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COMPETITIVE PREFERENCE PRIORITY 1 - NEED FOR ASSISTANCE UNDER THIS PART

There are two immediate needs besides those associated with academic improvement that will help many students, especially African American children from lower income families, who are served by the East Baton Rouge Public School System (EBRPSS). And the creation of new magnet schools can do so much to meet these needs. The first is finding supplemental funds that help make new project magnet school programs attractive enough to encourage different racial and economic groups of students from the proposed St. George City “breakaway”¹ community serving the highest income, mostly white population within the East Baton Rouge Parish to attend the **four newly created magnet schools (Villa del Rey Elementary, Park Forest Elementary, Park Forest Middle and Belaire High)** and the second need is to prevent any additional “breakaway” school systems from forming since Louisiana state law allows communities within EBRPSS to set up their own school systems.

This grant is intended to attract students living within the boundaries of the EBRPSS to attend the newly created high quality magnet schools so that all students can benefit from learning in a racially and economically diverse school setting. The MSAP proposed project EXPLORE (**E.X.P.L.O.R.E. - Encompassing Exciting Program Learning Opportunities for a Rewarding Education**) is designed to make it possible for the to set up new attractive magnet schools that result in racial and economic diversity by providing the significant supplemental magnet services that address both the needs of academically talented students and those who have suffered because of the academic gap that exists between Baton Rouge’s African American student population and their mostly white more affluent counterparts. The needs associated with generating the required supplemental funds for magnet services are due primarily to the loss of local and state funds because of the “breakaway” school systems and a loss of students to private schools during

the years the school system was implementing its desegregation plan. Problems associated with those needs are addressed in detail in the section of this proposal titled: “The difficulty of effectively carrying out the approved plan.”

The Community and the Schools – Baton Rouge is the largest city in a parish that is the largest in the state. It is also and the capital of Louisiana and one of the greatest major industrial, petrochemical, medical, and research centers of the South. The Exxon-Mobil facility is the second-largest oil refinery in the United States and the world's 10th largest. It is also the principle home of two major state universities: Southern University (SU) and Louisiana State University (LSU). Based on data from the 2014 Census, the parish has a population exceeding 446,042 people, making it the largest in Louisiana. The racial makeup of the parish is 46.2% African American and 48.9% White.

The School System –EBRPSS serves most of East Baton Rouge Parish with 82 schools (49 elementary schools, 12 middle schools, 15 high schools and 7 alternative support facilities). The School System employs approximately 6,000 persons with 3,500 directly involved in the instructional process. Others provide ancillary support such as general administration, repair and maintenance, bus transportation and food service. Although the population of the parish is approximately 46% African American, public school enrollment is currently 79% African American. **The mean family income of families living in Baton Rouge is approximately \$73,500; yet 85% of the students attending EBRPSS schools qualify for free or reduced price lunches.** As a result, based on 2012 federal guidelines, the clear majority of the families of students attending public schools in the city make less than \$42,642.²

The District’s October 1, 2015 student population by racial groups is:

Schools	AA	% AA	Non-AA	% Non-AA	Total
Elementary (PreK-5)	16,478	76.92%	4,945	23.08%	21,423
Middle (6-8)	6,440	77.29%	1,892	22.71%	8,332
High (9-12)	9,139	78.12%	2,560	21.88%	11,699
Total School System	32,057	77.33%	9,397	22.67%	41,454

Figure: October 2016 Enrollment

The district is currently governed by a seven-member board of education that is elected by all residents of the district. The district’s 2016-2017 school budget is \$434,457,508 million³.

There is a distinct need for additional effective magnet schools in Baton Rouge that will attract students from throughout the parish, especially from the proposed St. George

“breakaway” school district located within EBRPSS, and students who attend private schools and who live in the higher-income Baton Rouge neighborhoods. In the years following the July 2003 Court Approved Final Settlement Agreement that sets forth specific procedures for setting up desegregated schools with better instructional programs, district officials have set up eight elementary magnet schools, seven middle magnet schools and four magnet high schools throughout the parish that have proven very successful (**See Desegregation Section**). School performance data show that EBRPSS magnet schools have helped lower income African American students who are considered “at-risk⁴” to meet and exceed state minimum achievement levels. School officials recognized that magnet programs, when implemented properly would be particularly beneficial to “at risk” students who participate in the unique magnet programs.

Addressing the problems associated with the education of “at-risk” youth is fundamental if EBR school officials hope to equate the quality of education of its African-American student population with that offered to students from more economically affluent communities.

All four schools being proposed (Villa del Rey and Park Forest Elementary, Park Forest Middle and Belaire High) are located on the fringe of economically deprived African American neighborhoods. Too many of the students are from these neighborhoods who are considered “at-risk.” Thus, a need is to create attractive magnet schools that do not displace those “at risk” students who choose to participate in magnet programs, but to create an educational setting where they can interact with a diverse group of students representing different racial and economic neighborhoods throughout the parish. That creates a challenge that requires an extensive effort. It requires teachers to have the skills to handle the diverse set of students. It requires the magnet programs to address the racial and economic diversity that impacts the learning of all students. To do this research, shows that the magnet programs should: 1) create an appropriate learning environment; 2) clearly convey expectations; 3) give students choices; 4) motivate students with real-life connections; and 5) accommodate students in need of space.

There are not enough local and state funds available to set up new magnet schools with a learner-centered approach that addresses these factors, which is integral to the process of creating an appropriate learning environment. Magnet funds are needed to train teachers to focus on the process of learning rather than on content. Funds are needed to train teachers to facilitate student learning rather than to act as directors of knowledge. Magnet funds are needed to create an attractive school environment whereby students are motivated to reach the state student performance designated level of Advanced (superior performance beyond the proficient level mastery) or Proficient (demonstrated competency over challenging subject matter and is well prepared for the next level of schooling) on LEAP 21 and GEE 21 tests. Funds are needed to create attractive magnet programs whereby high school magnet students will be motivated to take and be successful on SAT or ACT tests and meet Louisiana university entrance requirements. And, supple-

mental magnet funds are need to help magnet students participate in academic courses that meet the minimum academic requirements for entrance into the Louisiana college system. As importantly, magnet funds are needed to ensure that all students have well trained teachers who have the skills to carry out the research based Interdisciplinary and Project Based instructional model using a Sciences and Arts theme, which is designed to be both exciting and attractive and helps students understand its need and value for the future of the planet.

(1) The costs of fully implementing the magnet schools project as proposed

The Costs of Implementing the Project EXPLORE - The total project cost associated with the magnet project component schools for five-years including state, local and federal (includes MSAP) is shown as follows:

School	Total Five Year
Belaire Creative Science and Arts Magnet High School	\$19,891,789
Park Forest Creative Science and Arts Middle Magnet School	\$13,795,682
Villa del Rey Creative Science and Arts Magnet Elementary School	\$8,547,820
Park Forest Creative Science and Arts Magnet Elementary School	\$7,183,667
Program Administration	\$7,830,970
Total Federal, State and Local Funds To Fully Implement the Magnet Schools	\$57,249,929

Source: EBRPSS Finance Office

The personnel cost reflects the salary and benefits associated with each magnet school supplementary staff. Examples of equipment items include: computer hardware and software, STEM and Renewable Energy theme equipment including: robots, anatomical models, portable science

labs (SmartLabs™)⁵, Animation Centers, geothermal equipment such as a geothermal model heat pumps, a miniature wind turbine to demonstrate wind energy, solar panels, a Bio Dome and audiovisual equipment. Examples of supplemental programs and materials include: AVID, iRaise, InTeGrate, supply items include: supplementary materials for; math, coding, science, arts and music reference textbooks, consumable supplies (paper, workbooks, arts materials, etc.), office supplies, textbooks and teaching aids; and training to carry out such programs. Other costs associated with the grant include staff travel and services provided on a contract basis such as equipment repair/maintenance contracts and enrichment events presented by organizations from outside the District and field trips.

(2) Resources available to carry out the project if funds were not provided

This past year, EBRPSS had to cut positions for dozens of instructional coaches and middle school teachers as well as nixing about \$2.5 million worth of school bus purchases from the general operating budget. The proposed cuts total roughly \$15 million overall. Nearly half of the cuts, about \$7 million, stem from a new staffing formula that went into effect this past fall. **The formula leaves elementary and high schools relatively unscathed**, but middle schools would have about 52 fewer teachers, and students in those grades faced larger class sizes. The total number of instructional coaches at all schools shrank from 51 to just 12.

However, Superintendent Drake hired more magnet and gifted-education teachers to support previously approved expansions in those programs. He also hired more career and technical education teachers as part of an expansion of career-oriented classes at high schools. Employees also received modest pay raises known as step increases for advancing up the salary scale, at a cost collectively of about \$600,000. Thus, the superintendent is providing the resources necessary to carry out the district wide magnet program.

The total amount of local funds that has been scheduled for the five-year project period is based on the staff’s projections. EBRPSS provides all magnet school programs, including the new ones being set up under MSAP, with supplemental funds for magnet services. The final amount approved by the board will be determined annually. Future budgets could be affected by the proposed “breakaway” school systems approved by the legislature. The total amount available from the state to EBRPSS could also be affected by unpredictable funding decisions made at the legislative level. However, even if fluctuations take place, there will be sufficient state and local funds to operate effective new magnet schools, so long as MSAP can provide the initial startup costs. The total anticipated costs from local and state funds (includes federal excluding MSAP) for operating the four new magnet programs in EBRPSS are shown below.

School	Enroll-	Total Five
Belaire Creative Science and Arts Magnet High School	1,226	\$17,228,978
Park Forest Creative Science and Arts Middle Magnet School	804	\$11,298,612
Villa del Rey Creative Science and Arts Magnet Elementary School	432	\$6,070,896
Park Forest Creative Science and Arts Magnet Elementary School	314	\$4,412,642
Program Administration		\$4,681,335
Total Enrollment	2,776	
Total State and Local Funds Allocated for the Magnet Schools		\$43,692,463

Source: EBRPSS Finance Office

Under State law, the District must rely principally on a local property tax for funding its operating costs. Any increase in the local property tax rate requires approval by the voters of the Dis-

trict. An increase beyond the current levy would require a simple-majority of 2/3 of the District's registered voters. Achieving such a super-majority vote is very difficult. Further, EBRPSS is limited as to the total amount of debt it may legally incur by Louisiana State Statute, Section 164.161. The District's total indebtedness, as defined by statute, is not allowed to exceed 10% of the assessed valuation of its taxable tangible property base.

(3) The extent to which the costs of the project exceed the applicant’s resources

The cost of the magnet school project that exceeds the resources of EBRPSS is outlined below. These additional costs are extremely important to help make the unique programs at the four magnet schools attractive enough to be successful immediately. The Sciences and Arts themes are so unique that all four schools will be in demand because of the success of other magnet schools in the district. Without the federal support, the new magnet programs cannot be implemented. This is one program that must use special resources, equipment and supplies not only to attract students into schools for racial and economic diversity purposes, but also to encourage them to work together on projects. No other EBRPSS magnet schools offer this unique Sciences and Arts theme. The supplemental costs are high but the returns are extremely beneficial.

School	Total Three Five
Belaire Creative Science and Arts Magnet High School	\$2,662,811
Park Forest Creative Science and Arts Middle Magnet School	\$2,497,070
Villa del Rey Creative Science and Arts Magnet Elementary School	\$2,476,924
Park Forest Creative Science and Arts Magnet Elementary School	\$2,771,025
Program Administration	\$3,149,635
Costs Exceeding Funds Available To Fully Implement the Magnet Schools	\$13,557,465

Source: EBRPSS Finance Office

In July 1999, the Louisiana State District Court ruled that the City of Baker could carve out of EBRPSS a separate school system, often referred to as a “breakaway” school system, based on legislation that had been passed by the Louisiana state legislature. The Baker School System became a reality for the 2003-2004 school year. Under the same legislative authorization, the Zachary Community School District and the Central School System started operations that same year. Baker pulled seven schools from EBRPSS, Zachary pulled 12 schools out of EBRPSS and Central followed in 2007 by pulling out seven more. The result has been a revenue loss of over 17% of the district’s annual budget.



Recently, there has been a movement to create the St. George School District, which ran into opposition in the Louisiana House of Representatives. However, the St. George community, which is a higher income mostly white area of Baton Rouge has started a new move-

ment - an attempt to incorporate itself into the city of St. George, and then set up the St. George School System. The movement to incorporate St. George has set up a battle over shared resources, race, socioeconomics -- and the parish's tax base. A more detailed account of this issue is spelled out under the “Desegregation” section.

With the movement by the St. George community, combined with the loss of schools to Central, Baker and Zachary cities, the district could lose up to a total of 25% of its total budget by 2018.

That is helping to put the EBRPSS African American student population at a greater educational

disadvantage with their higher income white counterparts, who too often, have sought leave the school system. That is also causing an increase in the isolation of African American students in EBRPSS schools, with a significant increase in the number of the student population from impoverished families. Even with the success of the EBRPSS magnet schools, there have not been enough of these magnet programs to keep citizens from looking for school choices.

As a result, too many of EBRPSS students live in poverty who live in isolated lower-income Baton Rouge racially segregated neighborhoods. Additionally, too many of the African American youngsters live with one parent who has not been provided with an adequate education. Despite slight gains in achievement that these students have worked to make over the past decade, their gain has been tempered by the problems directly related to the effects of the “breakaway” districts. Too few of EBRPSS African American children have family members who have the education or skills to help them succeed. Too many are struggling to break the bonds of poverty. Too few are prepared to enter technical and professional trades available in many of the area’s local technical schools and colleges. As stated previously, too many are “at risk.”

EBRPSS will continue to struggle to provide an adequate education for all students who come back to the parish schools. Yet, with MSAP funding, EBRPSS will be able to offer the quality and scope of programs described in this proposal. Teachers will have the time to do a comprehensive re-examination of the curriculum, and professional development will be more comprehensive. The best and most innovative teachers will be able to use appropriate strategies to engage students in applying knowledge, problem-solving, and team efforts to create projects, and school leaders will be able to act as competent resources for teachers who have been given quality training, time, and resources necessary to master the new strategies for organizing the classroom and presenting the curriculum. More students will have the opportunity to work with cutting edge

technologies. The development of partnerships with business and community agencies will grow and more students will have the opportunity to apply and test their skills in real world settings.

COMPETITIVE PREFERENCE PRIORITY 4—INCREASE RACIAL / SOCIOECONOMIC DIVERSITY

EBRPSS has a history of setting up successful magnet schools. Their success is spelled out more fully in the **Desegregation Section** below. These schools, such as Baton Rouge Magnet High and Sherwood Middle Magnet Schools are among the most successful in Louisiana. Belfair and Mayfair elementary schools, and McKinley Middle School are among many magnets in EBRPSS that have proven successful in turning failing schools around at every grade level. With MSAP funding, magnet students in the four funded schools will have specially trained teachers, additional resources, and an enriched signature/magnet curriculum. They will experience innovative instructional practices in carefully crafted settings that foster genuine integration across race/ethnic and socio-economic lines.

Reducing and preventing further African American group isolation is a challenging task. With the increasing academic success of the diverse population of students attending the participating schools, located on the fringe of the lower income African American community, the new magnets to become attractive enough to prevent the St. George “breakaway” school system from becoming a reality, while attracting students from private schools and other areas of East Baton Rouge Parish. It has been done before in other EBRPSS magnet schools, and with appropriate federal financial assistance, will be done again.

The socioeconomic make-up of a school is one of the strongest predictors of student academic success. The US Department of Education (DE) recognizes that MSAP funds that are used to set up magnet programs in high-poverty schools, which have the capacity to attract students from higher income families into those schools, not only significantly benefits the school and the low-

er income community it serves, but also positively impacts the entire student body served by the magnet program. Thus, **socioeconomic diversity by targeting successful magnet services in high poverty schools reaps significant rewards for the participating schools, their students, and the neighborhood served by that school.**

High-poverty schools are defined nationally as public schools where more than 75.0 percent of the students are eligible for free or reduced-price lunch (FRPL), and low-poverty schools are defined as public schools where 25.0 percent or less of the students are eligible for FRPL.⁶ In Baton Rouge, 70 of the 82 schools have student populations where 75% of the students qualify for FRPL. **The four schools included in this grant meet that criterion.**

Although the median income of East Baton Rouge Parish residents went up in 2016 from 2015, a growing number of residents -- about one in five -- remained in poverty, according to new data from the U.S. Census Bureau.⁷ In Baton Rouge, the majority of schools where students meet the national definition of **high-poverty schools are defined as public schools where more than 75.0 percent of the students are eligible for free or reduced-price lunch (FRPL) are located in the areas with the highest percentages of African American students (See map title “Percent of Population Black” in Appendix).**

Higher Income areas of the city are where the highest percentage of the population is white students are located (See Appendix Map titled “Location of Higher Income Areas in East Baton Rouge Parish”). Over a period of 10 years, all three of the highest income areas of the parish have attempted to pass petitions allowing them to take over and manage schools that are in their geographic zone. Louisiana law currently allows incorporated communities to set up their own school system. The city of Baker in the mid-1990s became the first “breakaway school system” by voting to remove schools within the community from the East Baton Rouge Parish school

system. When the new school district opened its doors in 2003, Baker school's attendance was restricted to the children who lived within the 7.9 square miles of the city of Baker. Subsequently, neighboring communities of Zachary and Central created the independent Zachary and Central school districts.

The racial and economic diversification effort to offer students an attractive high-quality magnet program that promotes racial and socioeconomic integration will have a profound impact on reducing the number of low performing high-poverty schools in EBRPSS. This will help the district to continue the use of magnet programs to greatly improve academic achievement and close achievement gaps. The newly funded magnet schools will help EBRPSS to provide additional successful magnet programs that prevent the citizenry (especially the upper-income white population) from abandoning their school system by carving out new school systems within the boundaries of EBRPSS. The newly funded magnet schools will help attract a diverse student population for an advanced education that includes an important topic for the Baton Rouge community (substantive knowledge of a sustainable energy future for Louisiana with heightened awareness of the benefits of Sciences and Arts and energy efficiency). The new magnet schools will help EBRPSS to continue the Board's promise to provide a quality education for returning students (those who left to attend the 69 private schools currently serving 20,443 within the parish) who would come back to the parish magnet schools, if they are available. The newly funded magnet schools will help reduce the significant achievement gap (especially in mathematics, science and technology) that exists due to academic disparities among different racial and economic groups of students served in the district's racially isolated non-magnet schools.⁸

A) DESEGREGATION

East Baton Rouge Parish School System (EBRPSS) has the largest student population in Louisiana, and also has the distinction of being party to one of the longest running school desegregation cases in the nation. Individual students and the U.S. Department of Justice filed the lawsuit against the East Baton Rouge Parish School Board in 1956, and the litigation finally ended in 2003, but with provisions. The plan had been in existence for a total of 47 years.

The 2003 settlement agreement stipulated provisions that included the continuation and expansion of the system's magnet school program; implementing specific racial quotas for student populations at magnet schools; appointing a "magnet program evaluator" to oversee the magnet program as a tool for desegregation; continuing and refining the voluntary majority-to-minority transfer plan; implementing new enrollment caps for non-magnet schools; removing temporary buildings; completing promised construction projects; investigating segregation within extracurricular activities; hiring more teachers to reduce class size; and expanding the school system's gifted and talented program. Federal District Judge Brady approved the agreement, dismissed the lawsuit, and granted EBRPSS unitary status. However, the court retained jurisdiction and oversight of the school system until July 2007 to enforce the provisions of the agreement. Finally, in July 2007, the court officially terminated its oversight of the district.

The settlement agreement in East Baton Rouge Parish was hailed as a new beginning, allowing the school board to make plans in 2003 for considerable construction projects within the district. However, ending the desegregation litigation was hardly the "magic pill" the school board may have hoped it would be. While district autonomy, meaningful desegregation, and the termination of expensive legal representation were all valuable benefits of the settlement agreement, EBRPSS continued to have problems. The tenuous racial balance achieved by the 2003 settle-

ment agreement had been undermined by the splintering of the EBRPSS. In 2003, both the Baker and Zachary communities split from EBRPSS to form their own school systems. Likewise, the Central community left the EBRPSS to form its own school system in 2007. The new Central Community School District took a sizeable proportion of EBRPSS's white students, decreasing the percentage of white students in EBRPSS to 11% in the fall of 2007. And, since the district was no longer under a desegregation order, the remedies available to the district to maintain racial balance were limited.

By law, a district no longer under a desegregation order is prohibited from using racial quotas or any other racial criteria to maintain desegregation (EBRPSS had been using racial criteria to ensure diversity within its magnet schools). Yet, to maintain diversity, the district currently uses socioeconomic status in magnet school admissions criteria.

