daily attendance; and (2) at the school level – enrollment size, percent FRL, percent by race/ethnicity, percent male, percent ELL students, percent students with disabilities, percent mobility, and percent previous cohort proficient in TNReady in ELA and Math. After PSM, tests of baseline equivalence of the treatment and comparison groups in each analysis sample will be conducted to ensure that the evaluation eliminates overt selection bias and meets the WWC evidence standards, albeit with reservations owing to the fact that unobserved variables may not be equated between the two groups.

Analysis Plan. To provide information for project implementation and improvement as well as to better interpret project impacts, every effort will be made to track data on key project inputs (e.g., level of PD provided). To investigate the impact of the IFL coaching intervention as implemented, Metis will use regression-type analyses for each year's outcome analyses, in addition to providing descriptive and/or correlational analyses of quantitative data. Since the study will involve multiple grades, achievement test scores in each grade (as necessary) will be converted to z-scores or another common metric, when needed, to produce combined impact estimates. The analysis models employed will statistically control for multiple covariates (e.g., students' pre-test and demographic variables, and school-level characteristics). Statistical

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

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significance adjustment procedures (e.g., Benjamini-Hochberg, Bonferroni) will be applied when multiple comparisons are involved for confirmatory contrasts specified in the same outcome domain. In addition, appropriate effect size indices (e.g., Hedges' g , Cox index) will be calculated to measure the practical importance of the findings. All aspects of the analysis plan will be aligned with the latest WWC requirements.

Sample Sizes and Minimum Detectable Effect Sizes (MDESs). Given the parameters of this proposed study, we obtained an estimated MDES of 0.070 standard deviation for key outcomes in overall impact analyses. This calculation was based on a sample of 3,250 subjects (1,625 treatment/1,625 matched comparison) and would provide adequate power (.80) to detect the above stated estimated MDES, assuming pertinent covariates explain 50% of variation in a given outcome at a significance level of .05 for a two-tailed test under the regression framework. The proposed study is therefore capable of detecting small project impacts.

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

(2) The Secretary determines the extent to which methods of evaluation include the use of objective performance measures clearly related to the intended outcomes of the project

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and will produce quantitative and qualitative data to the extent possible.

In order to assess implementation and impact of the MNPS magnet initiative, Metis will conduct a project evaluation designed to assess the implementation of all project activities and the extent to which the activities support achievement of all of the project outcomes and outputs, as articulated in the MNPS logic model and the project and GPRA-level performance measures. 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 MNPS 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 performance measures and to make adjustments as part of a continuous improvement model. As described in the Quality of Project Management, the continuous improvement process will be instrumental to ensuring the project activities are planned, implemented, assessed, and modified, as needed in order to achieve the grant objectives.

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

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and activities; the types of PD 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 and other key MSAP stakeholders with formative feedback on program implementation.

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, including to parents and staff at PTA and faculty meetings and during school family events; students at assemblies and through morning announcements; and to community and business members in partner meetings and community meetings such as those of the Chamber of Commerce. The Project Director will also work with the District's Office of Communications to share information through press releases, social media posts, and information on the District's website.

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

This section presents the project performance measures that will be used to assess the extent to which the four project-level objectives are being met in each grant year and the specific methods that will be used to collect and analyze data to evaluate impact on each performance measure.

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Project Objective 1: Reduce minority group isolation among African American and Hispanic students in proposed magnet schools.

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

School	Baseline (2016-17)	Year 1 (2017-18)	Year 2 (2018-19)	Year 3 (2019-20)	Year 4 (2020-21)	Year 5 (2021-22)
Reduce MGI among Hispanic students						
Glenclyff	64.4%	63.4%	60.7%	58.7%	57.4%	54.4%
Whitsitt	71.2%	70.1%	69.0%	67.3%	65.0%	60.6%
Reduce MGI among African American students						
Inglewood	69.5%	67.5%	66.4%	64.7%	60.8%	59.1%
Rosebank	60.7%	59.5%	58.5%	56.8%	53.8%	50.0%
Warner	89.4%	85.6%	81.2%	78.8%	77.7%	76.6%

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

Evaluation Methods for Project Objective 1: Data to assess Performance Measure 1.1 will be obtained from an annual analysis of student enrollment data from the District’s registers for all

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active students as of October 1 of each project year. Frequency calculations will be conducted by school and grade to determine the number and proportion of students by racial/ethnic group. Data to assess Performance Measure 1.2 will be collected from magnet application data to determine the number of applications by school in each year of the grant. Results from the enrollment and application data will be synthesized with data on outreach and recruitment logs and marketing materials for each school and the District to assess the effectiveness of the outreach and student recruitment plans.