School officials are aggressively working to provide parents and children with more choices through new schools and expanded magnet programs designed to improve its performance. Since July 1, 2011, the district has opened, renovated, or completed construction projects at 26 school sites. From 2009 to the present, 10 sites implemented new programs for gifted students. During the 2013-2014 school year, more than 850 new students entered magnet programs, bringing the total number of students enrolled in specialized programs (magnet and gifted) in the district to more than 10,200. In 2014, EBRPSS opened new Mandarin Chinese and Spanish language immersion programs at Polk Elementary. In August 2014, Brookstown Middle Magnet Academy opened offering magnet programs in broadcast communication and health science. In the fall of 2016, the new Lee Magnet High School opened (district funded) with a projected capacity of over 1,200 students. This state of the art facility will expand available magnet choices by housing the Southeast Middle and Capitol Middle Digital Media academies. In addition, EBRPSS is

making a concerted effort to improve community perceptions. The district maintains a commitment to provide superior customer service to all stakeholders. Excellent customer service includes providing: students with quality education; parents with a sense of security that their children are in a safe environment conducive to learning; and community members with the confidence that their tax dollars are well spent.

EBRPSS has several ongoing projects intended to increase the public awareness of the positive impact the district has on student academic achievement. Among these projects is the production of "Day in the Life of a School" video packages showcasing teaching and learning in classrooms and "News & Views with the Superintendent " to update the community on the district. The district produced and placed colorful display magazine ads and a 30-second television spot promoting student academic achievement. The Communications Department provides professional development training for principals and administrators in the areas of media relations, emergency and incident communications, and school marketing. And all this has been done with local funds. But addressing the racial and economic issues that exist in the four schools included in this proposal requires financial resources that are not currently available.

Reducing and preventing further African American group isolation is a challenging task. It requires the school district to address problems associated with failures of schools in the Baker "breakaway" school system and those caused by attempts to set up a new "breakaway" school system, whereby a significant population of upper income non-African American students would be removed from EBRPSS. To do this, the school system needs federal financial support as to adequately address the MSAP criterion for reducing minority group isolation while increasing economic diversity in the four participating schools.

(a)(1) Plan to recruit students from different backgrounds into the magnet schools.

As the best means to remedy the racial/ethnic and socioeconomic segregation of its schools and improve achievement, EBR proposes the creation of four new magnet schools as a way to diversify schools.

Although students are selected for magnet schools without any entrance requirements, they must be actively recruited to a theme that is truly attractive, but with an ability to deliver viable quality instruction. Because magnet programs are currently operating in the district, student recruitment into the new schools will be more difficult given the history and academic performance of the four schools in the past.

A funded full time Assistant Magnet Program Director (APD) will work with Ms. Porter, the district's Magnet School Director. They will also work with a grant funded full-time magnet promotion specialist to improve the current magnet recruitment campaign. Together they will integrate the "Sciences and Arts magnet" theme to other media, including the school's web site, public relations (pitching story ideas to local press outlets), sales promotion (offering special incentives such as donated local theater and concert tickets to families who refer new students to the school), and personal selling, through parent outreach calls by the principal and staff, coordinating the development of district workshops, arranging magnet school fairs, hosting parent and community forums, utilizing the media and other communications in heightening program awareness, and in supervising the production and distribution of recruitment literature.

The APD will oversee the student recruitment process. The Promotion Specialist (RS) will work with the District's Public Information Office to develop the advertising and recruiting plan for the Project EXPLORE. Together they will oversee a marketing and recruitment campaign designed to interest large numbers of students from throughout the district in applying to the new

magnet programs. The RS will also be responsible for the annual Magnet Fair and the recruitment campaign held in the spring.

A Recruitment Plan will be coordinated with the current plan which provides information about each magnet school to parents throughout the geographic region. It is designed to reach parents in both the parish schools and the pullout districts. The revised plan will be designed to offer the community specific information about the school calendar, bios of principals and teachers in magnet schools, concise descriptions of the themes and the special programs and services offered, and a description of the student application process.

Marketing –will be carried out through two primary media vehicles. First, an outdoor advertisement will be developed and placed on several high traffic locations in areas of the school district targeting student populations that offer the best chance of racial and economic diversity in each magnet school. The Sciences and Arts magnet theme, as well as positive information about the unique academic curriculum, teacher training (advanced degrees and certification), discipline and safety will be clearly communicated in the headline, along with supporting evidence along with information about each school’s open house. Prominently featured will be photos of the diverse set of students involved in thematic activities, as well as a color scheme and logo that serves as the basis for promoting each school in different media. Direct marketing is another primary medium that will be used in the marketing campaign. The same design cues will be used as the format for the communication with much more detailed information, stressing the quality of the magnet academic theme, and other strengths identified in the market research, including academic curriculum, teacher training, discipline and safety “teacher skills,” including “the emphasis on discipline” and the record of “safety.”

Magnet School Planning Committees comprised of district school representatives along with community and business leaders will be set up to coordinate recruitment efforts so that the magnet concept will be included in the Baton Rouge and the school system's strategic plan. Additionally, the recruitment process for the four new magnet schools will be coordinated with the procedures used for the 20 magnet schools that currently are in operation.

The Project EXPLORE Recruitment Team, with overall responsibility for coordinating recruitment activities at the central office and school levels, will include the APD, the RS, and magnet school faculty members. The recruitment team will participate in the marketing and recruitment activities for each project school. All magnet publications will be translated into languages related to ESL students. All project services will be carried out in conjunction with the district's current magnet office. The school recruitment team for each grant funded magnet will include the principal, a parent from each project school, and project specialists.

A special media campaign will be launched to highlight the specialty themes and the unique, exemplary structure of the programs as well as teacher credentials, each school's method of maintaining discipline and the school's safety record. It will be done through campaign components such as direct-mail brochures; public service announcements in electronic media; a district produced cable television program; newspaper advertisements; and billboards on highways, in neighborhoods, on metropolitan transit buses and on movie theater screens.

The District will have a magnet school **parent information** line that is widely publicized in brochures, district publications, all 82 of the district's schools, and the many available community-based resources. This information line is located within the Magnet Program Office and will be designed to answer specific questions on magnet school programs. An answering service will take messages after hours for those unable to call during regular business hours.

Extensive information distribution and recruitment will take place at activities such as open houses, citywide community forums, shopping mall canvassing, and magnet school fairs held in the **Baton Rouge Convention Center**. Each school will have a theme booth with professionally developed displays to promote the school's theme using interactive media to promote the new magnet school. Each booth will offer attractive brochures and pamphlets describing the theme of the schools. Student applications will be available at the booths as well as at other public events, including the schools, community libraries, restaurants, real estate agencies and other public facilities throughout Baton Rouge.

Magnet School Councils and the Community Advisory Committee will assist schools with their marketing and recruitment plan, as well as serve in an advisory capacity to the site administrators at each magnet school. A **Parent Information Center** will be established affording parents already involved in district magnet schools the opportunity to provide direct assistance to other parents interested in magnet programs.

Other strategies and activities include informational posters for display at grocery stores, fast food restaurants, churches, barber and beauty shops, and shopping malls; promotional brochures and videotapes; direct mail; and individual and group tours of magnet schools.

Parochial and private city schools, throughout East Baton Rouge Parish are a fertile area from which to recruit. Tuition to private and parochial schools is on the rise and many families who once could afford them, now cannot. According to a recent survey, many are thinking of reentering public schools. Strong magnet programs will not only help to draw students away from the St. George area and private schools, but also will keep them from moving away from the city to the suburbs. In developing a plan to expand the recruitment efforts targeted for these schools, several different initiatives have been created to promote the schools and reach prospective par-

ents. Designated employees of area businesses and institutions will be knowledgeable about the schools and will serve as “recruiters”. Each of these businesses and institutions will feature information about the new schools in their members’ newsletters.

The **Baton Rouge Parish Ambassadors**, a volunteer, very active citizens group, is among the many civic organizations actively promoting recruitment for the schools. In addition, the Greater **Baton Rouge Association of REALTORS**, and particularly real estate agents with property in the City of Baton Rouge, will be recruited to promote the schools to their prospective clients.

Thus, the recruitment and student selection strategies and procedures that have proven to be successful in bringing students together from every social, economic, ethnic and racial group into magnet programs will be carried out efficiently and effectively as part of this funded project.

(a)(2) Foster interaction among students of different backgrounds in activities --

The magnet schools included in this proposal has been set up to recruit students from the higher income neighborhoods (especially those located in the St. George proposed “breakaway” community in the city by through target campaigning, where the success of magnet education is promoted in the malls that service these areas. Also, parents will be invited into the schools and shown that even though most of the project schools are located on the fringe of lower-income neighborhoods, the facilities are safe and the school staffs are nurturing. Based on a well-designed magnet promotion campaign, student selection procedures are in place to select a student population for each magnet school that consists of a diverse population that includes the different races, cultures and economic groups that make the capital city such an extraordinary place. Part of the success of the magnet program is an appreciation for the diversity and its strengths. Each magnet school principal is trained to appreciate the strengths of diversity and is expected promote their positive aspects daily. The magnet faculties are trained to value the strengths of

diversity, with an appreciation for cultural differences and an understanding that being poor is not necessarily a reason for children to struggle in school. Part of the intention of this grant application is to select faculty training programs such as those offered by the South Central Collaborative for Equity, which is part of the Intercultural Development Research Association (ID-RA/SCCE)⁹ and the Southeast Comprehensive Center¹⁰ that are designed to help the project magnet school faculties and staff to learn more about racial equity, dealing with economic disparity, ensuring equal opportunity for academic achievement, providing fair discipline in a diverse school setting, decrease conflict among different races and cultures, and engaging parents and community members. Faculties in the project magnet schools will be offered a variety of approaches/styles/strategies to teach the Interdisciplinary Project Based Instruction (IPBI) thematic curriculum including heterogeneous grouping, cooperative learning, extended-day classes, and inclusion. All aspects are designed to promote a positive approach to teaching in an integrated learning environment so that all students of different social, economic, ethnic, and racial backgrounds can attain a good education.

The project magnet schools will offer multicultural sensitive classrooms that allow students to understand and appreciate their own culture while recognizing its similarities and differences to other cultures and perspectives in society. Important components of the multicultural classroom will include (1) explicit awareness of cultural influences in society, (2) academic content that is relevant to cultural groups, and (3) skills to communicate effectively across cultures. Teachers will prepare all students to become multicultural competent citizens in a diverse society. Students will gain knowledge about others' cultures is also essential. They will learn the values, practices, and beliefs of other cultures to understand the similarities and differences with their own. Everyone has a culture, not just people whose backgrounds are different.

The perspectives, experiences, and backgrounds of all students are considered an important part of learning. In order to offer diverse perspectives, teachers will provide students opportunities to participate in multiple contexts in schools. Collaborative classrooms based on the Individually Guided Education (IGE) concept, will be where students are heterogeneously and multi-aged grouped, be engaged in a thinking curriculum, and where they learn from each other, with no student being deprived of the opportunity to make contributions and to appreciate the contributions of others. Thus, students in collaborative classrooms will not be segregated according to ability, achievement, interests, or any other characteristic. They will be places where shared knowledge and authority, mediated learning, and heterogeneous groups of students are the essential elements of the learning environment.

Teachers will also offer students magnet thematic activities that combine academic learning with real-world practice in a relevant workplace. This involves collaboration (often called cooperative education) among students, educational institutions, and employers. Real-world experience for students in the form of work-based placements or internships will serve to provide entry for learners into a community of practice. As an example, cooperating universities including Barton Rouge Community College (BRCC), Southern University and A&M College (SU) and Louisiana State University (LSU) offer dual credit discussed in more detail below. Additionally, high school students will be involved in mentoring and job shadowing with local corporations. The cooperative programs offer clearly defined integrative pathways that allow students to make sense of their learning. The strength is the use of practice-based learning, whereby students gain an integrated approach by combining classroom learning to what is needed in the workplace. Although the use of community agencies and services are not unique to EBRPSS, their use as a group for comprehensive support to the success of the magnet programs is being included for the

first time. Each agency and service provider will become an integral part of the magnet program. As a result, the community will become more directly involved in the success of educational reform and will be able to incorporate the use of educational services into the integration of the races living in Baton Rouge Parish and for community renewal.

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

EBRPSS is guided by many significant assurances from the U.S. District Court and Board of Education policies that are standards which access to District programs is measured. In accordance with the assurances and in the spirit of providing equal access to project participation by all students, the Board of Education is making a concerted effort to provide program access to everyone who has interest in participating in this project. The Board will amend district policies to be consistent with the changing guidelines related to desegregation. The former US Secretary of Education amended the definition of “sex desegregation” to explain that the Department interprets sex discrimination under Title IX to include discrimination based on transgender status, gender identity, sex stereotypes, and pregnancy and related conditions. Also, the regulations add a definition for “special educational problems occasioned by desegregation” to clarify that this term does not refer to the provision of special education and related services as defined by the Individuals with Disabilities Education Act (IDEA). These definitions are part of district policy. Recognizing that in the past, specific groups including racial and ethnic minorities, women and the disabled have often been denied access to special programs, special provisions will be made to recruit such members into this project. This proposal has included methods for racially integrating each classroom in each magnet school.

The magnet program is also designed to encourage disabled student participation. As part of the student selection procedures, disabled students are encouraged to participate, regardless of race.

The Board policy statement included in the selection procedure states:

Disabled students are encouraged to apply for any magnet school without regard to race or gender. Each magnet school site will be specially equipped for the physically challenged student. All primary school magnet programs are in one-floor schools or on the first floor of a two-story building. All elevated levels within the school will have either ramps between the levels or specially designed lifts. In secondary magnet schools, there will be elevators in two-story buildings. These schools will also have either ramps between any elevated levels or specially designed lifts. Special audio equipment is available for the hearing impaired and Braille educational materials are available for the blind and visually impaired.

These accommodations are provided not only to encourage participation by the physically challenged, but also to encourage physically challenged teachers to teach in the magnet program.

The magnet programs are also designed for the inclusion of special education students. Each magnet school site provides special education services. Special education students participating in the magnet programs will be mainstreamed into magnet classes to the extent possible for the special thematic classes and for as many core subject classes. Special education teachers will meet regularly with magnet teachers as part of cluster teams to discuss individual progress. Special education teachers will participate in all magnet training provided to magnet school teachers. All special needs students participating in magnet activities will receive special services (resource and support). The special education staff in each school will adapt their curriculum to reflect the magnet themes and students will participate in the magnet programs in accordance with their Individual Educational Plans (IEP).

Those students (members of racial or ethnic minorities, females, English language learners (ELL), and students with disabilities) will be regularly and actively recruited to participate in the magnet programs. The magnet programs are designed to encourage disabled student participation. The Director of Special Education has worked with curriculum specialists to create a special education services attending Magnet Schools that will maximize mainstreaming possibilities for disabled students, including them as much as possible.

In addition, the four magnet schools meet the requirements for the physically disabled. Exceptional students will be mainstreamed into as many magnet classes and core subject classes as possible. Special needs teachers will meet regularly with magnet teachers to discuss each special education student's progress (IEP); and special needs teachers in the Magnet Schools will participate in the same training with other magnet school teachers during the summer and during the school year.

English Language Learners (ELL)s will receive the supports necessary for equitable and successful inclusion in all the magnet activities with the general student population. English Language Learners (ELLs) students will be involved in all its activities. Language instruction for ELLs will reflect the EBRPSS Board of Education policy stating that high-quality, comprehensive and effective English as a Second Language (ESL) programs are essential to acquire English language proficiency and academic proficiency for students who are English language learners (ELLs).

The magnet project includes research-based instructional practices and intervention programs that support ELLs in general education classrooms, which are essential while they are acquiring English and well after they have exited the intensive programs. The State of Louisiana, districts and schools are mandated by the United States Civil Rights Act of 1964, the Every Student Succeeds Act (ESSA) and the Louisiana Bilingual Statute to ensure that ELLs receive specialized

services to meet their language and academic needs. The Board affirms the importance of all students becoming socially and academically prepared to be successful.

Admission to the four magnet schools for which funding is requested is open to students of all races through a lottery process. Personnel office staff will employ an aggressive and comprehensive recruitment initiative to ensure equal access and treatment for eligible participants who are members of groups traditionally underrepresented.

To better understand the role of equity in this project, improve cross-cultural communication and interracial understanding, every magnet school teacher will receive training from South Central Collaborative for Equity Intercultural Development Research Association (IDRA/SCCE) in San Antonio, TX.

In addition to the various efforts of the District to assure equal access and treatment, focused attention will also be given to retaining those students and staff who are attracted to the Program. Ms. Theresa Porter, an African American female, is the district's Magnet Director. With women represented in such an important position, the Magnet School Programs are provided the racial and equity sensitivity and perspective that a minority female can offer to the executive leadership level within the school system. She also serves as a role model for students.

Over the past few years, faculty from Southern University and A&M College, which is a historically black university (HBCU) in Baton Rouge has played a part in acting as a resource for the development of programs that address racial diversity, linguistic, cultural, ethnic and gender equity issues. The university has faculty with expertise in addressing racial and under representation issues. During the planning period school officials have used this resource as an integral part of the ongoing operations of the magnet school program. It is very interested in becoming involved and will be included to help start the sophisticated program.

An area considered for the Agreement included a new provision in the Department of Education's General Education Provisions Act (GEPA) that applies to applicants for new grant awards under Department programs. This provision is Section 427 of GEPA, enacted as part of the Improving America's Schools Act of 1994 (Public Law (P.L.) 103-382). It requires that all applicants for new awards must include information in their applications to address this new provision to receive funding under this program.

Section 427 requires each applicant for funds to include in its application a description of the steps taken to ensure equitable access to, and participation in, the MSAP program for students, teachers, and other program beneficiaries with special needs. Thus, during the agreement development, the EBRPSS modified district policies that highlight six types of barriers that could impede equitable access or participation: gender, race, national origin, color, disability, or age.

School officials are putting in place resources that address barriers that may prevent students, teachers, or other staff from such access or participation in, the MSAP project or activity.

Consistent with program requirements and its approved application, EBRPS officials will carry out project activities that include the resources necessary to eliminate identified barriers. For example, during the magnet program recruitment periods, magnet program applications, brochures, billboards, television and newspaper advertisements will also be done in Spanish. Spanish literature is necessary because of the influx of urban students from New Orleans, which has contributed to the increase in the Latino population to 5.2 percent since 2010. Among this population are more people who identified as Hispanic than 10 years previously. All instructional materials purchased for classroom use will be made available on digitally or in braille for students who are visually impaired.

Program components will be designed to encourage female participation in special programs. In-school and out-of-school magnet activities designed to increase young females' interest in science and math fields will be emphasized. But without them, there are potential long-term consequences, even for females who select a science or math path in college. Magnet teachers and staff will work with local national clubs such as STEM on the Run to start and to give added attention to introducing females to the sciences and arts program components. Each of the project schools includes intervention components such as Saxon Math to strengthen core subject instruction. Together program components will offer special activities that focus on motivating young females to explore typically male-dominated fields. At the secondary level, local corporations such as Exxon and Mobile and organizations that offer summer internships provide a chance for girls and women to learn more about different possibilities in the science and mathematics fields. Quality and equity are evaluated for each school in four areas: reading comprehension, language, mathematics, and the complete composite, which is evaluated independently. If the school meets both the quality and the equity criteria in an area, it is classified as either "Effective" or "Highly Effective" in that area. These criteria are rigorous and difficult to achieve and, in most case, a school meets the criteria in one or two areas only. Quality in achievement scores is the first criterion to be evaluated.

A school must have most of its students' score at or above the national average (50th percentile) to be eligible for the classification as effective. If a school has 85% or more of the students tested scoring above the national average, then the school is eligible to be classified as highly effective. Five comparisons are made in the equity assessment of achievement scores: male/female, African American/white, African American/other, white/other and low socioeconomic status/middle socioeconomic status. The gap in achievement scores between genders must be five or less and

the achievement gaps in the other four comparison groups must be ten or less to meet the equity criteria. Once it is established that the criteria are met, the school is classified as either effective or highly effective depending on the level of assessed quality.

Schools can also be classified as improving if the number of students scoring above the national average increase by one percentage point compared to the previous year's results. In addition, the achievement gap must decrease in at least one comparison group and not increase in the remaining groups when compared to the previous groups. Over the past several years, the district has continued to lessen the gap in achievement between and among groups.

In 2006-2007, this report revealed that a large gap in reading achievement existed between African American and white students in grades 2-5, with African American students scoring significantly lower. Nominal differences were found between males and females. When differences did emerge, generally females scored significantly higher in language than their male counterparts. Once these significant differences are identified, educational strategies are developed and revisited to ensure equity and quality in education for all students.

A review of the overall 2015-2016 enrollment at the secondary level in Honors, Advanced Placement, and the International Baccalaureate programs in mathematics and science for gender equity indicates that males and females are evenly distributed throughout these classes with most of them having a slightly larger female enrollment. In reviewing these data female students represent approximately 55% of the advanced math, science, and technology classes and approximately 52% of honors and advanced placement classes.

As recruitment at each site proceeds, the district will continue to ensure that female students are equally represented in math, science, and high technology classes. Gender equity will be carefully monitored in these programs. Recruitment materials and brochures will be developed which

highlight females in non-traditional roles to continue encouraging females to enroll in these classes. In addition, career opportunities in some of the non-traditional areas will be shared with female students during the recruitment process, tours, and site visits.

Once students are enrolled in magnet schools, the Magnet School Program Office will maintain records and files on ethnicity, race, age, gender, and native language. The district maintains most of these databases routinely. However, establishing new data bases for the within school magnets will be coordinated with the Program Evaluator and the Management Information Systems Office.

Project EXPLORE staff will work with the district's Human Resources Office to ensure that policies designed to encourage minorities and women to apply for traditionally underrepresented positions are followed. Equal opportunities in employment are encouraged for women, the handicapped and elderly, as well as all social, economic, and racial and ethnic groups. Through aggressive recruitment and campaigning, members of these groups are provided equal access throughout the system.

The district is working to mainstream students with disabilities and to provide the least restrictive environment for these students. In some classes, a special education teacher is paired with a regular teacher in the classroom, which allows special needs students to have their educational needs met in the context of the regular classroom. Students with disabilities are encouraged to apply for magnet programs. Special counseling services and assistance is provided to interested students and parents, heightening awareness of program offerings to the special education staff.

Faculty and Administration - Within the magnet programs, the Board will make special provisions to recruit females, especially minority females, into specialty teacher and regular teacher positions for mathematics, sciences, and computer programs. Many schools designated as mag-

net schools will have minority women in leadership roles. With females represented in both areas, the program will not only serve to provide access into these areas, but also will allow women to serve as role models for the magnet school students.

The elderly will also be an important part of the magnet programs. Senior citizens will be involved with the schools by providing tutoring to students that need help. In addition, many retired persons will be hired to provide expertise in special thematic areas. There are many retired architects, graphic computer technicians, business and financial professionals in arts related fields and educators who live in the community and have agreed to participate in the magnet programs. Also, many retired artists, musicians, and teachers in related fields have volunteered to work with at-risk students and those students identified as having special needs.

As part of the magnet school curriculum, senior citizens who represent a variety of different racial, ethnic, social, and economic backgrounds will share knowledge of their cultures and history. Many will tell stories of their past, discuss events they witnessed, and provide information about cultural differences. Through their participation, students and teachers will have a better understanding of the diverse groups that make up the community.

Standards set for student selection are to be found in the target enrollment of all the District's Magnet Schools. The Magnet Office is a special unit represented in the Superintendent's cabinet that gives oversight to the student application and selection process. Admission to the four magnet schools for which funding is requested is open to students of all races through a lottery process. Magnet office staff will employ an aggressive and comprehensive recruitment initiative to ensure equal access and treatment for eligible participants who are members of groups traditionally underrepresented.

(a)(4) Desegregation strategies for the reduction or prevention of minority group isolation

On August 2, 1996, the district court approved a Consent Decree after both the Board and the plaintiffs agreed to the provisions of the new plan. Although relatively brief, the new plan contained eight major provisions, including provisions addressing community sensitive attendance zones, faculty enhancement of "racially identifiable" black schools, and facility enhancements at "racially identifiable" schools. Since its implementation in 1996, numerous disputes have arisen regarding the interpretation and modification of the 1996 Consent Decree. Although the case has seen much activity, no explicit attention had been given to the termination of the desegregation case: Instead, the parties continued to focus on procedural and remedial issues.

On August 12, 2003, Judge Brady signed the Final Settlement Agreement (FSA) to Davis, et al. v. East Baton Rouge Parish School Board et al., marking the end of the district's school desegregation case, the longest in U.S. history. While the lawsuit has been settled for some time and court-sanctioned bussing has ended, the impact remains. The ruling prompted flurries of private schools to pop up and resulted in larger margins of poorer, mostly black children attending public schools. It marked "white-flight" to Ascension and Livingston parishes as well as the creation of "breakaway" independent school systems in the cities of Baker, Central and Zachary. After that, a group of concerned parents and advocates for improved public education in an upper income-class suburb of EBRPSS, began lobbying for the creation of an independent school district to break away from the city's public system. But when the advocates took their case to the Louisiana legislature, they were turned down. And after two years of effort to bring the new school system to life, there is an attempt to revitalize the breakaway district. **The effort should die with successful new magnet schools.**

Now, EBRPSS has a history of successful magnet schools that have turned some of the lowest performing schools in the district around. In a school system that is 79% African American, there are currently nine magnet schools that have racial compositions consistent with the district wide average, of which eight are between 50% and 70% African American. As discussed in other sections of this proposal, their success is having a profound effect on the groups who have previously wanted to escape the school system. Yet, their success is inhibited. There are waiting lists for most of the magnet programs. That is because the school system does not currently have the resources to pay the high startup costs needed to start up new magnet programs. History shows that the majority of the costs are in the initial two-year phase, with specialized equipment, minor renovations designed to “scream the theme,” specialized thematic training of school staff and the initial promotional program that shows the community that the designated schools are being turned around using the unique magnet theme. EBRPSS has had the longest running desegregation case in the nation. Now it plans to have the longest running success story about how magnet schools have racially and economically diversified student populations with student graduates who are among the best educated in Louisiana.

B) QUALITY OF THE PROJECT DESIGN

Implementation of the four newly created high quality, highly attractive magnet schools is not only necessary to bring about more racial and economic diversity within project schools, but also to prevent a small part of the districts populate from removing higher income, mostly white students from a school system. EBRPSS that is slowly making significant progress – partly using magnet schools - to improve the quality of school services for all students served by the school system. EBRPSS needs MSAP assistance over the next five-years to assist the district in the creation of new magnet schools using its knowledge and former success with the previous estab-

lishment of magnet schools - many recognized for the quality of instruction, and most highly sought by families of school age children. The need for new magnet programs that will meet the demand will be achieved through the design and development of programs at the four magnet sites, which will have an innovative and unique Sciences and Arts theme that includes an interdisciplinary-based and project-based instructional focus, giving each the potential to substantially strengthen students' knowledge of academic subjects and/or career skills.

The proposed four Sciences and Arts magnet themes have been designed with the inclusion of staff, parents, students, and community partners. A school-by-school strategic-based planning



process using state of the art research and visitations by some district personnel to magnet sites in other states is a strategy that contributes to the development of magnets of high quality that are being supported by the staff, parents, and the community.

The proposed project design will bring students of various racial/ethnic backgrounds together as a result of: a district and community-wide demand for higher quality education in schools that are not currently magnet schools; the need for an innovative curriculum driven by the Sciences and Arts industry that is developing in Baton Rouge; the need to strengthen the curriculum related to science, mathematics and technology based on an interdisciplinary based and project based instructional platform using high technology and targeted teacher training to address the instructional requirements for students to be successful in careers related to the Sciences and Arts.

The Logic Model (included in Appendix.) has served as an important tool to help the four school faculties and magnet school officials to develop a theory of action that results in the Science and

Arts magnet themes, with their subcomponent instructional approaches that explains the method for improving teaching and learning while racially and socioeconomically diversifying student populations in affected schools. The Logic Model is the basis for developing the larger context needed for shaping the new magnet programs and to address the topics below. The Logic Model and action plan set the context for developing the thematic programs based on specific objectives designed to meet the MSAP legislative intent.

Project objectives –EBRPSS has an immediate goal, which is to turn around the four project schools by reducing both the racial isolation and the percentage of the student body that represents low-income families. The reason is immediate because of what is described above as the attempt by some within the community to create “breakaway” school districts that further racially and economically isolate those neighborhoods served by the four schools.

The project goals are: 1) to reduce racial isolation in schools impacted by significant population of African American Students, (2) to provide magnet programs that enable all students to achieve high standards while holding each project magnet school accountable for high achievement and (3) expand the magnet school’s capacity to offer choice to students who attend low-performing schools by offering innovative programs that promote school choice.

The goal objectives for this project are based on the acronym SMART (Sustainable, Measurable, Achievable, Relevant and Time-bound). EBRPSS has used the performance measures suggested by the USDE that specify ways to assess performance and provide evidence to demonstrate progress on program objectives and purposes. The MSAP project’s SMART objectives and Performance Measures address the published MSAP purposes, and will guide school and project level data collection, analysis, and reporting.

Program Goal: Create magnet programs that reduce the African American racial isolation.

– **reduce** the **prevent** the percent racial isolation of African American students enrolled in Villa del Rey and Park Forest Elementary Schools, Park Forest Middle and

Performance Indicator – An annual **application pool** with a non-African American count that will reduce African American isolation at each grade level.

1a. Performance Measure - The non-African American student magnet applications in the **ap- plication pool** is large enough to reduce the overall percentage of each project school’s African American student population.

Target Date	SY 17-18		SY 18-19		SY 19-20		SY 20-21		SY 21-22	
Application Pool Target	300		400		450		500		550	
Race	White	Non-white								
Number of Applications	200	100	300	100	350	100	325	125	400	150

Target Outcome	Annual Reduction of African American Isolation						
	School	Current	SY 17-18	SY 18-19	SY 19-20	SY 20-21	SY 21-22
Villa del Rey Elementary		78.37%	76.90%	75.6%	75.1%	74.5%	73.8%
Park Forest Elementary		86.74%	85.74%	84.74%	83.74%	82.74%	81.74%
Forest Park Middle		79.17%	78.17%	77.17%	76.17%	75.17%	74.17%
Belaire High		78.37%	77.37%	76.37%	75.37%	74.37%	73.37%

Performance Indicator - The number of magnet applications from targeted schools in “**break-away**” school systems from students who are higher income families will reduce the overall African American student population at all four Renewable Energy magnet schools.

1b. Performance Measure – Annual recruitment and selection of student applications from the

schools in the “breakaway” school systems with higher income student populations.

<i>Target Non AA Students</i>	Percent of Annual Applications from Non-White School Systems					
School System	Current	SY 17-18	SY 18-19	SY 19-20	SY 20-21	SY 21-22
St. George Area	1%	2%	3%	5%	5%	5%

Performance Indicator - The number of magnet applications from targeted **feeder** schools from students who are not African American will not increase the overall African American student population to a level higher than the district wide average.

1c. Performance Measure – Annual recruitment and selection of student applications from the 15 EBRPSS elementary and secondary schools targeted schools with student populations that are significantly below the district wide average of 79% African American.

Target Outcome African Ameri-			SY 18-19	SY 19-20	SY 20-21	SY 21-22
Glasgow Middle School	68%	69%	70%	71%	72%	73%
Cedarcrest Southmoor Elementary	67%	68%	69%	70%	71%	72%
Lee High School	66%	67%	68%	69%	70%	71%
LaBelle Aire Elementary	66%	67%	68%	69%	70%	71%
Southdowns School	66%	67%	68%	69%	70%	71%
Northeast Elementary	64%	66%	68%	70%	71%	72%
Woodlawn High School	62%	64%	66%	68%	69%	70%
LaSalle Elementary	61%	63%	65%	67%	68%	69%
Woodlawn Middle School	59%	61%	63%	65%	66%	67%
Wildwood Elementary	51%	53%	55%	57%	58%	59%
Parkview Elementary	49%	51%	53%	55%	56%	57%
River Oaks Elementary	48%	50%	52%	54%	55%	56%

Target Outcome African Ameri-	Current	SY 17-18	SY 18-19	SY 19-20	SY 20-21	SY 21-22
Woodlawn Elementary	45%	47%	49%	51%	52%	53%
Shenandoah Elementary	35%	37%	39%	41%	42%	43%

Program Goal: Provide magnet programs that enable all students to achieve high standards while holding each project magnet school accountable for high achievement

Louisiana issues **School Performance Scores** for public schools, which are based on student achievement data. To clearly communicate the quality of school performance to families and the public, Louisiana adopted letter grades (A-F). All schools with sufficient data receive school performance scores.

Elementary schools (K-6): One hundred percent of the school grade is based on student achievement on annual assessments in *English language arts, math, science, and social studies*. Schools may also earn points for significant improvement with students who are academically behind.

Middle schools (7-8): Ninety five percent of the school grade is based on student achievement on annual assessments with the final 5 percent based on credits earned through the end of students' 9th grade year. Schools may also earn points for significant improvement with students who are behind academically.

High schools (9-12): Half of the school grade is based on student achievement (25 percent on the ACT and 25 percent on End-of-Course assessments). Half of the school grade is based on graduation (25 percent on the graduation index, which rewards achievements like Advanced Placement and International Baccalaureate exam credit, and 25 percent on the cohort graduation rate, the percentage of students graduating in four years). Schools may also earn points for significant improvement with students who are behind academically.

2. Objective – By the end of the five-year project, participating magnet schools will score either B or A as determined by the Louisiana State Department of Education Accountability System.

Performance Indicator– Students for grades 3-8 attending project magnet schools will show a composite school score of 85 or higher on the “integrated” Louisiana Educational Assessment Programs (iLEAP) test or on the Louisiana Educational Assessment Program (LEAP) test.

2a. Performance Measure – Each student subgroup in grades 3 and 5 at the Villa del Rey and Park Forest Elementary School must meet or exceed a score of 85-99.9 in English language arts, mathematics, science and social studies to receive a grade of B grade and 100-150 to receive a grade of A.

2b. Performance Measure –Students subgroups in 8th and 9th grades at Belaire High must score 20 or higher on WordKeys, ACT and End of Course Scores using a scale of 0 to 25; or 25 or higher on PLAN for 10th graders based on a scale of 0 to 32; and 20.1 points or higher for 11th graders on ACT based on a scale of 0 to 36.¹¹

<i>Target Outcome School Grade</i>	Current	SY 17-18	SY 18-19	SY 19-20	SY 20-21	SY 21-22
Villa del Rey Elementary	D	C	C	B	A	A
Park Forest Elementary	D	C	B	B	A	A
Park Forest Middle	F	D	C	C	B	B
Belaire High	F	D	C	C	B	B

3. Objective – All project magnet students will be reach grade level minimum.

Louisiana students are assessed annually in grades 3 through 8 and high school grades. Students in grades 3 through 8 take assessments in English Language Arts/literacy, mathematics, science, and social studies. In high school, students take standard assessments referred to as End-of-Course (EOC) tests in six subjects: Algebra I, Geometry, English II, English III, Biology, and

U.S. History. The assessments measure proficiency in each subject area and assist in determining whether students have mastered the knowledge and skills for college and a career readiness.

Performance Indicator - Magnet students score Advanced (demonstrates superior performance in each subject) or Mastery (A student demonstrates competency of challenging subject matter and is well prepared for the next level of schooling) on the Louisiana Assessment tests.

3a. Performance Measure -The number and percentage of participating students at tested grade levels who are on track to meet Louisiana grade standards by the district’s on-track indicator (60% of students in grade 5 in elementary schools, 8th grade in middle and high schools rank basic or higher on core subjects).

<i>Target Outcome</i>	Annual Percentage of Students Meeting Grade Standards					
School	Current	SY 17-18	SY 18-19	SY 19-20	SY 20-21	SY 21-22
Villa del Rey Elementary	20%	22.36%	23.93%	25.60%	27.39%	29.31%
Park Forest Elementary	15%	16.77%	17.94%	19.20%	20.54%	21.98%
Park Forest Middle	9%	10.08%	11.29%	12.64%	14.16%	15.86%
Belaire High	5%	5.60%	6.27%	7.02%	7.87%	8.81%

Program Goal: Expand the magnet school’s capacity to offer choice to students who attend low-performing schools by offering innovative programs that promote school choice

4. Objective – Project themes at the four magnet schools have the capacity to attract students from throughout the Baton Rouge geographic area.

Performance Indicator – Creative Arts themes emphasizing STEM have strong support by parents and students throughout East Baton Rouge community.

4a. Performance Measure – Magnet instruction includes research based Interdisciplinary approach using project based instruction based on high expectations, high standards, and proven

systemic reforms demanded by parents.

Target Outcome	Hrs. Weekly		Hrs. Weekly		Hrs. Weekly		Hrs. Weekly		Hrs. Weekly	
	SY 17-18		SY 18-19		SY 19-20		SY 20-21		SY 21-22	
<i>All Four Schools</i>	<i>30 hours of instruction per week required</i>									
Interdisciplinary - Project-based learning	20		25		30		30		30	
Personalized Learning Environment (PLE)	9		9		9		9		9	
Academic Engagement	20		30		30		30		30	
Increased Time	2.5		2.5		2.5		2.5		2.5	
e-portfolios	2		2		2		2		2	
<i>Belaire High School</i>	<i>30 hours of instruction per week required</i>									
Dual Credit	6		12		12		12		12	
College and Technical Studies Orientation	6 hrs. per semester each year									
Alumni Tracking	3		3		3		3		3	

4b. Performance Measure – Student access to and the ability to use the most sophisticated technology available for understanding the applied use of science and mathematics in the fields of engineering and animation.

Target Outcome	Hrs. Weekly														
	SY 17-18			SY 18-19			SY 19-20			SY 20-21			SY 21-22		
<i>Level</i>	E	M	H												
Blended Learning including Coding and Animation	3	3	4	3	4	5	4	5	6	3	4	5	4	5	6
Technology Lab	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Virtual Instruction	2	3	4	4	4	5	4	4	5	4	4	5	4	4	5

Target Outcome	Hrs. Weekly														
	SY 17-18			SY 18-19			SY 19-20			SY 20-21			SY 21-22		
Robotics Center	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3
Engineering/Math Lab	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4
SmartLabs	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
ELP	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CBL	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

5. Objective – Teachers are prepared to teach heterogeneous grouped, multi-age students attracted from both high and low performing schools.

Performance Indicator – All project magnet teachers are professionally trained to address various learning styles and academic disparities among students.

5a. Performance Measure –Teacher receive 30 hours annually of instructional professional development each summer during the project that is designed to strengthen their ability to teach students from different social, economic and cultural backgrounds.

Staff Development	Training Hrs.														
	SY 1217-2018			SY 1218-2019			SY 2019-2020			SY 1220-2021			SY 1221-2022		
Interdisciplinary – Project based learning (IPBI)	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Thematic /Core Integration	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2
High Expectations	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Blended learning methods	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6
Expanded Day Instruction	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Eportfolios Instruction	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0
Technology –Inst. Resource	3	5	5	6	6	6	6	6	6	6	6	6	6	6	6
Total Hours Annually	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

Each of the objectives included in this application proposal can be reached within the project period. They have been developed and outlined with the full intent of meeting the indicated dates. The project will begin in October 2017 or within a month after the grant funds are received. This is necessary because the community is anxious to begin the program. With appropriate funds, the district can eliminate or substantially reduce racial isolation in most of the district's schools. All students will use technology extensively as part of their learning approach during the five-year life of the project. A fully trained technology teacher will work with groups of students beginning with the first day of the program. All students will be exposed to interactive teaching. At the secondary level, students will participate in career related projects beginning the first day of school. The timeline below lists the projected timelines for achieving the outcomes included in this application proposal and the basis used to measure their attainment during the project period. This timeline will be used to measure success when reporting progress each year.

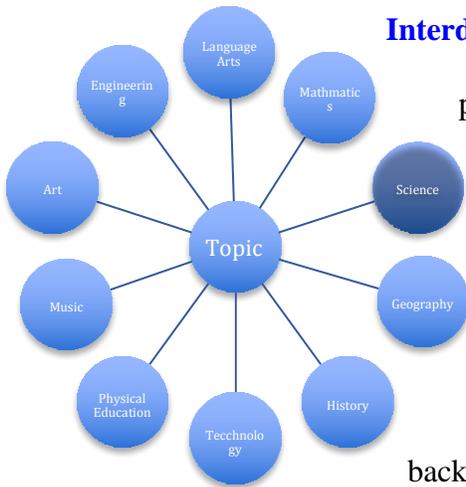
(b)(1) Manner in which the magnet school program will improve academic achievement –

The magnet school program forms the centerpiece of the District's strategy to diversify EBRPSS schools, while simultaneously providing high quality educational programs, which significantly enhance student academic achievement so that they are college and/or career ready.

School Wide Use of Best Practices -The magnet program is guided by the vision and knowledge built from a set of best practices shown in high performing schools throughout the nation. Properly implemented, students are prepared to successfully succeed in school, college, technical schools leading to technical careers and professions. Using a consistent, logical approach for the development and implementation of thematic instruction, the funded magnet schools will enable each of the four schools to become a high performing model based on a strong school culture, using a high-quality curriculum, with highly qualified teachers. The core

principles and educational model is the basis for instruction with the themes providing the direction.

As stated in Priority 2, the approach to teaching Sciences and Arts education theme will be based on both an **Interdisciplinary model**¹² recommended by the Hanover Institute¹³ using **Project Based Learning (PBL)** as researched and proven by Thornberg and separately done by Melek Demirel and Yelkin Diker Coskun.¹⁴ The resulting **Interdisciplinary instruction using project based learning (IPBI)** approach is designed to use Sciences and Arts as an thematically attractive way to seamlessly integrate the four topics of science, technology, engineering and mathematics, rather than treating each subject independently.



Interdisciplinary Learning and a Real-World Application – As

part of the thematic programs offered at all four project magnet schools, teachers will use the interdisciplinary learning method to instruction, which is not offered at any other school in the district. This method of instruction has proven to increase achievement for students representing diverse backgrounds. This instructional platform involves a set of methods

used to teach a unit across different curricular disciplines. For example, the seventh-grade Language arts, science and social studies teachers will work together to form an interdisciplinary unit on rivers.