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

Performance Measure 2.1 (GPRA Measure): At each magnet school, students in each racial/ethnic group, students with disabilities, low-income students, and ELLs will demonstrate measurable improvements in academic achievement in ELA as measured by an increase of four or more percentage points in the proportion of students in each tested grade who meet the grade-level standards on TNReady assessments in ELA (Grades 3-4) *in each project year* and, by Year 5, the overall increase will be statistically significant.

Performance Measure 2.2 (GPRA Measure): At each magnet school, students in each racial/ethnic group, students with disabilities, low-income students, and ELLs will demonstrate measurable improvements in academic achievement in Math as measured by an increase of four or more percentage points in the proportion of students in each tested grade who meet the grade-level standards on TNReady assessments in Math (Grades 3-4) *in each project year* and, by Year 5, the overall increase will be statistically significant.

Performance Measure 2.3: At each magnet school, students in each racial/ethnic group, students with disabilities, low-income students, and ELLs will demonstrate measurable improvements in

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academic achievement in Science as measured by an increase of four or more percentage points in the proportion of students in each tested grade who meet the grade-level standards on TNReady assessments in Science (Grades 3-4) *in each project year* and, by Year 5, the overall increase will be statistically significant.

Evaluation Methods for Project Objective 2: The standardized instruments for student assessments include the TNReady assessments which are part of the Tennessee Comprehensive Assessment Program (TCAP) and are administered annually to students in ELA, Math, and Science in grades 3-8. Results for these tests are expressed both in scale scores and performance level equivalents. Scale scores are unique by grade level and subject to determine the level at which students are considered to be “on track” for their grade level. For each grade, scores are categorized into one of four performance levels: Level 1 (Below), Level 2 (Approaching), Level 3 (On-track), and Level 4 (Mastered).

Student achievement results for ELA, Math, and Science will be derived from performance level analyses using matched data to calculate the proportions of students in each year who meet or exceed the learning standards (Performance Levels 3 and 4). 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 information, and/or where the results yield personally identifiable information.

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Project Objective 3: Ensure that *all* students attending the magnet schools benefit from the magnet’s educational offerings and have equal opportunities to gain magnet theme-specific value-added skills and knowledge.

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

Performance Measure 3.2: Through their participation in the magnet program, the proportion of students in each school who demonstrate mastery of a set of unique magnet value-added standards and skills will increase by at least 5 percentage points in each year of the grant, compared with baseline data collected in Year 1.

Evaluation Methods for Project Objective 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 and magnet elective course registration and enrollment data. Data to assess Performance Measure 3.2 will be obtained from the annual administration of authentic student performance assessments that will be developed by the magnet staff at each school in collaboration with District MSAP staff, the external evaluator, and program partners and based on published literature and research. The assessments, which will be completed by teachers for each student, will measure student attainment and mastery of unique magnet value-added skills. The skills will include theme-related content skills and 21st century skills, such as motivation, persistence, and communication, and will be specific to each school’s magnet theme and curriculum. The assessments will be administered in the spring of each year and analyzed by school, grade, and student subgroup using frequencies and cross-tabulations to determine the

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proportion of students who master the skills in each year. The assessments will be pilot-tested in Year 1 with item analyses and reduction conducted to ensure validity and reliability of the items in measuring the intended outcomes.

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

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

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

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

Performance Measure 4.3: In each year of the project, the percentage of parents/guardians at each of the five magnet schools who express a high level of satisfaction with the rigorous, theme-based instructional program at each school will increase by at least 10 percentage points in each of Years 2 and 3, compared with baseline data from Year 1, and by an additional five percentage points in each of Years 4 and 5.

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Evaluation Methods for Project Objective 4: Data to assess Performance Measure 4.1 will be derived from a review of each magnet school's annual PD plan, school and district PD activity logs, and PD agendas and sign-in sheets. Data to assess Performance Measure 4.2 will be derived from an analysis of checklists completed by instructional staff that will be developed by the external evaluator in consultation with the school and district MSAP staff to collect data on classroom practices and use of instructional strategies presented in grant-funded PD and job-embedded coaching. Data will be collected annually and analyzed by school and for the project using frequency and cross-tabulation calculations. Performance Measure 4.3 will be assessed with data collected on annual parent/guardian surveys that will be administered to all families.

In addition, in each year of the grant, surveys will be administered to instructional staff, parents/guardians, and students (in Grades 3 and 4) in each magnet school. All surveys will be administered online and in paper version in the spring of each project year. The staff survey will be administered to collect data from staff about their satisfaction with grant-funded PD, perceptions about impact of the PD on staff's knowledge, skills, and confidence in key concepts addressed in the magnet PD, and areas in which they need or would like additional PD. The survey will also measure staff's awareness and support for the magnet program and their participation in and satisfaction with program planning.