This approach to instruction has been shown by research to improve students' understanding of science, mathematics and the use of technology as well as their use than traditional methods. The interdisciplinary project-based approach (IPBI) involves the blending of science, English language arts, social studies, fine arts, engineering, and math, and is designed to use projects to give

learning meaning. Their projects more closely resemble the tasks and ambiguities inherent in real life and help to make schoolwork more relevant to students' lives, as well as more transparently linked to the skills needed to succeed in the working world. For example, in the "Bridges" capstone¹⁵, students learn about the mathematical and engineering concepts necessary to construct bridges, as well as the symbolic meaning of bridges in literature, history, and social studies.

Evidence that Interdisciplinary learning works—There is significant evidence in research that interdisciplinary teaching increases students' motivation for learning as well as their level of active engagement. Literature suggests that participation in an interdisciplinary curriculum is associated with positive changes in achievement, behavior and attitude. Participation in an interdisciplinary program afforded students labeled as low achievers, economically disadvantaged, or at-risk demonstrated improvements in grade point averages associated with participation in an interdisciplinary programs.¹⁶ Students participating in the integration of reading, writing, science, social studies, and math demonstrated improvement in reading comprehension, writing, and vocabulary through increased scores on the California Test of Basic Skills (CTBS), Language Assessment Scales (LAS), and Spanish Assessment of Basic English (SABE).¹⁷

The Interdisciplinary Approach - There will be two levels of interdisciplinary instructional integration that the project magnet schools will go through: The first is integration of the language arts (listening, speaking, reading, writing, and thinking).¹⁸ The organizational structure of interdisciplinary/cross-curricular teaching method is called a topic, topical unit, or unit, which is a framework with goals/outcomes that specify what students are expected to learn resulting from experiences and the lessons learned.

The second involves a much broader kind of integration, one in which a unit begins to encompass all curricular areas. Interdisciplinary/cross-curricular teaching has proven as a way to ad-

dress some of the recurring problems in education, such as fragmentation and isolated skill instruction. It is a way to support goals such as transfer of learning, teaching students to think and reason, and providing a curriculum more relevant to students.¹⁹

Because no two teachers are alike, their style of teaching will be unique. An effective teaching style engages students in the learning process and helps them develop critical thinking skills.

Traditional teaching styles have evolved with the advent of interdisciplinary instruction, prompting teachers (working as a unit) to adjust their styles toward students' learning needs. The following are proven teaching approaches styles involve strategies teachers will use in the classroom, capture the benefits and help prevent potential pitfalls of each respective teaching method.

Interdisciplinary Instruction using a Project Based Approach – Using project-based learning, the magnet teachers will serve facilitators, working with students to structure meaningful questions, structuring meaningful tasks, coaching both knowledge development and social skills, and carefully assessing what students have learned from the experience. The value of the approach, involving interdisciplinary thematic instruction, allows teachers to teach concepts across curriculum content areas, whereby students gain knowledge of mathematics, science, technology, writing as they work together on projects. The interdisciplinary project based approach helps prepare students for the thinking and collaboration skills required in the workplace. Sciences and Arts topics create real-world problems while capturing students' interest and provoke serious thinking as the students acquire and apply new knowledge in a problem-solving context.

Interdisciplinary Project-based learning creates opportunities for groups of students to investigate meaningful questions that require them to gather information and think critically. Thematic interdisciplinary-based projects present a problem to solve (How can we create energy using the food students throw away at lunchtime in the cafeteria?); a phenomenon to investigate (How

does garbage become energy?); a model to design (Construct a biomass dome out of plastic garbage bags); and a decision to make (Can we produce the gas needed to demonstrate its use as a source of Sciences and Arts without it exploding and hurting someone?). In a study done by Boaler (2002)²⁰ over a five-year period, students in the project-based-learning school significantly outperformed the traditional-school students in mathematics skills as well as conceptual and applied knowledge. In fact, in the project-based-learning school, three times as many students passed the national exam.

Research shows that teaching in theme focused schools using both an Interdisciplinary model recommended by the Hanover Institute and combined with Project Based Learning (PBL) as researched by Thornberg, Melek Demirel and Yelkin Diker Coskun “affected the students’ logical thinking skills in a positive way. The logical thinking pre-test and post-test results showed that interdisciplinary teaching approach which was supported by project based learning stimulated the process of students’ processing the knowledge and thus they could use such properties as making logical inferences, understanding hypotheses, interpreting and analyzing the data which enabled scientific thinking”.²¹ Hanover Research also showed that schools that are inclusive (schools that aim to educate a broader student population and base admissions decisions primarily on demonstrated student interest) are more effective.²² To this end, the EBRPSS magnet schools will use inclusive interdisciplinary instruction with a project-based approach to teach the Sciences and Arts theme as the underlying approach to teaching all subjects. It is a proven approach that will increase the academic rigor while raising student achievement in science, math, technology, engineering, as well as reading and writing. The Sciences and Arts theme will be successful in challenging all students while not leaving the “at risk” student population behind. The Hanover cited model has proven as an effective means to deliver STEM education.

An Interdisciplinary Approach in a Personalized Learning Environment (PLE) - style to teaching requires the use of unique resources, learning approaches, and services. PLE in the newly created magnet schools will involve a differentiated approach to classroom instruction, including setting expectations and timelines, and utilizing various instructional approaches to best meet the needs of each individual student. Students will be taught at an early age to be able to carry out various assignments with the freedom to work at a pace that is conducive to their abilities and skill set. Within this framework, personalizing learning will require specific technologies. Each of the four magnet schools will offer instruction that engages students and generates the ability to be self-directed with a desire to learn.

How Teachers will be Trained - Teachers will be trained to understand that ongoing contact between themselves, their students and parents will serve as an important element for personalizing the learning experience. Training will include how teachers can use technology such as email or Web 2.0 and other technologies to communicate with students and parents. Email and class websites will be used to post syllabi, study guides, daily assignments, and learning tasks that will be available to everyone including other teachers and administrators. Teachers will also learn about a rich variety of thematic materials that are available in an organized online repository. Most will be web-based so that even parents could access whatever has been posted at their convenience. **Boston University** has been delivering outstanding interdisciplinary training for more than 60 years through the Center for Interdisciplinary Teaching & Learning (CITL). CITL offers training that support this approach. EBRPSS has contacted Associate Dean Megan Sullivan related to training. The offer, the most comprehensive training in this area.

The Interdisciplinary Approach resulting in Academic Engagement –will be encouraged as an integral part of the instructional style for teaching topics. It is defined as students’ willingness

(interest) to participate in routine school activities, such as attending classes, submitting required work, and following teachers' directions in class. Thematic activities are being designed so that students will be more directly involved in their daily learning activities with the goal of promoting positive attitudes that include enthusiasm, optimism, curiosity, and interest. This approach is based in the acknowledgement that students are not automatons designed either to buy into the traditions and culture of an institution or to automatically understand the aims and assumptions of disciplinary specialists (Haggis 2012). Technology will be an integral part of this process. The advances in technology are effectively redefining both access to education and the educational process (Campbell et al 2016). The thematic instructional process is being created using a platform that is based on the changes in the way students understand the use of technology. Current generations of students have grown up with technology in such a way that it is an integral part of their lives – and this builds their expectations that it will also be a significant aspect of their learning and education. Thematic teaching and learning strategies will embrace the full potential of technology.

The Interdisciplinary Approach with High Expectations - Students respond to clearly set expectations. Rather than keeping those expectations lower for students with poorer classroom performance, all magnet program teachers will raise them so that everyone in the magnet program fully understands what higher levels of performance means. Even with students entering the classroom at various learning levels, teachers will be trained to determine the level of performance at the beginning of a school year and then progress from there. All magnet students will be provided with ongoing consistent expectations from teachers that are designed to help them reach their full potential.

How teachers will use it in their classroom. Numerous examples illustrate teachers' efforts to integrate a variety of subjects such as the language arts with mathematics, the visual arts with social studies, mathematics with science, or music with physical education. A vivid example of teaching across subject areas appears in Whitin and Wilde's (1992) "Read Any Good Math Lately? The book highlights children's books that focus on selected mathematical concepts in an integrated way. Chard and Flockhart (2002) described a project approach used to study a local park that focused on integrating reading, writing, science, social studies, and math. Heidi Hayes Jacobs, author of *Interdisciplinary Curriculum: Design and Implementation* (1989), states that "there is no longer as much discussion among educators about whether to blend the subject areas, as about when, to what degree, and how best to do it" (Association for Supervision and Curriculum Development, 1994, pp. 1-2). Integration of the curriculum emerged from what educators knew about learning, child development, and the ways in which school prepares a child to be a productive member of the community. Children's interest in their environment is not subject specific; it crosses many disciplines. This idea is reflected in the interdisciplinary integration approach proposed by Drake and Burns (2004). Teachers organize the curriculum around common themes, concepts, and skills across disciplines to facilitate learning. This approach, in contrast to a discipline-based approach to learning, seeks to connect the disciplines through points of attachment. It proposes to unify understanding by organizing skills and knowledge along lines of connection and convergence rather than along lines of divergence and differentiation. Interdisciplinary learning is nourished by the content offered in multiple subject areas. The specific content of each subject is composed of skills and knowledge that constitute what is integrated. Skills are the abilities or techniques a student learns and uses to perform a movement or demonstrate a concept or idea, such as throwing, measuring, or drawing. And knowledge is de-

defined as concepts, principles, theories, beliefs, or topics inherent to each subject area. There is no one model that describes all the ways interdisciplinary learning can be delivered. Eisner (1998) states, "What we ought to be developing in our schools is not simply a narrow array of literacy skills limited to a restrictive range of meaning systems, but a spectrum of literacies that will enable students to participate in, enjoy, and find meaning in the major forms through which meaning has been constituted" (p. 12). The act of linking or finding connections among various knowledge domains provides a deeper conceptual understanding of the features, dimensions, and characteristics common within those domains. Through interdisciplinary education, both teachers and students can experience a wide spectrum of possible relationships between diverse subject areas. As educators, the kinds of experiences we offer students influence the kinds of skills and knowledge they develop. Making those learning experiences relevant, meaningful, and transferable to future learning is the goal of interdisciplinary teaching.

School Recourses to Support Teachers - The school environment is a key factor to the overall success of students. It must also offer the flexibility for teachers to carry out individual styles in the classroom. The school day must also be set up to allow teachers to plan and carry out topical teaching necessary for interdisciplinary instruction to work effectively.

Studies have shown that the condition of the school plant can affect student achievement either positively or negatively. The school facility must be sustained to support the overall health and safety of students, staff, and visitors. Thus, the magnet school buildings and grounds have been designed and maintained to be free of health and safety hazards, and to promote learning. Policies and protocols are in place to ensure food protection, sanitation, safe water supply, healthy air quality, good lighting, safe playgrounds, violence prevention, and emergency response, among other issues that relate to the physical environment of the project magnet schools.

Enhanced Magnet School Environment - The magnet school learning environment refers to the diverse physical locations, contexts, and cultures in which students learn. Research shows that learning environments have both a direct and indirect influence on student learning, including their engagement in what is being taught, their motivation to learn, and their sense of well-being, belonging, and personal safety. Since the project’s magnet students will learn in a wide variety of settings, such as outside-of-school locations and outdoor environments, the magnet program’s learning environment includes the use of the school facility beyond the traditional classroom, which is more limited—rooms with rows of desks and a chalkboard.

The magnet program also refers to the culture of the magnet school or classes—their presiding characteristics, including how individuals interact with one another and the ways in which teachers may organize the educational setting to facilitate learning—e.g., by conducting classes in relevant natural ecosystems, grouping desks in specific ways, decorating the walls with learning materials, or utilizing audio, visual, and digital technologies. And because the qualities and characteristics of each school’s learning environment will be determined by a wide variety of factors, magnet program policies, governance structures, and other features are considered elements of a “learning environment.” The portability of the school schedule means that students can work in and outside the classroom, which is a great feature for hands-on learning and experiments.

Principal Leadership – The magnet principals chosen for the schools included in this proposal will be held responsible for providing a high-quality education for all students in their individual schools. The four principals chosen to lead the four magnet schools were chosen based on the characteristics of outstanding principals, which include: a willingness to take responsibility for their school’s success, their ability to lead teaching and learning, their experience and ability to hire, develop and retain excellent teachers and support personnel, and their interest and willing-

ness to build a strong school community. These four principals believe that the problems of the school are theirs, and they will not stop trying to solve each one. If a student is having trouble learning, these principals know it is their job to figure out why, whether it is a learning disability, trouble with attendance, or individual characteristic. These four principals will be creative in their problem-solving and approach challenges with an entrepreneurial attitude. They will find ways to implement good ideas, rather than accepting the status quo. The four principals won't make excuses for why their schools can't attract a diverse group of students or succeed academically. It will be their top priority to figure out how their schools can excel, and do everything they can to make that happen.

Although they are capable instructional leaders and entrepreneurs in managing resources, each will participate in-depth leadership and coaching training, as well as apprenticeship with other principals with a track record of successful student results who demonstrates the core values and beliefs of the project. Each will work closely with the other Project EXLORE principals and meet at least regularly to discuss thematic issues and project success. Each will form leadership teams that will work together to develop a cohesive thematic structure. The combined teams will identify and collaborate with the partnership universities (BRCC, LSU and SU) to set up training focused on the entrepreneurial and instructional skills needed for successful leadership. All will visit other school systems with magnet programs that are similar themes and participate annually in Magnet Schools of America and other regional conferences.

Highly Qualified Instructors - High quality instructional methods for teaching magnet students will be done by highly certified (highly-qualified) teachers, thematic specialists, counselors, support personnel such as Academic Intervention Service (AIS) and English Language Learning (ELL) specialists and instructional coaches. All will show evidence of training in high quality

and evidence-based pedagogical approaches. Each will be fully knowledgeable and support the use of the differentiated **IPBI** instruction that will be part of a daily, data-rich system. Teachers and professional staff will participate in performance assessment and progress monitoring.

Teachers will also have experience and training in the use technology to facilitate learning, create and implement Individualized Learning Plans as well as the use of ePortfolios designed to engage and empower students in their learning needs,

Increased Time for Learning –EBRPSS traditional schools currently operate a 177-day school year with a seven-hour instructional day. Elementary schools operate from 8:25 am- 3:25 pm. Middle Schools 7:10am- 2: 25pm. High Schools 7:10am- 2:25pm. As part of this project, the instructional day will be extended $\frac{1}{2}$ hour daily for students beginning in grade 2, which will result in an additional 88 hours annually of thematic instruction, which is equivalent to 13 additional days of school yearly or 130 additional days of instruction if students attend the magnet schools for their entire elementary and secondary school experience. Thus, all magnet students will have sufficient time in school to learn successfully with an ongoing opportunity for extended learning time for intervention or enrichment that meets individual student needs. Daily instructional learning time will be structured to focus on in-depth learning.

Secondary schedules will be structured to advantage of the extra half hour by providing longer uninterrupted blocks of time of up to 90 minutes using 4x4 period blocks of time. Increased instructional time for all students, as part of the core program will include time for intervention and/or enrichment to meet individual student learning needs.

Offering Academic Intervention Services (AIS) will be included as part of the instructional process to help students achieve learning standards in English Language Arts, Mathematics and Science in grades 3-12. Students who are at risk for not meeting grade level standards will re-

ceive intervention services. Students in need of extra support will be identified and assessed, to ensure that they receive appropriate support. Assessment tools as well as ongoing informal assessments will help in identifying such students. State and EBRPSS assessments will also be utilized to determine the need for students in the upper grades. Careful record keeping, including anecdotal/conference notes, running records, and work samples will be used as important tools in helping us to determine a plan of action. Educational assistants and the support services personnel who work with at-risk students will also keep a log of his or her daily work with each student. Once identified, selected students will receive AIS services that include: additional instruction that supplements the general curriculum and/or supplemental support services needed to address barriers to improve academic performance. AIS individualized instruction is designed in a variety of ways, depending on the level needed by the individual student. Students with the most intense needs will receive more scheduled services, for a longer duration, and with more individualization. Students with the least intensive needs may receive progress monitoring as a student support. All AIS will be provided by qualified, appropriately certified professional staff. As part of personalized learning, parents and AIS teachers will communicate throughout the year and create a partnership that support learning and provide a successful education.

Offering English Language Learner (ELL) services ensures students with limited English proficiency have access to educational opportunities by providing services that assist them with the attainment of English language proficiency, develop high levels of academic attainment in English, and meet the same challenging academic content and student achievement standards all students are expected to meet. Services to ELL Program students will include instructional services consisting of English as a Second Language (ESL) type instruction and acculturation activities. Services to ELL Program students will implement the intent and requirements of federal and

Louisiana State law. Services will be designed to address Title III, which requires eligible students to attain English proficiency, and meet the same challenging academic standards all students are expected to meet. Services provided through the ELL Program also will meet the requirements of Title VI of the Civil Rights Act of 1964, which require that these students are able to participate in, or benefit from, regular or special education instructional programs.

Teachers will be trained to use a continuum of learning based on predictable and sequential stages of language development, in which the identified student progresses from no knowledge of the new language to a level of competency closely resembling that of a native speaker. Instruction will be based on identification of the distinct stages of the student's language development.

Response to Intervention (RTI) will ensure that all students receive a high-quality education instructional program; the magnet schools will align curricula with Common Core and Louisiana standards, specific benchmarks, and grade level expectations. Federal law, IDEA (2004), directs schools to focus on helping all students learn by addressing academic and/or behavioral concerns earlier. The requirements were not changed as a result of the American Recovery and Reinvestment Act (ARRA). All focus on the importance of high quality, scientifically based instruction interventions. They hold schools accountable for the progress of all students in meeting grade level standards.

Magnet instruction is designed to address a key component of RtI, which is early intervention at the first sign of academic and/or behavioral difficulties with the end result being the improvement in achievement of all students, including any students who may have a specific learning disability (SLD). As part of Tier 1 strategies, teachers will provide the intervention in the classroom. Tier I intervention strategies include four predominant RtI program models: 1) the problem-solving model uses individually designed prevention interventions (Fuchs & Fuchs, 2016)

with students who have academic and/or behavioral challenges and (2) the standard protocol model, which uses specific, predetermined, instructional techniques that have been demonstrated to improve student achievement in research studies.

Tier 2 is designed for students who do not respond to the first level of group-oriented interventions. The length of time in Tier 2 is generally longer than in Tier 1, and the level of intensity of the interventions is greater. They may also be more closely targeted to the areas in which the student is having difficulty. Progress will be closely monitored. Tier 3 is designed for those students who do not respond adequately to the intervention(s) in Tier 2. This third level is typically more individualized. If the student does not respond to instruction in this level, then he or she is likely to be referred for a full and individual evaluation under IDEA.

The time allotted to see if the student responds to interventions in this more intensive level may be longer than in the first level—a marking period, for instance, rather than six weeks—but the overall process is much the same. If the child shows adequate progress, then the intervention has been successful and a “match” has been found to what type of instruction works with that child.

Student Advisory Committees – Magnet school students will have a voice when it comes to decisions made at the administration level. As part of the Project EXPLORE, each magnet school will collect students’ feedback through a Student Advisory Committee. At minimum, students will be provided a quarterly meeting to converse with the Superintendent Drake. The quarterly meetings will be kept to a one-hour limit to minimize instructional interruptions. During each meeting, students will have the opportunity to express their school’s views on magnet thematic and instructional initiatives, and they may also assist with planning activities that enhance the district as a whole.

The committee will consist of one student from grade 5 at Villa del Rey and Park Forest Creative Science and Arts Elementary Magnet School, one student each from grades 6-8 at Park Forest Creative Science and Arts Middle Magnet School, and two freshmen, three sophomores, four juniors and five seniors at Belaire Creative Science and Arts High Magnet School. During scheduled meetings, Mr. Drake will provide students with updates regarding related to district policies and procedures. Students will have the opportunity to discuss issues related to the magnet programs. Members of the committee will act as liaisons and communicate each meeting's outcomes to other youths in their schools. Once annually, student panel members will gather feedback from other students and report to Mr. Drake with collective points of view.

Parents as Partners - Parents should have the opportunity to send their children to outstanding high performing schools. They also have a right and the responsibility to participate actively in insuring the success of the school. Parents of students attending magnet schools in this project will be able to meaningfully engage in their children's education. Parents will be expected to take responsibility and assume accountability for supporting their children's education both at school and at home. They will be expected to know and become involved in helping their child to achieve college-readiness.

Parents will be invited to become involved in a community-wide Magnet Advisory Committee, which will be actively engaged in the startup of the project. As members of the advisory development team, they will be charged with the system that provides for: parent access to the school, school administrators and classroom teachers, participation in the development of their child's school thematic and college readiness benchmarks, participation in the process for monitoring their child's individual learning plan towards college readiness, and for ways to promote the thematic program. Parents will volunteer for school activities and participate as parent mentors.

College and Technical School Planning - will be an integral part of the magnet school program from the elementary school through high school. Reference materials will be available in each of the magnet school's library, where all students, parents and teachers will have a wealth of data about colleges, technical schools, and post-graduate intuitions of higher education. Reference materials will be designed to allow anyone to determine how to apply to specific technical schools, colleges and universities, financial support services offered, federal grants, and how to take advantage of available services. School counselors will be provided the information and data that can help guide students and families through the college and technical school planning process, and make decisions that meet their needs.

Teachers, counselors and administrators at each of the magnet schools will be provided with easy-to-use communications tools designed to survey and track individual student's desire to attend an institution of higher education. Students will be asked to respond to questions about their educational and life-long careers.

Baton Rouge Community College (BRCC)²³ will provide the Belaire High magnet students services that connect college and technical school instructors with students. Their web-based instruction or similar services will allow students and teachers to connect college faculty directly with high school teachers and students. The magnet program will utilize available technology to connect students with available experts as a way for students to receive direct feedback about their college readiness skills in writing, reading, and math and/or to participate in virtual classroom instruction designed to gain additional high school and college credit.

All eleventh and twelfth grade magnet students will be expected to seek participation in the partnership dual credit program.

Alumni Tracking - As part of the annual alumni tracking process, the Project EXPLORE office will track the college admissions results of students at Belaire High School, from the time they apply and are selected, followed by an annual survey designed to measure their retention and graduation rates. For those students who are not accepted to institutions of higher education, magnet staff will survey their career progress. All Belaire High alumni will be contacted annually and the results compared with each graduation class.

As a result, magnet students will, at a minimum, meet Louisiana State University's entrance requirements: a C average on college preparatory courses with a GPA or Ranking in the upper 50% of their high school class or ACT composite of at least 22 and an ACT English and Math score of 15 or higher.

College and Technical Studies Orientation - During their magnet career, magnet students will participate in a college or technical school orientation preparatory summer institute during their high school career. Students in their sophomore year will be encouraged to enroll in courses for dual credit. Students who demonstrate proficiency will be eligible to enroll in dual credit courses as regular students before graduation.

Dual Credit - Belaire High School will partner with **Louisiana State University (LSU)**²⁴ and **Southern University and A&M College**²⁵ will offer dual credit for eligible high school juniors and seniors, to concurrently enroll in a college courses taught by a college/university instructor and/or a certified Belaire High School teacher. Participating Belaire High juniors and seniors will earn up to 24 college credits upon completion of high school. The credits that students earn will be used toward their Belaire High School diploma and will be acceptable toward a college degree and/or certificates. Classes will be designed to: promote rigorous educational pursuits and encourage lifelong learning, enrich the academic course opportunities, provide students with col-

lege credit that is transferable to a four-year college or university, shorten the time normally required to attain a college degree, provide a wider range of course options for students and save students and parents money. Grades earned through dual enrollment will become part of the students' permanent college transcript. As part of the partnership, Belaire High students will have access to each partner university or technical school's academic learning center and Library.

The dual enrollment courses will be offered at the Belaire High School, BRCC, LSU and Southern University's campuses or online, or other approved centers.

Magnet School Classrooms – The magnet classroom will be set up differently than EBRPSS traditional classrooms, with many currently looking very much like they did when the district built its first school in 1819.²⁶ Because of revolutionary changes in the way people are taught, and documentation about the way children learn best, magnet classrooms will look nothing like most traditional classrooms, generally organized by rows and aisles with computers, most often located along a wall, and the electronic whiteboard or Promethean boards used as an overhead projector by the teacher.

Flexibility is a key for creating learning spaces, with the ability to reorganize the layout according to the task, the topic, and the activity. Classrooms that exemplify the multiple styles and work modes of interactive learning: working alone, in pairs, and in groups; employing digital and analog tools; using horizontal and vertical work surfaces; being immersed in and creating content, will be set up at each of the four schools. The magnet classroom will be able to support lectures, group discussions, and team project work. They will not only support new pedagogies, but also make better use of existing infrastructure, furniture, and technology. Within the existing facilities, without redesign and construction, traditional classrooms will be made more flexible by incorporating furniture that supports more active and engaged students.

The magnet classroom will be set up with: projectors and screens that provide everyone an unobstructed view; fixed and portable whiteboards or Promethean boards and display screens that support information immersion and retention; and spaces and furniture that support different learning processes and styles. The emphasis will be on the creation of an environment that offers comfort, support, and inspiration.

Integrated Technology - Although the multimedia magnet theme will concentrate on a variety of technology for teaching purposes, all of the MSAP magnet schools will be including a variety of mobile technology devices in the classroom. Thus, it will also require a change or shift in pedagogy. Instruction will become much more student centered, inquiry based, project based and investigative. As part of IPBI instruction, magnet teachers will be trained in the use of ELP (Extended Learning Projects) or CBL (Challenge Based Learning) as ways to provide students with the ability to use mobile devices for inquiry and investigative research as well as creativity using a variety of media for presentations and multimedia. Students and teachers will full access to technology and will use it effectively in student learning, classroom instruction, data management and communication. Technology is a key to motivating students to be better students, stimulate their curiosity, challenge their intellect while offering them to move at their own pace. Technology will be used in all magnet classrooms for research, instructional interaction, electronic student portfolios, coding, animation, film development, classroom management, and as a tool for electronic assessment that provides immediate access to student progress information for administrators, teachers, students and their parents. Computers will be available for all magnet students at all times during the instructional day. Students must have adequate access to use technology as a resource integrated with their approach to learning. Students will use technology

to access research information on the Internet, to develop standards-based multimedia projects and presentations and to maintain individual portfolios of their work.

Magnet school classroom teachers will be provided a laptop computer and will use consistent data system for managing grades, student performance data, and internal school and network communication with other magnet schools, with partnership universities and technical colleges and with a worldwide network of educators available on line as part of Blended Learning. Each of the four magnet schools will use a data management system to access individual student and classroom data. The four magnet schools will be networked with each other and with the Project EXPLORE office for ongoing efficiency in communication and support to schools.

Use of Assistive Technology within IBPI- will be offered to all STEM magnet students who are struggling in mathematics. Supports will be available to aid in basic calculations through higher-level math skills. Supports will also be available to help students who are having trouble in math due to writing and/or reading difficulties. Included are types of assistive technology supports used are determined by individual student abilities and needs as well as the required mathematical tasks across all instructional environments.

Students will apply skills and concepts learned to real world projects, service learning, and community internships that require problem solving, critical thinking and active engagement in **Building Instructional Capacity** – As part of their Interdisciplinary Project Based Instructional approach (IPBI) to teaching, the magnet school project will include in-service teacher and principal training designed to improve skills in thematic instruction, use of resources, classroom management, facilitation of learning, curriculum integration, cooperative learning, individualized instruction, technology education and student-centered learning, leadership and administration: core capabilities required to effectively operate magnet schools with a focus on improving learn-

ing outcomes. The project will place considerable emphasis, through hands-on training, on the role of school leaders as effective change agents well positioned to improve student learning outcomes, enhance institutional quality and develop instructional capacity within staff. In parallel to school leadership development, the project will build the capacity of teachers to design and deliver classroom-based instruction that integrates new pedagogical methods and student-centered teaching strategies.

Experts in related areas will be used to provide on-the-job training, coaching and peer mentoring as well as oversee newly developed classroom-based thematic instruction. Participants will be introduced to technology-based education and its application and benefits within the classroom environment. A two-semester professional development program, facilitated with in-class practicum for participants followed by a two-week summer colloquium will build magnet instructional capacity. As a result, Project EXPLORE will improve magnet school management practices, access to instructional resources and establish an internal training and teacher evaluation capacity.

Individualized Assessment – All four magnet schools will offer multiple ongoing ways to measure student learning. Teacher groups will work with individual classroom teachers to develop personal learning plans for each student based on test scores, student needs and interests. The plan will address individual progress towards proficiency on core content standards, adaption to inquiry-based instruction, progress in the school’s IPBI and STEM initiatives, interest and success in Creative Sciences and Arts thematic activities, proficiency in English language development and college-readiness. An individualized analysis will be developed for each student based on the student’s work portfolios, as well as, progress in interim and standardized assessments. Student learning plans will include electronic portfolios of selected student work that shows proficiency in applying skills and concepts in real life project-based learning. The interim assess-

ments will compare proficiency in core content standards in reading, math, science, and history/social science as they relate to new Louisiana content standards. All high school magnet students at Belaire High School will take ACT tests as an indicator of college-readiness.

Accountability for Success – Principals will be responsible for the success of the Magnet Schools Assistance Program project. They have worked with their faculties and together understand the importance of the Interdisciplinary and Project Based learning (IPBI) initiative, the value of thematic education, the need to change the way students are taught, the importance of including parents and community in the ongoing development of the school, the responsibility for setting college ready expectations for all students, the work that is involved and the delight they will have when the programs are operating successfully.



Promoting STEAM (Science, Technology, Engineering, Mathematics) through a variety of studies including: Engineering, Animation, Robotics, Coding, Entertainment Technology and Renewable Energy

The four proposed schools: **Villa del Ray** and **Park Forest Elementary Schools, Park Forest Middle** and **Belaire High** were chosen to become new magnet schools to implement the Sciences and Arts theme emphasizing STEAM (Science, Technology, Engineering, Arts, Math) education. Each school will include specific components related to the school’s faculty developed interest.

STEAM Education will be used as the overarching instructional concept for each of the four schools. The reason is that the STEAM concept uses all the thematic components to get students excited about science, technology, the arts and math, which flows into the study of engineering, Animation, Robotics, Coding, Entertainment Technology and Renewable Energy in context with

the use of STEAM concepts as part of all areas of the core curriculum. Each area also promotes the use of scientific inquiry and the use of the engineering design process. In this project, STEAM will be a part of the Creative Sciences and Arts thematic vision, and all teachers will be provided with the systemic and appropriate professional development opportunities preparing them to guide their students toward acquiring STEAM literacy.

By focusing on student engagement, all four school faculties will use the project-based instruction (PBL) model designed to offer a rigorous, well-rounded education and outstanding STEAM instruction. The PBL approach utilizes Thomas's (2000) five criteria to define PBL: (a) "Projects that are central, not peripheral to the curriculum"; (b) "projects that are focused on questions or problems that 'drive' students to encounter (and struggle with) the central concepts and principals of the discipline"; (c) "projects that involve students in a constructive investigation"; (d) "projects that are student-driven to some significant degree"; and (e) "projects that are realistic, not school-like" (pp. 3-4). Collaboration is also included as a sixth criterion of PBL.

A summary of research on PBL by the Center for Excellence in Leadership for Learning at the University of Indianapolis found that PBL: (a) has a positive effect on student content knowledge and the development of skills such as collaboration, critical thinking, and problem solving; (b) benefits students by increasing their motivation and engagement; and (c) is challenging for teachers to implement, leading to the conclusion that teachers need support in order to plan and enact PBL effectively while students need support including help setting up and directing initial inquiry, organizing their time to complete tasks, and integrating technology into projects in meaningful ways (Brush & Saye, 2008²⁷; Krajcik, et al., 1998²⁸).

Each program will incorporate a SmartLab™, which are fully-articulated for K-12. Everything from technology and equipment to classroom design to curriculum and scheduling are carefully

chosen and thoughtfully integrated to provide an age-appropriate learning experience. In an elementary SmartLab™ program, young learners can explore a wide range of applied technologies. They engage in authentic first-hand experiences in STEAM, building interest and inspiring many to pursue these fields in more depth in the years to come.

Walk into a SmartLab™ and you'll see students buzzing with energy and enthusiasm. It's a learning community where the teacher is a facilitator and students take responsibility for their learning. Autonomy is encouraged. Collaboration is the norm. Challenges are celebrated as a path to mastery. It's everything learning should be. Students are assessed using e-portfolios, daily journals, presentations, which includes digital media in the forms of podcasts or videos. SmartLab™ programs engage learners as they apply technology to projects of their own design. As they work on their projects, they build academic connections and develop next generation skills. Whether students are exploring robotics, coding, websites, video broadcasts, circuitry, or structures, they're developing critical-thinking skills. They're solving problems. They're collaborating. They're learning valuable project and time management skills. And they're reflecting, communicating, and presenting not only their projects...but their learning. They're building skills, knowledge and interest critical for college and career success.

Learning Launchers guide, a component SmartLab™ learning provides a wide selection of hands-on, minds-on projects in STEAM and applied technology. Project activities link technology concepts to core academic content in a way that's engaging, relevant and learner-centered.

The Renewable Energy component - The Renewable Energy component developed as a component of STEAM at Park Forest and Villa del Rey Elementary followed through at the Park Forest Middle School and as a component of the Belaire High School magnet program is designed to be both exciting and attractive to the entire parish student population and productive in that its use

as a theme will help students understand its need and value for the future of the planet.²⁹ The teaching of the Renewable Energy theme using the Hanover cited model would offer magnet students an evidence based effective STEAM education. STEAM education program participants will use highly specialized professional applications at very early ages.

The Renewable Energy program provides all elementary and secondary magnet students at Villa Del Ray and Park Forest Elementary, Park Forest Middle and Belaire High School

with an STEAM related education that includes substantive knowledge of a sustainable energy future for Louisiana with heightened awareness of the benefits of renewable energy and energy efficiency. The energy magnet component begins in kindergarten at Park Forest Magnet School and continues through 12th grade at Belaire High School. allows each student to be an “energy entrepreneur.” Students will research, design, construct, test, and analyze and then “sell” their products to parents, and the community at a school-based energy expo.

Wind as a Renewable Energy Thematic Topic - Wind power is now the world's fastest growing energy generation source. New wind farms serving many parts of the United States are located on farms, ranches or land far from settled areas, providing steady lease income to the landowners and most significantly, increasing economic opportunity for depressed regions of the country. Students will use inquiry-based exploratory activities such as determining how wind turbines work, how wind can be harnessed in order to create energy and the science of wind patterns.

Solar as a Thematic Topic - Using the power of the sun for heat and light is one of mankind's oldest technology pursuits. A goal of the elementary and secondary renewable energy magnet programs will be to improve student achievement which will be accomplished using innovative and interactive instructional approaches that focus on passive solar heating and lighting as the

renewable energy areas of study with emphasis on math, science and technology. The program will create a comprehensive curriculum with experiment based lesson plans using expertise and materials from solar energy, and wind energy, biomass energy, hydroelectric energy, and geothermal energy agencies and corporations throughout the world.

The study of energy and its application of scientific ideas to find real solutions to actual problems is the basis of this exciting curriculum, which will have broad appeal and meet the needs and interests of a diverse population of students. The exciting hands-on program will be interesting for students and lessons and activities will become relevant when students realize that the concepts, principles, and skills can be applied to everyday life.

Hydro (Water) as a Renewable Energy Thematic Topic - Humans used the energy in flowing water for thousands of years. The ancient Greeks fashioned water wheels to grind grain, using the pull of gravity on water, effectively harnessed in hydroelectric facilities, has served as a reliable source of power for commercial and industrial activities in modern times. The twentieth century brought great technological innovations to the electric business, and dozens of dams captured the flow of some of America's largest rivers. The U. S. Bureau of Reclamation built facilities across the country, most notably in the western states, and the electricity, water, and recreational opportunities provided by those dams fueled much of the population and economic growth of that region.

Geothermal as Renewable Energy Thematic Topic -Two types of geothermal resources are being tapped commercially: hydrothermal fluid resources and earth energy. Hydrothermal fluid resources (reservoirs of steam or very hot water) are well suited for electricity generation. Earth energy, the heat contained in soil and rocks at shallow depths, is excellent for direct use and geo-

thermal heat pumps. Direct use applications require moderate temperatures; geothermal heat pumps can operate with low temperature resources.

Biomass as a Renewable Energy Thematic Topic - Biomass includes numerous ways of using organic matter to directly generate power to heat, be processed into fuels, or converted to organically derived chemicals and other materials. Since many types of organic matter is constantly renewed, biomass processes offer the benefit of generating oxygen while growing, and their combustion or conversion generates much less carbon and toxins than conventional fossil fuels. Biomass sources include: agricultural food and feed crops, crop waste and residues, wood wastes, dedicated energy crops and trees, aquatic plants, animal wastes, and municipal wastes. Renewable Energy studies became part of the Louisiana Career Planning Guide Network (LAPGN)³⁰ established by Act 3 of the 2012 Louisiana Legislative Session, which is an innovative program designed to evaluate students' knowledge and preparedness for postsecondary education or readiness for the workforce. At its core, LAPGN envisions careers where magnet students receive an education that prepares them to successfully pursue postsecondary education, if that is their chosen path, including career technical schools, community colleges and 4-year universities. To realize this, the state will align public education in Louisiana so that early childhood, PreK-12, and higher education function more harmoniously to deliver a seamless P20 STEAM and ensure that all students have the knowledge and skills they need to continue learning beyond high school.

Programs that are usually reserved for college-level classes such as Biological and Agricultural Engineering, Chemical Engineering, Civil and Environmental Engineering offered to qualify Belaire High School Students for dual credit from the **Louisiana State University (LSU) College of Engineering and Baton Rouge Community College** as part of the STEAM education

initiative. Students will study renewable energy at all grade levels including: Wind Power, Passive Solar Heating and Lighting, Hydroelectric Power, Geothermal Energy and Biomass Technology using innovative research-based approaches and state-of-the-art technologies, defined curricula, while utilizing highly skilled and trained educators to teach these important topics.

- Alternative and Renewable Energy
- Hydrogen Fuel Cells
- Introduction to Alternative Energy and Other Topics
- Solar Energy
- Wind Power

Children’s Engineering will be taught in grades Kindergarten through grade 5 at the Villa del Rey Elementary Magnet School. The Children’s Engineering concept fosters the understanding of the ongoing development of man-made objects and its various uses. It also enables students to explore the effects of engineering solutions on society and helps them develop a sense of appreciation for the tools and techniques engineers use. This strong thematic emphasis will prepare students for the ever-changing, dynamic world in which they live.

Concepts of engineering will be taught at Park Forest Middle in grades 6- 8 and at Belaire High, grades 9-12, using the nationally recognized Project Lead the Way (PLTW) teaching approach, which provides a rigorous, vertical curriculum. **PLTW³¹** is a middle and secondary school level engineering program taught in conjunction with college preparatory courses designed to prepare students for postsecondary engineering studies. PLTW courses utilize project-based and problem-based learning that teaches middle school students how to apply what they are learning to real-life situations. These courses provide opportunities for students to understand: the scientific process, engineering problem-solving, applying technology, understanding how technologic sys-

tems work with other systems, using mathematics knowledge and skills to solve problems, and communicating effectively through reading, writing, listening, and speaking while working effectively with others.

The Gateway to Technology Program (GTT) middle school component is the perfect time for students to explore and learn that there is more than one way to reach a solution. **PLTW Gateway** provides engineering, biomedical, and computer science curriculum for middle school students that challenges, inspires, and offers schools variety and flexibility. Students get rigorous and relevant experiences through activity, project-based, and problem-based learning. They use industry-leading technology to solve problems while gaining skills in communication, collaboration, critical-thinking, and creativity. Students will participate in the **Energy & the Environment** component whereby they are challenged to think big and toward the future as they explore sustainable solutions to our energy needs and investigate the impact of energy on our lives and the world. They will design and model alternative energy sources and evaluate the options for reducing energy consumption.

The PLTW high school engineering component will be used to teach students about applying engineering, science, math, and technology to solve complex, open-ended problems in a real-world context. Students focus on the process of defining and solving a problem, not on getting the "right" answer. They learn how to apply STEAM knowledge, skills, and habits of mind to make the world a better place through innovation and an environmental sustainability course where students will investigate and design solutions in response to real-world challenges related to clean and abundant drinking water, food supply issues, and renewable energy. Applying their knowledge through hands-on activities and simulations, students' research and design potential solutions to these true-to-life challenges. Resources that will be used are:

1. Institute of Electrical and Electronics Engineers (IEEE)
2. The International Society for Optical Engineering, (SPIE)
3. The Material Handling Institute

Engineering requires that students have knowledge across the technological spectrum in areas that deal with application, manufacturing, implementation, engineering operation, and production. They must understand conceptual design and research functions; therefore, students will become involved in this process beginning in Kindergarten.

The Knowledge and Understanding of Engineering- Engineering involves an understanding of mathematics that emphasizes rational thinking and applying scientific principles to find practical solutions to technical problems, as well as courses in science that support the technical courses. Magnet studies will be designed to teach students to communicate intelligently—an important skill for engineering because they must be able to describe and communicate their ideas effectively. Students will also be taught humanities and social sciences to help them understand how their technical work can affect society.

Creative Thinking- Engineering is by its very nature a creative and analytical profession. When practicing engineers develop solutions to open-ended, real-world problems, they must employ conscious and subconscious mental processing, as well as divergent and convergent thinking. Because we are in a time of rapid social and technological changes, the need for engineers to think creatively is greater now than ever before. Only through creativity can we cope with and adapt to these changes.