The parent/guardian survey, which will be available in English and Spanish and translated into other languages as needed, will collect data on parent/guardians' awareness of, satisfaction with, and participation in magnet program activities, as well as perceptions about impact of the program on student outcomes and suggestions for improvement. The student survey will also collect data on participation in and satisfaction with different magnet program activities, perceived impact of the magnet program on student learning and other outcomes, such as interest

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

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

The results of the quantitative and qualitative data analyses will be synthesized and presented by MNPS 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 MNPS 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 program level measures as required by Government Performance and Results Act (GPRA).

The measurement framework that will be used to guide the program evaluation is presented

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at the end of this section. The framework outlines the indicators; measures of change; and the data collection methods, sources, and timeline of the activities that will be conducted to assess progress toward meeting each of the MSAP objectives to be addressed over the five-year grant.

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

The evaluation costs reflect the total amount of resources needed to address the research questions and meet the MSAP program evaluation goals, in terms of providing formative and summative data for continuous program improvement of the project and addressing the GPRA and project-level performance measures in each year of the grant period. At the same time, the evaluation budget provides an adequate level of resources to conduct a well-designed and well-implemented impact study that will build evidence of promise for the impact of the project on the intended outcomes. In order for the study to produce evidence of promise, Metis has proposed a quasi-experimental design using PSM to identify a well-matched comparison group. 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 of promise through the impact study will contribute to the growing knowledge base about the type of magnet program interventions that are proven to have positive and educationally meaningful effects of student achievement outcomes. This knowledge base serves as an essential resource for districts for designing instructional programs and interventions to address student learning and achievement needs. The inclusion of an impact study component requires the robust level of resources that have been allocated in the budget.

The evaluation design also includes resources for a robust set of on-site data collection

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

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

The evaluation also has been designed with attention to cost efficiencies, e.g., avoiding redundant data collections and relying on administrative data files to the extent possible, using multiple methods of data collection, implementing minimally intrusive data collections, and using a variety of means of communication (e.g., video-conferencing where appropriate) to reduce costs associated with travel on the part of the Philadelphia-based evaluation team. Altogether, the evaluation costs represent approximately 2% of the total grant request, a small investment in light of the expected return in knowledge gains regarding effectiveness of the proposed MSAP program model.

MNPS MSAP Program Evaluation Measurement Framework

Outputs/Outcomes (as per logic model)	Indicators	Measures of Change	Data Collection Methods	Data Sources	Frequency of Data Collection
Program Outputs					
Thematic units of study for all grade levels (Performance Measure 3.1)	Implementation of thematic curriculum units	Proportion of students exposed to thematic curriculum units	Review of program documentation and curriculum, teacher focus group, principal interviews, class observations	Curriculum development and implementation logs and copies of thematic curriculum units, observation and interview protocols	Biannually
Professional development (Performance Measure 4.1)	Staff participation in magnet-related professional development	Proportion of teachers and school leaders enrolled in grant-related training and PD	Review of program documentation and PD participation data	PD plan, PD activity logs, and PD agendas and sign-in sheets	Biannually
MSAP Outcomes (Short-Term)					
Reduced minority group isolation in magnet schools (Performance Measure 1.1)	Proportion of students in each racial/ethnic group within each school population	Reduction in the proportion of African American/Hispanic students in each school population	Analysis of the proportion of students by racial/ethnic group enrolled in each school	MNPS Official Student rosters as of October 1	Annually
Increased interest and demand from out of zone students (Performance Measure 1.2)	Number of magnet applications submitted for each program	Increase in number of applications submitted for each school	Analysis of number of applications	MNPS Magnet application data files as of October 1	Annually
Improved student achievement (Performance Measures	Student proficiency on state assessments in	Increase in the proportion of students who meet	Analysis of student scores on state assessments	TNReady assessments in ELA, math, and	Annually

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Outputs/Outcomes (as per logic model)	Indicators	Measures of Change	Data Collection Methods	Data Sources	Frequency of Data Collection
2.1, 2.2, and 2.3)	ELA, math, and science	or exceed expectations on state assessments		science (grades 3-4)	
Increased student mastery of unique magnet value-added skills (Performance Measure 3.2)	Demonstration of magnet value-added skills	Increase in proportion of students who demonstrate mastery of magnet value added skills	Analysis of data collected on locally-developed student checklists	Teacher-completed student checklists	Annually
Increased staff implementation of innovative teaching strategies (Performance Measure 4.2)	Use of knowledge and skills related to magnet themes and PD	Increase in proportion of staff who report using/ are reported to use strategies and concepts related to magnet themes and PD	Analysis of staff checklists and surveys, teacher focus groups, principal interviews, class observations	Staff checklists and surveys, observation and interview protocols	Annual checklist and survey, biannual site visits
Increased parent satisfaction with theme-based instructional programs in magnet schools (Performance Measure 4.3)	High level of parent satisfaction with magnet program instruction	Percentage of parents/guardians who express a high level of satisfaction with theme-based instructional programs	Analysis of parent surveys and parent focus group responses	Parent surveys and focus groups	Annually