As part of the Belaire High School engineering component, junior and senior students will spend two weeks in the summer “shadowing” engineers in the New Orleans area who make decisions on complex technological issues and how engineers contribute to policy decisions. Throughout

the two weeks, the students work with their mentors and complete a project that must be documented and submitted prior to their graduation. This activity will be the culmination of the educational process followed by magnet students throughout their twelve-year educational career.

Magnet components that also include Robotics and Coding will be offered at Villa del Rey Creative Science and Arts Magnet Elementary School, Park Forest Creative Science and Arts Middle Magnet School and the Belaire Creative Science and Arts Magnet High School.

Park Forest Elementary students will be offered a multi-faceted curriculum whereby they learn the basics through the study, creation and operation of diverse component activities using the principals of creative Coding, and the applied use of robotic machinery.

As part of the robotics phase, students will work also as teams in the construction of a robots.

Each year, students will create more sophisticated robot requiring more advanced skills until high school when the groups make a R.A.D., which is a high-performance, radio-controlled robot that will be able to move in any direction, do 360-degree spins, and bend at the “waist” and pick items up with its mechanical arms.

Features of the Robotics Component - the aspect of robotics that captures the imagination of many enthusiasts is the possibility of robotic intelligence. In this section books are reviewed that cover artificial intelligence, fuzzy logic, and other techniques that will someday turn the cold circuits of a machine into a thinking, self-aware “being.”

Scientists believe that it will not be long before intelligent robots will be our evolutionary heirs.

"Intelligent machines," which animators will design, engineers will construct, and robotics technicians will teach to do human skills, understand and outperform their human counterparts.

By the time students finish the twelve-year engineering program, they will be able to develop, integrate, and demonstrate innovative robotics and automation. As part of the curriculum, students will progressively learn about the following:

- mediated robot behavior control;
- applications of robotic systems;
- robot programming e.g. on-line and off-line programming, discrete event dynamical systems, fuzzy logic;
- the use of CAD-based robotics e.g. CAD-based vision, reverse engineering;
- robot simulation and visualization tools; and
- the value and use of tele-autonomous systems

Students will become actively involved in activities that range from basic research in robotic stereovision to integration programs that include the use of robotic sensors, actuators, and communication systems. Resources that will be used are:

1. International Service Robot Association
2. Robotic Industries Association (RIA)
3. Utility/Manufacturer Robot Users group (UMRUG)

Features of the Coding Component-is what makes computer programs work – it drives websites, digital applications, and robotic machinery. Coding is one of the fastest growing markets, yet one of the least available courses in primary schools in the United States. For students to be competitive in the global market today, and to be college and career ready, the program at Villa del Rey will provide students with essential computer science knowledge and skill set. Coding teaches students critical thinking skills and problem-solving in real world scenarios.

One resource that will be utilized is *Code.org*, which shares our philosophy to provide access to coding instruction to all students. From the *Code.org* website: “Code.org® is a non-profit dedicated to expanding access to computer science, and increasing participation by women and underrepresented minorities. The school’s vision is that every student in every school should have the opportunity to learn computer science, just like biology, chemistry or algebra. Code.org organizes the annual *Hour of Code* campaign which has engaged 10% of all students in the world, and provides the leading curriculum for K-12 computer science in the largest school districts in the United States. Code.org is supported by generous donors including Microsoft, Facebook, the Infosys Foundation, Google, Omidyar Network, and many more.”

The *Hour of Code* is a way to get the word out about the growing industry and increasing opportunities for students to utilize a variety of coding software programs, but that is just the “tip of the iceberg.” Teachers can take advantage of this organizations ready-made lessons and courses for their students, all for free. Teachers and students alike can take courses and learn to use coding software that have real-world applications. The programs span from gaming creation to Advanced Placement (AP) Computer Science principles courses. There are courses designed for students from K-12 in 45+ languages. This curriculum will easily bridge from elementary, to middle, to high school.

Students in the program at Villa del Rey will use the *Code.org Elementary curriculum* and participate in the *Hour of Code* annually. The school will promote this day within its community for parents and other stakeholders to come to Villa del Rey and participate along with its students. Teachers will use this curriculum from Kindergarten to 5th grade.

In addition, teachers in Kindergarten and 1st grade will utilize the *Osmo* device to reinforce problem solving, collaboration, communication, and critical thinking skills. The *Osmo* device

makes an iPad an interactive learning tool by adding the capability of hands-on activities. Examples of programs include tangrams, coding, and animation.

As students work their way from Kindergarten, they will build on coding skills each year with more advanced courses. When they reach 2nd grade, they will begin applying and extending their coding knowledge by using the *LEGO Education WeDo 2.0 Robotics* curriculum.

The *LEGO Education WeDo 2.0* curriculum is based on Next Generation Science Standards and has different components designed for students in elementary, middle, and high school. They offer hands-on professional development on-site and off campus to allow teachers to become experts using the program, building functioning robotic machinery, and troubleshooting. LEGO has classroom ready materials to develop students' 21st century skills throughout the curriculum. It is a stimulating and cross-curricular program that inspires students to collaborate, be inventive, and communicate more effectively.

Magnet components that also include Animation and Entertainment Technology will be offered at the Park Forest Creative Science and Arts Magnet Elementary School, Park Forest Creative Science and Arts Middle Magnet School and the Belaire Creative Science and Arts Magnet High School. Park Forest Elementary students will be offered a multi-faceted curriculum whereby they learn the basics through the study, creation and operation of diverse component activities using the principles of creative three-dimensional animation art engineering applications as part of STEAM instruction.

A structured, sequential curriculum involves the teaching of English, writing, social studies, mathematics and science in an applied manner where critical thinking is necessary to complete the program of studies. Students must have an in-depth understanding of all core subjects while learning how each applies to the technology world in which they will live.

As part of the animation phase, students will work as groups in “design teams” as they begin to use computers to explore animation and its use in designing objects. They will apply what they learn to the creation of the boats, cars, and can-crushers that they might make as part of the engineering phase. They will be introduced to graphic design and as they progress toward the sixth grade will be given responsibilities paralleling those of design engineers: the use of three-dimensional animation in industry, and the profiling of a robot. The students will demonstrate their designs, communicate their results, and receive recognition for their efforts in a district-wide event.

Features of the Animation Component– Three dimensional, also known as 3D animation is a rapidly growing technology needed in professional fields including architecture, digital design, engineering, criminology, cinematography, horticulture and many others.

In the last decade, considerable efforts have been made toward providing advanced capabilities and techniques for acquisition, processing, visualization and analysis of three-dimensional images to ensure faithful extraction of scientific and clinical information. These efforts have been primarily directed toward the display and visualization of the contained information. There is also a growing need for modeling and analysis of the relevant information coming from images. Advanced capabilities such as structural manipulation of the data, motion simulation and dynamic analysis require different modeling formalisms; therefore, tool design is a technical field requiring a variety of skills and knowledge. Most important, a talented individual in this field needs to develop skills in creativity and imagination.

Animation also includes imagery, modeling human images provides both structural and topological information of different elements. In addition to displaying these elements, a student’s interest is in using them for physically based simulations, motion generation and analysis, and model

validation. The student employs surface based models fitting to the boundary of the image data and develops interactive 3D tools for investigation, analysis and manipulation.

Topological modeling has a wide scope in other engineering and robotics applications involving animation/simulation including:

Storyboards - Over 4,000 storyboard drawings are created as the blueprint for the action and dialog of a feature-length Pixar animated film. They are revised many times during the creative development process.

Modeling - Pixar's proprietary animation software, Marionette, is used to create three-dimensional computer models of characters, props and sets. These computer models describe the shape of the object as well as the motion controls that the animators use to create movement and expressions.

Animation - Animation software allows young animators to choreograph the motion in scenes by defining key frames or poses. The computer then automatically creates the "in-between" frames, which the animator can adjust if necessary. The animators do not need to draw, or paint the scenes, as is required in traditional animation.

Shading - Surface characteristics including textures, finishes and colors, are added to every object in the scene. These programs, called "shaders," simulate a wide variety of appearances, including wood, metal, fabric, and glass.

Lighting - Using "digital lights," every scene is lit in much the same manner as stage lighting. Key, fill and bounce lights and room ambience are all defined and used to enhance the mood and emotion of each scene.

Rendering - The young animators will use software to "draw" the finished image by computing every pixel of the image from the model, animation, shading, and lighting information. Final

rendered images use a motion blur, and each one can take from one to twenty hours of computation time to draw. Once rendered, final images are transferred to film video or digital storage devices.

Students will begin in kindergarten to develop the knowledge to create three-dimensional graphics. Each student will become involved in progressively difficult learning activities designed to help them become more knowledgeable about all aspects of component design and its practical use for developing a three-dimensional model. In addition, these concepts will be integrated into renewable energy projects such as creating a 3D wind mill, or a prototype which conserves energy in homes or offices.

Features of the Entertainment Technology Component - is the discipline of using manufactured or created components to enhance or make possible any sort of entertainment experience. Because entertainment categories are so broad, and because entertainment models the world in many ways, the types of implemented technology are derived from a variety of sources. Students learn about media production and the structures of the music, film, and video game industries. In this way, the entertainment technology field intersects with most other types of technology. Traditionally, entertainment technology incorporates marketing specialists, marketing managers, advertising and promotional specialist and musicians. However, the rise of new types and venues for entertainment, as well as rapidly advancing technological development, has increased the range and scope of its practice.

Entertainment Technology includes: Scenery fabrication, Properties Costume Lighting, Sound, Video, Show control, Automation, Animatronics, interactive environments, and Computer simulation.

Entertainment technology encompasses many different types of performance and display environments than the theatre. To this end, newer opportunities have arisen that provide a wider educational base than these more traditional environments.

There is a definite progression of skills for learning and understanding *Components related to Engineering, Animation, Coding, Robotics and Entertainment Technology* involving three areas - *processes and procedures, knowledge and content, and practical capabilities*. Prior knowledge can be assessed and a program of instruction can be designed to best meet the needs of both elementary and secondary students. Progress in learning in engineering, animation and robotics will be assessed and charted.

Labs which make up the Magnet STEAM Hub, which will consist of modules in: engineering, outdoor physics/earth sciences lab, Animation (digital) technology, entertainment technology. Spaces will be contiguous and connected in a way to ensure instructional time is maximized.

Engineering Lab

- Interactive, materials-rich space with developmentally-appropriate, open-ended investigations for student's research into engineering problems
- Full-time specialist to conduct, facilitate, team teach labs and mentor teachers to facilitate thematic engineering instruction
- Specialized equipment- LINX, LEGO, K'NEX, and other construction tools, materials, and modules
- Access to computer controlled technologies and materials

Animation Technology Lab

- PC and Mac computers, SGI computers, LCD panel, scanners, digital cameras, MIA software, animation software, i.e. Adobe Flash, graphing, databases, spreadsheets, and HTML language workbooks, and videos. Machines will be networked to color printers.
- Touch screen computers will be available for special needs students. A full-time specialist will conduct, team teach labs, and mentor teachers to facilitate the implementation of technology as valuable classroom tool.
- Students will have Internet access, and program accessibility for student/scientist communication, information and research resources, and global projects.

Robotics Technology Lab

- High performance computers will be used to demonstrate obotix-based robots, Lego Technic-based robots, functionoids with Lego Mindstorms, location and motorized systems with servo and stepper motors, BasicX and microcontrollers. Bonanza Minibot; Scooterbot; Roverbot; Six-Legged Walking Robot; Pepbot; Lightbot; Hydrabot; Polar coordinate robotic arm; remote-controlled robots and robots that find their own way; robotic arm and a robotic bug; infrared, ultrasonic, laser, and high-tech sensors.
- Touch screen computers will be available for special needs students. A full-time specialist will conduct, team teach labs, and mentor teachers to facilitate the implementation of technology as valuable classroom tool.
- Students will have Internet access, and program accessibility for student/scientist communication, information and research resources, and global projects.

Media Center

- Take-home computers or a computing device, installed with applicable software for teachers and families will be available

• Internet access, multimedia computers for online research

• Multimedia production capabilities- video & digital cameras, high-definition camera equipment and editing software, such as Adobe Premiere and Moviemaker.

Entertainment Technology and Film-Filmmakers in the Classroom (FITC)

The FITC program is designed to help filmmakers embed into partnering classrooms and tailor a project that supports the learning already taking place in those classrooms. FITC aims to help classroom teachers work collaboratively with filmmaker instructors to promote media literacy and critical thinking and to teach students to create introductory media-based projects that enhance and integrate into the existing classroom study.

With state-of-the-art facilities, an expanding digital ecosystem, a competitive incentive program, and innovative tax credits, Louisiana is an emerging into one of the leading destinations for motion picture production and interactive software development. Partners in music, film and digital media entertainment include:

1. Celtic Studios
2. Hertzock Entertainment
3. Louisiana International Film Festival and Mentorship Program
4. Nerjyzed Entertainment, Incorporated.

Students will create podcasts, short films and documentaries incorporating focusing on renewable energy.

Professional Development - focuses on training all teachers to use the interdisciplinary-based Project Based Instruction (IPBI). Teachers will learn to integrate all subject areas and their applied use by allowing students to participate in projects such as coding for use in entertainment, construction of robots, setting up a windmill or solar panels, or bridge construction. Teachers

will learn to experience and practice classroom routines for engaging students in active inquiry and sense-making through such contexts—routines for mentoring students in productive reasoning processes, for fostering metacognitive awareness of comprehension problems and problem-solving processes, and for promoting collaborative discussions of science texts. Most importantly, they will learn to build new expectations of what students can accomplish with science materials. By implementing STEAM integrated training, teachers transform their classrooms into engaging, intellectual learning spaces where reading and science literacy instruction are integrated into science learning, rather than being added on as separate curriculum. Details of the professional development component are discussed fully under **Section (b)(3)**. The project’s professional development will train all professional educators working with the project an understanding of the school-wide implementation of best practices and instructional strategies, and its relation to IPBI in a personalized learning environment, utilizing individually guided instruction and how it involves academic engagement, setting high expectations for *all* students, using the specialized materials and resources shown to meet *What Works Clearinghouse* (WWC) standards. Teachers will also be trained to assess and carry out academic intervention services (AIS) as part of their teaching practices and know when and how to offer intervention services through response to intervention (RTI) will ensure that all students receive a high-quality education instructional program. All teachers will receive ongoing training in Louisiana standards, specific benchmarks, and grade level expectations within an enhanced learning environment. All instructional staff will have access to increased time for instruction and how to use it effectively, through an after-school program.

The magnet principals chosen for the schools included in this proposal will be actively involved in training while carrying out their responsibilities as instructional leaders. They will be trained

to model the use of interdisciplinary, project-based instruction through a strong STEAM based, Renewable Energy activities that prepares students to meet college and career goals. They will receive ongoing training in newly adopted Louisiana content standards, specific benchmarks, and grade level expectations within an enhanced-learning environment to use Renewable Energy thematic activities to in core subjects. Teachers at Belaire High will be trained to help high school magnet students to gain dual credit with local universities so that select students can gain rigorous studies that provide college credits upon completion of high school. The faculty will be trained and provided the opportunity to set schedules that provides longer uninterrupted blocks of time for up to 90 minutes using 4x4 period blocks of time. School counselors will receive training on the value and process for carrying out annual College and Technical School Alumni tracking.

An important part of the program is the involvement of a volunteer from the engineering, digital arts (coding and entertainment technology) and mechanical technology professions. Professionals in specialized areas and the teacher will work together to determine what level of involvement will be necessary to make each phase of the program successful. Some elementary teachers are less comfortable with the teaching of math and science. In this case, a professional might implement the lesson plans or facilitate the mechanics of a project on pre-determined days. For those who are more comfortable and wish to retain the teacher role, the professional can join in when students are in the design and building phases, and simply play the role of a consultant or even a consumer. In either case, the professional will probably want to spend some time talking with students about the work of an animator, design artist, engineer, technology expert and possibly share some examples of his/her own work.

Financial model and sustainability - EBRPSS is a Louisiana public school system, and as a result, must be responsive to many different groups and organizations—including elected officials, other governmental entities, investors, the community, and citizens—that monitor their activities. All forms of monitoring involve collecting and interpreting data, are performed using information offered in governmental reports. Among the most important types of reports is the annual financial report, which presents the financial position, operating results, and cash flows for each fiscal operating year. EBRPSS publishes its annual financial report in accordance with principles established by the Louisiana State Department of Education.

For local school systems in Louisiana to achieve the objective of accountability, they must provide financial reports that reasonably informed users find both relevant and reliable. They must satisfy numerous and diverse needs or objectives by presenting information about short-term financial position and liquidity, budgetary and legal compliance, and issues having a longer-term focus, such as capital budgeting and maintenance. Additionally, information must be presented at different levels of detail to satisfy the needs of various users. The Louisiana Audit Law provide for fiscal accountability for state and local governmental units in Louisiana.

For the school year 2015-2016, EBRPSS committed \$8,588,954 to support 70 supplemental magnet teaching positions, 14 specialists positions, and 21 paraprofessional positions that are in addition to the assigned staff at magnet schools.³² The supplemental cost from General Revenues total \$8,309,504 for services in the schools and an additional \$279,450 for central office administrative support directly related to the support of specialized staff to give leadership to the

unique focus of its magnet schools. EBRPSS has made total expenditures more than five hundred million dollars since 1980 in the operation and capital improvement of magnet schools in district. The positive perception by the community drives the EBRPSS Board of Education and school officials to commit resources annually to the continuation of magnet schools as a meaningful, appropriate and highly successful strategy for the desegregation of its schools, and as a curriculum model for upgrading academic learning and vocational preparation of its students. Commitment on the part of EBRPSS can be seen in its increasingly large investment in magnet schools. Recognizing that these schools form the centerpiece of its desegregation strategy and serve as a primary basis for curriculum reform and school improvement, the District has invested millions of dollars in capital improvements which greatly enhance the attractiveness of facilities housing magnet schools, while improving their safety and creating instructional spaces which support professional development, technological advancement, and specialized teaching and learning. Begun seven years ago, a major Capital Improvement Program for magnet schools will be accomplished as a part of the total Program at a cost of approximately \$140,000,000.

When EBRPSS committed to magnet schools as part of its desegregation Settlement Agreement, it set as its goal "Moving Everyone Forward." EBRPSS's mission and vision drive the focus of the district. The mission of EBRPSS is "in partnership with our community, educates all students to their maximum potential in a caring, rigorous, and safe environment." The vision is "All EBRPSS students will graduate with the knowledge, skills, and values necessary to become active successful members of a dynamic learning community." The district Strategic Plan lists one Bold Goal and six objectives, to which resources and support are aligned. EBRPSS set magnet schools to have a clear and indispensable role to meet identified district needs without compromising the traditional schools within the system. EBRPS's vision and strategic plan is an integral

part of overall educational improvement and effort to keep its schools from becoming part of “breakaway” school districts. It has maintained key magnet positions needed for their ongoing success. Under this proposal, district officials will use MSAP funding to develop new magnet programs and solidify district organizational infrastructure, by using on-site magnet specialist positions and central office resources for carrying out the annual random student selection, facilitating budgetary funds, and marketing that results in racially and economically diversified schools.

In addition to the creation of new magnet schools, the district has a calendar of ongoing construction and facility maintenance projects involving the magnet schools. Since July 1, 2011, the district has opened, renovated, or completed construction projects at 26 school sites. EBRPSS continues to aggressively work to provide parents and children with more choices through new and expanded magnet programs. From 2009 to the present, 10 sites implemented new programs for advanced students. During the 2013-2014 school year, more than 850 new students entered magnet programs, bringing the total number of students enrolled in specialized programs (magnet and gifted) in the district to more than 10,200.

Evidence of Support - Melissa O’Reilly is a lifelong resident of Baton Rouge and a parent with school age children.³³ She loves living in the city. She has been lucky enough for her children to be picked to go to magnet schools. She believes that the neighborhood schools her children would attend are “plagued by a lack of discipline.” She believed EBRPSS former Superintendent Bernard Taylor when he pointed out that: The sheer size of the school district is what allows it to offer magnet and gifted and talented programs, as well as programs for special needs children. Ms. O’Reilly and the Baton Rouge community have believed for several years “If there is a bright spot in the public school system, it is the well-regarded magnet and gifted and talented

programs scattered throughout the district. Parents and students speak highly of arts, science, math, language and engineering programs. Students must test into gifted programs; spots in magnet programs are chosen by a lottery.”

The St. George movement began as an attempt to carve out a pie-shaped slice of the EBRPSS and create a new, smaller district that supporters said would offer more local control and improve the lives of parents, teachers and students. Ms. O’Reilly says she felt torn when she first heard of the proposal. The fact that the Louisiana State Legislature turned down the request underlines state commitment to the use of magnets as the alternative to setting up breakaway school systems in school districts struggling with student populations from low-income families. Recent efforts by the state legislature and governor to increase state aid to all school districts in Louisiana portend well for the future of District finances. Next, as public confidence in District schools continues to grow, the possibility of passing local levies in support of magnet schools becomes more feasible, especially because of the popularity that these schools enjoy. Finally, the high priority given to magnet school support has resulted in a phasing in of magnet school costs into the District’s regular operating budget.

EBRPSS is investing large sums of money over an extended number of years because magnet school yields have justified that expenditure. The yields in attracting and holding students of various multi-cultural, socio-economic, racial, and ethnic strains; in increasing student academic achievement; in garnering professional and community support; in promoting positive school reform leadership; and in regaining public confidence and trust suggest that the future of District education is inextricably tied to magnet schools. These large investments, reflecting the need to address diversity and the effective utilization of technology within the schools, have come at a time when the District's financial position was the most difficult in its 150-year history. As a re-

sult of money that becomes available as capital improvement responsibilities are lessened, as partnership support is enlarged with the corporate/business community, as dollars in the General Fund of the District are re-directed, as a gradual phase-in of magnet school costs is affected, and with local tax levy passage and increased state aid, it is believed that the District's capacity for absorbing magnet school costs will be sufficient to assure continuance of magnet schools when federal support is no longer available. These measures form the genesis of a basic plan for cost assumption. EBRPSS has amply demonstrated both its commitments to the support of magnet schools and its capacity for supporting them.

Continued success of the magnet program is based on the commitment by school officials to increase each of the four participating school's ability to continue the success of the magnet programs after federal funds are no longer available. In order to develop an effective means to adequately prepare teachers to carry on the Project EXPLORE during the five-year grant period and after the grant ends, a special magnet school training component for teachers included in this project is being developed. Training component services will help magnet staff improve and enhance their ability to effectively carry out unique thematic approaches while improving the academic achievement of a diverse student body attracted into the magnet schools.

Capacity building will be carried out through professional training activities by addressing the most recent findings regarding teaching styles, effective teaching practices, student learning practices, innovative learning practices, change process, curriculum reform, thematic integration, team-oriented management, and the means to continue these approaches for years after the grant ends. They are designed for ongoing, in-depth comprehensive training that creates and sustains educational change in the schools. Capacity to address the "at-risk" factors that keep many economically deprived students from reaching their potential will be addressed. The services pro-

vided allow for collaboration among and between staffs at the magnet schools, the district, universities, and the business community. Capacity for long-term success will be built through the teams of teachers, administrators, and representatives from higher education and business who will work as partners and mentors. They will develop the long-term ability to acquire and implement new skills, strategies, knowledge, and technologies; make decisions; solve problems and understand the value of a variety of teaching styles. The significant outcome is that participants will know and implement teaching approaches that allow students that represent the diverse racial, ethnic, social and economic community to work together. Long-term success will be built through a core of each participating school's best magnet teachers, who will annually provide newly hired teachers coming into the magnet schools with the knowledge and skills necessary to carry out the teaching approaches that make the school unique and successful. The training of a core group of teachers guarantees the success of the magnet school long after the grant ends. Long-term commitment is being built through the Board's commitment to retain the magnet specialists who will be hired under the MSAP grant. All will continue as supplemental resources to the magnet schools, using their special knowledge and skills to help teachers deal with the academic disparities among newly recruited students from different racial and economic backgrounds. Specialists will also keep current and provide teachers with ongoing support to deal with the "at-risk" factors that plague too many students who attend the grant funded schools.

(b)(3) Training of sufficient quality, intensity, and duration.

A comprehensive and sustained staff development component for this project is an essential element of the success and sustainability of the magnet program. The goal of professional training carried out under the grant is to prepare teachers to teach Sciences and Arts thematic topics using skills gained in *Interdisciplinary Teaching Approach Supported by Project Based Learning*. All

magnet teachers and instructional personnel in both project schools will participate in carefully designed thematic and STEM training that will help them unlock their teaching expertise and to use appropriate new teaching approaches in the teaching of all subjects using Interdisciplinary Teaching and Project Based Learning. They will receive at least 30 hours of specialized training annually, both in the classroom and as part of their instructional improvement requirements, to gain skills in the unique teaching approach.

Capacity Building - There are three critical professional development components related to training magnet teachers and other professional staff working with the Creative Sciences and Arts magnet program that must be carried out as part of the Project EXPLORE. The first is to train teachers to use interdisciplinary teaching using thematic topics while addressing basic courses of instruction. The second is to use Project Based Instruction as a way to carry out Interdisciplinary Education. When teachers use the interdisciplinary approach, they must find common topics across the curricula. Thomas suggests: “To show connections between the disciplines teachers have to draw borders of a project that is appropriate for the interdisciplinary links in terms of its content, required skills and outcomes. In PBL, the project is the central teaching strategy; students encounter and learn the central concepts of the discipline via the project.” (Thomas, 2000 p. 3)³⁴

In order to develop an effective means to adequately prepare teachers to carry on the Project EXPLORE during the five-year grant period and after the grant ends, a special magnet school training component for teachers included in this project is being developed. Training component services will help magnet staff improve and enhance their ability to effectively carry out unique thematic approaches while improving academic achievement of a diverse student body attracted into the magnet schools during the project cycle. All students, regardless of race or economic

status can reach high levels of achievement and they are entitled to the opportunity to reach their highest potential. Providing high-quality education is far more complex when placing students of diverse backgrounds in the same classroom. Research shows that there is a significant impact of learning style upon acquiring and mastering knowledge. One learns more effectively when information is presented in a manner congruent with a favored method of acquiring and processing information.

The research shows that students are generally active, sensing, visual, sequential learners as opposed to reflective, intuitive, verbal, global learners. Roughly translated, most students receive instruction by the traditional lecture method, while their learning styles are incompatible with that delivery mode. Therefore, there is a disconnect between teaching style and learning style. Learning styles are often used to predict what kind of instructional strategies or methods are the most effective for a given individual and learning task. Teaching styles help define the behaviors that teachers exhibit as they carry out instructional strategies with learners. In applying teaching style categories to their practice, teachers often strive to identify the categories that best characterize them regardless of the methods that they use. Like students and learning styles, teachers may exhibit a teaching style preference while being able to teach in a number of different styles. Training activities for carrying out Interdisciplinary Project Based Instruction (IPBI) will require that teachers address the most recent findings regarding teaching styles, effective teaching practices, student learning practices, innovative learning practices, change process, curriculum reform, thematic integration, team-oriented management, and the means to continue these approaches for years after the grant ends. Training activities for this project are designed for ongoing, in-depth comprehensive training that creates and sustains educational change in the schools.

Need for Training that Extends Beyond the Project Period - Because of the nature of the magnet schools that have been selected for this Project EXPLORE, there is a substantive need to provide participating students with the knowledge, information, and skills needed to compete in a complex society. Good teachers are the hallmark the project's success; they are integral to children's intellectual and social development. Teacher quality is a complex phenomenon, and there has been little consensus in the past on what it is or how to measure it. For example, definitions by school officials and teachers throughout EBRPSS range from those that focus on what should be taught and how knowledge should be imparted to the kinds of knowledge and training teachers should possess. There are, however, two broad elements that characterize teacher quality: (1) teacher preparation and qualifications, and (2) teaching practices. The first refers to pre-service learning (e.g., postsecondary education, certification) and continued learning (e.g., professional development, mentoring). The second refers to the actual behaviors and practices that teachers exhibit in their classrooms. The elements of teacher quality are not independent; excellent teacher preparation and qualifications lead to exemplary teaching behaviors and practices.

School officials have concerns over the quality of instruction that currently is taking place in the project schools and the teaching methods used by current classroom teachers. In EBRPSS, many minority isolated schools have been experiencing problems recruiting and maintaining a staff of qualified teachers prepared to teach low-income minority children who currently made up the entire student population of the school. Because of the selection of these low-performing schools as target magnet schools for this project, it is imperative that each school sets up quality teaching staffs and prepare them to teach a racial and economically diverse student population who will be attracted to the school. In addition, as teachers learn new teaching methodologies based on successful research-based approaches, a core of teachers must be able to provide new teachers

coming to the magnet schools each year, with the knowledge and skills necessary to carry out the teaching approaches that make the school unique and successful. The training of a core group of teachers guarantees the success of the magnet school after the federal grant ends.

Teachers' professional preparation has been identified as fundamental to improving education at the magnet schools. At the core of educational reforms to raise standards, reshape curricula, and restructure the way schools operate is the need to re-conceptualize the practice of teaching.

Teachers must learn new methods, while at the same time they are facing the greater challenges of rapidly increasing technological changes and greater racial and economic diversity.

A recent survey of teachers throughout EBRPSS indicates that less than half report feeling "very well prepared" to meet many of the challenges including: (1) Their preparedness to meet the needs of culturally diverse students or students of limited English proficiency (about 21 percent); (2) Their feelings of preparedness did not differ by teaching experience; (3) Their preparedness to provide adequate instruction to low-income students especially lower-income African-American students (about 15 percent); (4) Only 28 percent of teachers felt very well prepared to use student performance assessment techniques; (5) Only 41 percent reported feeling not very well prepared to implement new teaching methods, (6) approximately 46 percent reported not feeling very well prepared to implement new Louisiana curriculum and performance standards; and (7) The ability to integrate educational technology into classroom instruction (20 percent).

Professional Development and Teacher Collaboration - In order to meet the changing demands of the funded magnet program, the Project EXPLORE's high-quality teachers must be capable and willing to continuously learn and relearn their trade. Professional development and collaboration with other teachers are strategies for building educators' capacity for effective teaching, particularly in a profession where demands are changing and expanding. Traditional

approaches to professional development (e.g., workshops, conferences) are viewed as being relatively ineffective because they typically lack connection to the extreme challenges magnet teachers face in their classrooms, and they are usually short term. Research suggests that unless professional development activities are carefully designed and implemented to provide continuity between what teachers learn and what goes on in their classrooms and schools, these activities are not likely to produce any long-lasting effects on either teacher competence or student outcomes (Fullan with Stiegelbauer, 1999)³⁵. In addition to quality professional development, peer collaboration has also been recognized as important for teachers' continuous learning.

Pre-service Learning and Teaching Assignment - Teachers' pre-service learning and teaching assignment are features of the teacher quality approach that will be carried out as part of this project. Aspects of pre-service learning and teaching assignment (e.g., completion of a teacher education program, course work or earned degree(s) beyond the baccalaureate, and possession of some kind of certification or credential) have traditionally been used to characterize teacher preparation and qualifications. Pre-service learning occurs prior to entering the classroom. There is a concern among district officials that a number of the project teachers will be under-qualified to teach students in the Project EXPLORE because of their pre-service learning, and especially on the institutions of higher education that prepared them to teach. These institutions have been nationally criticized for offering substandard teacher education programs. Many believe that schools of education, especially those in Louisiana and other southern states should be more "intellectually solid" and more connected to elementary and secondary schools (Holmes Group, 1996: 2)³⁶. For example, colleges and universities should require that prospective teachers have academic majors in the fields they will eventually teach (Ravitch, 1998)³⁷.

The Training Necessary for the Continued Success of the Project EXPLORE - A comprehensive and sustained staff development component for this project is an essential element of the success and sustainability of the magnet program. Given the present state of resources and the rapid changes within the educational system and society at large, district officials believe that district-wide organized magnet training can assure quality staff development that addresses changing needs in a timely and cost effective manner. Each year, a core of magnet teachers who have been identified as having the essential skills necessary to teach a thematic curriculum to a vastly diverse student population will become part of the MSAP Magnet Training Team who will prepare new and struggling magnet teachers brought together during the summer to teach in the magnet classes throughout the district. It will be their responsibility to help these teachers develop appropriate teaching styles that they exhibit as they interact with students. As a result, trained teachers will exhibit an effective teaching style preference while using a variety of different styles to help the diverse student population learn better through a thematic approach. Training teams will identify the most effective teaching styles, train teachers to use them, and set up a method for continuing these approaches for years after the grant ends. Each summer, there will be a six weeks' program whereby a group of magnet students will be recruited to attend a special magnet summer classes offered at a magnet facility. Students will receive instruction carried out by teachers being trained by core trainers while under their supervision. Using a training supervisory model, new and struggling magnet teachers will learn new skills during a three-hour session followed by their practicing their new skills under the watchful eyes of their trainers during the three-hour summer session provided to magnet students.

The Operation of the Special Magnet Training Component - EBRPSS representatives from the Central Office, Principals and teachers from the four participating project magnet schools,

faculty from the LSU, SU and BRCC, district teaching and administration staff and the business community have been brought together as the Assessment and Planning Committee (APC) to plan and develop a MSAP magnet training component for the district. The APC has been formed to carry out the initial planning of the training component. To continue the collaborative nature of the training component, this committee will continue indefinitely to discuss and make recommendations about magnet component training operations; representatives from business and education are involved in the planning and delivery of services; and activities will be designed to support collaboration among participants. As a result of the training phase of the MSAP magnet training component, teacher trainers will have an opportunity to match educational needs with a large number of suitable research-based training activities. Within school teacher trainers will be trained so that they will be able to train all magnet teachers to carry out research-based training activities as well as their evaluation in an efficient and effective manner. Training activities will be carried out through on-site training, and when appropriate through teleconferencing available through BRCC's television facilities. Follow-up assistance will be conducted throughout the project's life to determine the extent of information dissemination and training results. They will allow for proper implementation of the program and for interaction among the service providers, community leaders, businesses and BRCC officials.

A special focus will be given to assure administrative commitment and support of teachers involved in the training component. In addition to receiving information from the training component, all schools throughout the school district, participating university faculty and central office administrative staff will receive timely updates of activities and listings of participating staff.

All MSAP project personnel will be given an opportunity to provide input and recommendations regarding the training component's direction and services. Activities will be conducted that in-

volve team participation, including administrative staff. In addition, specific activities will be conducted for Project EXPLORE principals and administrators that focus on appropriate strategies for support of their teaching staff. Furthermore, they will be asked to support teacher efforts by encouraging teachers to participate and allowing them released time to attend training component services, develop and implement new strategies learned and form support systems (incentives). They will also be asked to submit periodic reports on observable change and program impact and to appropriately support specific services financially.

Operations - In cooperation with the LS, SU and BRCC, the Project EXPLORE magnet staff will identify trainers to carry out teacher-training teaching style activities. The training component is an excellent resource to provide opportunities for collaboration between school district central office resource personnel, magnet school principals and teachers, the business community, the university faculty and staff and other interested groups with an active interest in teacher training and development. Key services offered by the collaboration will be in three major areas: (1) identifying student learning styles; (2) the identification of individual teaching styles; and (3) the application of different teaching style categories to numerous student learning styles in the classroom. The magnet principals will be contacted each time requests are received to ensure that information about WWC and USDE programs is available to all magnet personnel.

A computer inventory control system will be established so that up-to-date materials will always be available. Magnet program staff will provide master videotapes for training activities that magnet teachers want reproduced and can be duplicated. A record of each request will be kept with follow-up made by mail, phone, or in person. Information about research-based WWC, USDE and other recognized exemplary educational programs will be available through magnet program newsletters and presentations at local magnet meetings.

Training - The Magnet Director will review surveys collected from project magnet schools. This data will be used in the planning of all training activities. Additional training activities will be coordinated with the planning committee and magnet principals related to areas of academic weakness that must be addressed as part of the project.

Practicing professionals in **Interdisciplinary Teaching** such as **InTeGrate**³⁸ and practicing professionals in **Project Based Instruction**, such as the **Buck Institute**³⁹, will be used to train all professionals working with the project. Training in the materials and individualized teaching resources discussed in length below such as: [AVID](#), [iRAISE](#), [LLI](#), [MindPlay](#), [Virtual Reading Coach](#), [Criterion Writing Assessment](#), [Saxon Math](#), [Investigations in Number, Data and Space®](#), [I CAN Learn® Education System](#), [Accelerated Math™](#), [Appalachia Model Mathematics](#), [eProjectBL](#), [Bridges in Mathematics](#), [Everyday Mathematics](#), [FUNdamentallyMATH®](#), [Knowing Mathematics](#), [Singapore Mathematics](#), [Peer Assisted Learning Strategies \(PALS\)](#), [TAI Math](#), [PowerTeaching](#), [WCognitive Tutor®](#), [I CAN Learn®](#), [Saxon Middle School Math](#), [Conceptual Challenge](#), [Science IDEAS](#), [Collaborative Concept Mapping](#), [Insights](#), [FOSS](#), [STC](#), [SCALE](#), and [Teaching SMART](#), and [BrainPOP](#), and sophisticated component equipment including: [obotix-based robots](#), [Lego Technic-based robots](#), [functionoids with Lego Mindstorms](#), [location and motorized systems with servo and stepper motors](#), [BasicX](#) and [microcontrollers](#). [Bonanza Minibot](#); [Scooterbot](#); [Roverbot](#); [Six-Legged Walking Robot](#); [Pepbot](#); [Lightbot](#); [Hydrabot](#); [Polar coordinate robotic arm](#) will be purchased and used as needed. Teachers will receive individualized or group training when their students can benefit from these supplementary resources purchased under the grant. The magnet school office will negotiate between the training component and training facilitators for training activities about projects of interest. Certified trainers will be used to conduct awareness sessions (as feasible). The Director of Magnet Schools, along with trainers will work

closely with training service providers to match "needs" with solutions to identify appropriate training activities. Whenever possible, negotiations with in-state trainers will be conducted in order to be cost-effective. In addition, categorical aid programs and/or other funding sources will be identified to help educational training service providers meet the costs associated with implementing exemplary programs. To better assist the Magnet Director with adoption agreements, quality implementation, certification of trainers, and identification of demonstration sites, a questionnaire will be filled out by trainers. The Director will negotiate discounts on rates, supplies, etc., with businesses so that training and materials can be purchased at a reduced cost.

Follow-Up - Records will be maintained and data collected through surveys, telephone calls, and/or face-to-face meetings to ensure that magnet training component training is effective. The Director of Magnet Schools, along with university staff and magnet principals will cooperatively carry out this phase. Whenever possible, MSAP project core teachers and principals will travel to other magnet sites to identify services that will work in the project magnet schools. The office of the Director of Magnet Schools will arrange for the purchase of air travel, ground transportation, lodging, facilities, and appropriate curriculum materials.

Finally, recertification or college credit from the LSU, SU and BRCC will be available for project participants. Magnet Director, Theresa Porter, and university project faculty will work cooperatively and collaboratively with training service providers through all phases of the project.

Effective Training Evaluation - Evaluation procedures will be based upon a model that accommodates and encourages the determination and collection of appropriate data that pertains to the quality and effectiveness of the training component activities. In meeting the determined needs, the program plan will specify the types of needs to be fulfilled and the extent of fulfillment judged to be adequate for assurances of the Project EXPLORE attainment. The task of

evaluating the magnet training activity, thus, becomes one of determining the quantity (how many) and quality (level of attainment) of achieved program objectives that give relief to the established needs for which the training activities are initiated.

EBRPSS discussed its project objectives in the Quality of Project Design in order to show what the project will accomplish over the five-year grant period. It also included in the Appendix, its Logic Model, which is designed to show the flow of the project. The objectives shown included:

Objective 1 – Reduce and then prevent the percent racial isolation of African American students enrolled in Villa del Rey and Park Forest Elementary Schools, Park Forest Middle and Belaire High School. The annual reduction can be met based on the success of other magnet schools that are currently in operation.

Objective 2 – By the end of the five-year project, participating magnet schools will score either B or A as determined by the Louisiana State Department of Education Accountability System. Since all schools are starting with either a D or F grade as shown above, the five-year timeline is necessary for that to be accomplished. The type of services offered and the training under this grant provides a valuable tool to substantially improve academic achievement.

Objective 3 – All project magnet students will be reach minimum grade level expectations annually. Based on the annual success to attract students from higher income neighborhoods into the project schools, as well as, an intensive instructional program that includes proven interventions, all students should reach state grade level expectations discussed above within the five-year period.

Objective 4 – Project themes at the four magnet schools have the ability to attract students from throughout the Baton Rouge geographic area with the high-quality magnet program developed within this proposal. The attractiveness of the Science and Arts themes, the popular program ac-

tivities offered, the support services, extensive resources, and teacher training discussed in the Program Design section of this application will be attractive enough to bring students back to EBRPSS schools who would choose to attend schools in breakaway districts.

Objective 5 – Teachers are prepared to teach heterogeneous grouped multi-age students attracted from both high and low performing schools. The 30 hours of teacher training developed for the magnet program combined with the resources that will be available for them to carry out their training using up to date instructional materials and technology will serve for the program to meet this lofty objective.

(b)(4) The extent to which the proposed project is supported by strong theory

MSAP lists reduction of racial isolation as a major GPRA (Government Performance and Results Act goals —program-level measures established for reporting to Congress under the GPRA Modernization Act of 2010) as well as proficient or above on state assessments in mathematics and reading/language arts for students from major racial and ethnic group as the primary objectives. To address the major GPRA goals, the Project EXPLORE school teams developed a theory of action guided by the Logic Model suggested by the Kellogg foundation⁴⁰ and a model developed by WestEd with Brown University.⁴¹ It has helped school officials to create a picture as a practical approach to carrying out project Explore uses evidence based interventions for student academic improvement using themes that have proven capable of attracting students from throughout the parish.

The Creative Sciences and Arts theme will use proven innovative practices in action, based on research and theory that contributes to successful outcomes in the areas of academic achievement and reduction of African American racial isolation.

Project EXPLORE teams used the Doing What Works Clearinghouse website to see how other school systems have implemented research-based practices and helps them plan their academic improvement, based on recommended strategies for teaching mathematics and literacy, interdisciplinary and project based instruction, the organization of instruction, appropriate professional development and effective school turnaround. They also researched innovation studies published by the U.S. Department of Education's guides to K–12 learning programs and guides on magnet schools that are meeting the twin goals of achievement and equity. The Project EXPLORE teams developed the Logic Model based on high-quality critical elements including:

1. Stakeholder perspectives considered as a means to develop meaningful and credible activities and outcomes;
2. Base Project EXPLORE activities on proven research, practice, and theory;
3. Evidence that Project EXPLORE activities represent best practices that have worked under similar conditions;
4. Adequate resources and time to implement Project EXPLORE activities that will achieve the desired outcomes;
5. Project EXPLORE outputs that ensure the right amount of treatment (Frequency of activity, Intensity of effort, Targeted student population);
6. Descriptive outputs such as events, products, or services in terms of a appropriate treatment or amount of services;
7. Outcomes that reflect reasonable, progressive steps that participants can made toward longer-term results;
8. Activities, outputs, and short- and long-term outcomes relate to each other logically;

9. Projected outcomes address the awareness, attitudes, perceptions, knowledge, skills, and/or behavior of participants;
10. Project outcomes are within the scope of program control or sphere of reasonable influence;
11. Project EXPLORE outcomes are SMART (Specific, Measurable, Action-oriented, Realistic, and Timed);
12. Project EXPLORE outcomes are written as change statements; and
13. Project EXPLORE is evaluated effectively and properly.

Within the Quality of Project Design section (b)(1) and Priority 2, the approach to teaching the Creative Sciences and Arts theme is being based on both an Interdisciplinary model theory recommended by the Hanover Institute using Project Based Learning (PBL) as researched and proven by Thornburg and separately done by Melek Demirel and Yelkin Diker Coskun. Also, a study done by Raviz (2008) which researched the approach to the use of PBL in progressive reforming high schools, shows that PBL can be a central element of reform, even when there is not an “obvious” connection, e.g., to individualized instruction, teacher culture and professional engagement.

“Reasoning scientifically” or “thinking like a scientist” are two expressions frequently used by educators to describe the interdisciplinary (ITBI) approach to teaching. This instructional approach is reflected in the recommendations of the National Science Education Standards (NRC, 1996) as a way to introduce students to how scientists actually conduct scientific inquiry. The reasoning and thinking aspects of the scientific inquiry process encompass learning outcomes such as understanding what it means to “know” something, understanding where knowledge comes from, being able to evaluate the validity of a knowledge claim, and understanding why

knowledge is never final. Despite the importance of scientific thinking, it continues to be an elusive educational outcome for students, who often do not grasp how scientific theories arise and the way evidence is used to support or call those theories into question. Many students do not understand the inquiry process because of the way it is taught, that is, the scientific method is a recipe for a step-by-step process that scientists follow to make discoveries.

An interdisciplinary approach to the use of curriculum materials will be used to create connections between the subject used in applications in the real world and Louisiana curriculum standards for which teachers and administrators are held accountable. As an example, science can be viewed as proposing explanations for questions about the natural world, whereas engineering proposes solutions for problems of human adaptation to the real world. Instruction will be used to emphasize the interdependence of the two subjects as well as clarify their differences. The integration of engineering principles into STEAM instruction, presented through problem-solving interdisciplinary/discovery pedagogy, can stimulate students as well as enable them to recognize links between their lessons and tasks performed in the real world (Harwood & Rudnitsky, 2005).

Robotics provides many opportunities to use STEAM and information technology to enhance interdisciplinary instruction for both the teacher and the students. The integration of robotics into the curriculum capitalizes on the embedded science concepts (Kimmel, Carpinelli, Burr-Alexander, Hirsch, & Rockland, 2008; Chambers, Carbonaro, & Rex, 2008). The design, construction, and control of the robots by the students contribute to the learners' acquisition of knowledge and the refinement of their thinking skills regarding scientific, engineering design, and information technology. Robots provide teachers with the opportunity to move the study of scientific concepts from the textbook to hands-on learning.

Robotics has elements that entails a different set of tasks and sequence of actions requiring the development of different procedures and programs using such programs as LEGO™ MIND-STORMS using ROBOLAB programming software. The programs can be used to demonstrate physical forces and design principles; to utilize various sensors, and relate scientific principles to the sensors while enabling students to understand basic programming concepts; and to demonstrate complex programming in which the robot must perform actions based on its sensors.

Anuar Mohd Yusof, (2010) did a case study of a group of primary school students and their involvement in eProjBL. eProjBL, which was designed to capitalize both the advantages of Project-based Learning (PBL) and e-learning with a blended learning environment to enhance the learning process of a group of students in a particular topic⁴². PBL is the one of conceptual framework of learning model from the constructivist theory and it is "a model for classroom activity that shifts away from the usual classroom practices of short, isolated, teacher-centered lessons. PBL also recognizes that active learners learn better in highly interactive environment. By integrating technology into PBL, eProjBL animation was used as a catalyst to motivate the students to become explorers and researchers. The main purpose of this research study was to investigate the student's perception on the eProjBL content and their engagement in this new blended learning environment utilizing the creation of an animation project. The student's perception on this blended learning environment were found to be positive, starting that they had fun, felt good and gained new knowledge. Most the students expressed that they would like to have this type of activity in their future classes as well as in other subjects. The findings of this study also show that students were engaged in the eProjBL animation activity with development and enhancement of new skills such as creativity, computer literacy, team work collaboration, designing, researching and writing.

While the presence of technology has remained constant, the ways that schools are using it has changed considerably over the last few decades. This might have been brought about by the increasingly ubiquitous nature of computers. It also reflects a fundamental shift in the way that educators thought about computers and the way they are used in schools and society. During the 1980's emphasis on technology was almost completely based on learning to interact with computers at the level of a programmer. Students would learn simple computer languages like BASIC and PASCAL. As computers became more affordable, and more widespread, the emphasis on learning to program computers shifted towards learning to use them as tools. Instead of learning computer languages, for example, students learned to use applications, like Microsoft Word or Excel. Almost overnight, computer science was replaced by Information and Communications Technology, and with the exception of a few electives and senior subject selections, learning about programming disappeared.

Today there is emerging the teaching of skills in **programming using coding**. The topic of programming might seem an abstract one. Why, a teacher might ask, does a student need to know how to program a computer? Often, the first thing that a student learns to do is to use word processing tools, but that student never has a chance to learn about the actual process of computing. While learning how to use applications on a computer is important, it doesn't obviate the need to understand what the computer is doing. In fact, the two goals are complementary, rather than opposing. Research shows that the understanding of computer science will lead to better results with applications.

According to recent studies, teaching basic coding can increase problem solving skills. Golpin (2014) writes: being able to follow programming logic trains the mind to think in more analytical ways. Debugging a program leads to better problem solving skills. Programs and coding skills

can be taught using software like Scratch, Gamemaker, Kodu, and others, without emphasizing the need to learn “hard core” programming languages like C++ or PHP.

As an example, Project EXPLORE teachers will use such programs as HTML and CSS, which are the languages that websites are written in. Although they are markup languages, yet they do provide a relatively simple way to teach. There’s a bonus because HTML is quite simple, and students will be able to see the results of their endeavors almost straight away. This means that they will be much more enthusiastic about continuing. That would be followed by teaching JAVA, and JavaScript. Coding will be taught using such programs as: Codecademy; Treehouse; and iOS.

Although curriculum materials and instructional strategies are necessary, they alone are not sufficient. What is also needed is effective **professional thematic training** for Project EXPLORE teachers. There are effective pre-service teacher preparation programs (Jones & Wang, 2001), that recognize the pressure on teachers to align their instruction with state content standards needs to be addressed (Anderson-Roland et al., 2002; Fadali & Robinson, 1999; Loepp, 2004; Olds, Patel, Yalvac, Kanter, & Goel, 2004; Schaefer, Sullivan, & Yowell, 2003). Anderson-Roland et al. (2002) examined these issues and concluded that the system of education as well as the pressure to implement academic content standards and associated high-stakes state-wide assessments were barriers to the degree by which thematic instruction and the curriculum can be addressed and/or modified.

Collaborative professional development will be an essential aspect of teaching the Creative Sciences and Arts theme Program. High quality professional development has been extensively researched. For example, Loucks-Horsely (2003) identified four clusters of variables that affect the quality or nature of professional development. These clusters include: (a) content; (b) process;

(c) strategies and structures; and (d) context. Further, high quality professional development must include “a focus on content and how students learn content; in-depth, active learning opportunities; links to high standards, opportunities for teachers to engage in leadership roles; extended duration; and the collective participation of groups of teachers, grade, and/or department” (Desimone, Porter, Garet, Yoon, & Birman, 2002, p. 82).

Project EXPLORE school faculties will pursue high quality professional development through a learning community approach. The composition of the learning teams (community) will consist of a thematic specialist, a teacher with a mathematics background, a teacher with physical science training, the principal, a guidance counselor, and a parent from each Project EXPLORE school; faculty from LSU, SU or BRCC; and other related professionals. The professional development will be continuous throughout the school year and summer months. The composition of the learning teams (teachers, principals, guidance counselors, and parents) is best situated to achieve these targeted outcomes based on the literature. The targeted outcomes are to conduct high quality professional development will ultimately affect the culture of the school and student achievement in a positive manner.

Hoover-Dempsey, et al. (2005) offered a list of strategies to increase a school’s instructional capacities. This extensive list included: creating an inviting, welcoming school climate; empowering teachers; learning about teachers’ and parents’ goals and perspectives on child’s learning; and offering a full range of involvement opportunities. Another strategy the researchers offered was for schools to create a dynamic, systematic, and consistent approach to improving family-school relationships. Comer and Haynes (1991) agreed, stating that “parent involvement programs are most effective when they are part of an integrated ecological approach to school enhancement.” After implementing a successful parent involvement program in an inner-city

school, Hara and Burke (1998) showed that planning and the carrying out of ongoing staff development, reviews of school and district policies and procedures, joining a network of schools, and obtain related guides and parent involvement materials are essential elements of a successful instructional program. Project EXPLORE has developed a theory of action plan that uses these evidence based elements for improving school and student performance.

Students working together in racial socioeconomic diverse groups who participate in exciting instructional approaches developed for this proposal will be able to meet the lofty goals and objectives set forth for the grant.

C) QUALITY OF MANAGEMENT PLAN

Last year was the first year that Mr. Warren Drake served as Superintendent of EBRPSS. He has spent a good deal of time over the past year seeking advice of the district's school leaders and from educators across the nation to explore ways to better educate students and improve school performance. He is using the advice to put into place successful elements of School-based management (SBM).⁴³ They are being used as the way to promote improvement by decentralizing control from central district offices to individual school sites. The idea is to give school constituents--administrators, teachers, parents and other community members--more control over what happens in their schools.

Research on the private sector shows large-scale change, such as decentralization, cannot be simply installed. Rather it unfolds over time through a gradual learning process. Despite significant central office management control of school management in the past, Ms. Porter, the Magnet School Director, has been able to carry out a gradual transition to SBM for the operation of the magnet school programs. Her organizational structure for the operation of successful magnet schools involves a central office staff. However, staff will serve as a resource to the magnet prin-

principals and not management overseers. The Magnet Director has offered the grant proposed magnet principals significant latitude in thematic program component development. She will continue the use of management decentralization because it has so far resulted in outstanding magnet programs in seven elementary schools, five middle schools and four high schools throughout the parish. Many have been recognized for earning Blue Ribbon status and for being awarded numerous Magnet Schools of America Merit awards. The principals of the four new Sciences and Arts magnet schools (Villa del Rey and Park Forest elementary schools, Park Forest Middle and Belaire High) will have the flexibility to manage the new proposed magnet schools without central office interference.

EBRPSS and its School Board is moving forward with the concept of magnet schools as a method to reduce racial isolation in these schools. At the same time, the Board requires that school officials to develop magnet programs that are not only innovative, but also challenging enough to provide students the knowledge and skills required to be successful in a highly technological global world. **This will be the first time EBRPSS is applying for a MSAP grant for these participating schools and it will be the first time that the school district would receive desegregation assistance under MSAP.** To accomplish the Board's mission, the District proposes to open these four new magnet sites using Magnet Schools Assistance Program funds. With MSAP funds, the district will reduce the racial isolation while ending the low-income status that has hindered the progress of these schools.

EBRPSS has provided outstanding magnet programs since 1981, the year a "freedom of choice" plan was terminated by Court order. Then in 1996, the Court approved a Consent Decree, which eliminated much of the forced busing required under the 1981 plan. It also created new magnet programs to attract white students into the district's majority-black inner city schools. During

those years, several magnet programs improved the quality of schools so that significant numbers of white students returned to the district. An example is Baton Rouge Magnet High School, which grew to currently become ranked 6th within Louisiana. Students can take Advanced Placement® course work and exams. The AP® participation rate at Baton Rouge Magnet High School currently is 43 percent. The student body makeup is 36 percent male and 64 percent female, and the total enrollment is 66.56% minority. The Baton Rouge Magnet High School is the highest ranked of 15 high schools in the East Baton Rouge Parish. Several of the magnet schools have been recognized for earning Blue Ribbon status and for receiving numerous Magnet Schools of America awards.

Now the Board of Education has modified its racial diversity plan to create these four new magnet schools, serving grades PreK-12, to racially, ethnically and economically diversify racially and socioeconomically impacted schools. The four district schools were chosen to implement a Sciences and Arts magnet theme. The themes are designed not only to be attractive to students who live in a community, but also to help them understand the need and value of the Sciences and Arts. All four of the schools can accommodate a racially diverse student population who apply and are chosen based on interest only.

(c)(1) Plan to achieve objectives, within budget, responsibilities, timelines, and milestones

The management structure for the East Baton Rouge magnet school project is based on a sound administrative plan created as part of the changes brought about through state and national reform initiatives. The approach to sound administrative practice of this project will include successful elements of School Based Management using decentralized control, entrepreneurial management, and grassroots initiatives. They all fit within a framework of publicly defined standards and accountability. Under this approach, Superintendent Drake and central office school officials

will base the magnet curriculum on the new Louisiana content standards adopted as a result of the Every Student Succeeds Act (ESSA), make assessments, and hold schools accountable for meeting performance goals. While the principals have primary responsibility for the operation of their schools, they are supported and supervised by the Superintendent and the central instructional supervisory staff who act primarily as a supporting resource, but retain the authority to revise school-management structure on grounds of consistently poor performance. However, they will not directly supervise or control how the magnet principals pursue those ends.

The district's administrative structure is designed to accomplish this as evidenced by effective schools' research concerning innovative administrative practices that help rather than hinder school operations. Using that research, the magnet program operational design encompasses approaches that will dramatically improve the quality of instruction in all schools including: the use of central office and school administrators as resources, offering entry-level teachers and struggling teachers training where they learn effective classroom techniques used by colleagues, creation of a cadre of high-performing teachers to conduct the unique thematic curriculum and special research-based teaching approaches for new teachers coming into the schools each year, using magnet resource specialists to assist magnet teachers in carrying out special activities and learning approaches, and providing project teachers with knowledge of new technologies for learning. The Project EXPLORE developers and management team have the responsibility to ensure the proper and efficient management of the project and the successful implementation of magnet programs. Specifically, the magnet office staff allocates funds; monitors all expenditures; provides leadership in curriculum support and staff development; promotes parent, business and community participation; markets the magnet program and reports on its effectiveness.

Magnet Program Administration - The overall responsibility for this project rests with the EBRPSS Board of Education and the Superintendent of Schools. They have the direct responsibility for carrying out a successful magnet program that not only reduces racial isolation in the four new magnet schools but also improves instruction for participating students. The Board of Education follows a site-based management policy whereby individual principals and their school staffs have the flexibility to make decisions about the administration of the magnet programs. The Board of Education believes that school staff can best identify and serve the needs of the student populations in their school.

MSAP Oversight Team - The administration of the magnet programs is one whereby the various departments of the district interface to achieve coordinated efforts that reflect a highly rational, researched approach to both planning and management. To ensure that all lines of communication remain open, the district will formalize its Magnet Schools Assistance Oversight Team. Under this plan, the operation of magnet schools is integrated into the existing District management structure. The team consists of the **Associate Superintendent (Adam Smith), Director of Magnet Schools (Ms. Theresa Porter), Chief for Communications and Public Relations (Ms. Adonica Pelichet-Duggan)** and the **Chief Officer for Accountability, Assessment and Evaluation (Andrea O’Konski)**. The relationship of the team members is outlined as shown below.



The **Oversight Team**, through the Director of Magnet Schools, will: Disseminate information directly to building administrators; (1) Provide input into the planning process; (2) Review and coordinate the business and financial aspects of

each magnet; Provide leadership to enhance planning for the educational needs of each school; and (3) Provide support to the magnet sites with recruitment and public relations; (4) meet with the external project evaluator regularly to ensure progress in meeting project objectives; (5) Maintain coordination between the school staffs, other desegregation/integration efforts, and individuals and agencies that will help attain the program's objectives; and (6) Communicate, coordinate, and disseminate the "Magnet School Concept" to the public and partnering organizations within the parish, Louisiana and the nation. The Oversight Team will meet monthly with school/community based advisory committees that are engaged in planning and project implementation. The purpose of the meetings will be to share successes and to identify challenges and barriers to implementation with a goal of working toward resolution.

Magnet-Focused Responsibilities of Key Personnel and Teams - The project has two interrelated levels of program management involving central-level and on-site staff. Central administration staff selected for the MSAP project includes persons actively involved in magnet school development and operations. The on-site staff selected for the MSAP project will be under the direction of the principals, but will also serve in an advisory capacity to the Magnet Program Director and the management teams. The persons on the management team who were actively involved in the development of the magnet programs for the four schools in this project are participating in the planning and will participate in program implementation. Among the more focused responsibilities of the respective teams are the following:

(1) **General Administration and Oversight:** Fidelity for the magnet focus is the responsibility of **Theresa Porter, Director of Magnet Programs**. She will assume overall responsibility for all aspects of the MSAP effort and will coordinate with Adam Smith, **Associate Superintendent**

and the **Oversight Team**, as well as with other key staff persons to keep current with the progress of the grant activities and services.

(2) School Operations and Parent/Community Involvement - These elements are the direct responsibilities of Ms. Adonica Pelichet-Duggan, **Chief for Communications and Public Relations** and magnet school principals. She is responsible for operational support to all schools.

Millie Williams, **Chief Executive Director of Human Resources** serves as the superintendent's key person to recruit and select the most qualified personnel for the district and the magnet programs. The Director of Human Resources works directly under the leadership of the Superintendent, and coordinates the selection of school personnel with individual school principals.

Instruction and Leadership: Under the direction of the Associate Superintendent, Andrea O'Konski serves as **Chief Officer for Accountability, Assessment and Evaluation** who overseeing curriculum, instruction and assessment for the system as well as accountability, career & technical education, charter schools, content area specialists, textbooks and professional development. Under her leadership, the Office for Professional Development is responsible for the design and implementation of high quality staff development activities that will significantly improve the academic skills of students. Richard Ellis, **Chief Technology Officer Technology Services** oversees the planning and infusion of technology into instruction and management.

(4) Evaluation: Andrea O'Konski, the **Chief Officer for Accountability, Assessment and Evaluation** also has primary responsibility for the evaluation of all programs in the school district and for providing summative and formative evaluation information to key administrators.

(5) Fiscal Management: Under the direction of James Crochet, the **Chief Business Operations Officer**, the District's financial staff is responsible for supervision of all fiscal matters. Her office assures compliance with appropriate local, state and federal fiscal regulations.

The implementation of the various activities associated with this project will benefit from the ongoing review of the bi-racial advisory committee with continuing monitoring and reporting responsibility to the board of education. The following is a description about how staff from the different offices work together to provide an effective plan of management that ensure proper and efficient administration of the magnet school's project.

The Office of the Director of Magnet Schools - The responsibility for the Magnet Schools Assistance Program grant will be assigned to Ms. Theresa Porter, the Director of Magnet Schools.

The new Assistant Director of Magnet Schools, who will be hired under the grant, will report to Ms. Porter and will devote 100% of her/his time to the funded Project EXPLORE. Ms. Porter has served in this position since 2012 and has extensive experience with managing the current magnet programs for the district. She is responsible for the coordination between central office staff and all magnet schools operating in the school system. Ms. Porter reports directly to Adam Smith the **Associate Superintendent**. Mr. Smith will devote approximately 25% of his time during the life of the grant to supervising the activities of the Director of Magnet Schools. Mr. Smith is the only Assistant Superintendent in the district and reports directly to the Deputy Superintendent, Dr. Michelle Clayton. He is responsible for oversight and implementation of the district's educational programs at the elementary, middle, and secondary levels. The executive director for elementary, middle and high schools and the director of curriculum all report directly to Mr. Smith. As a result of this relationship, the Director of Magnet Schools will have ongoing interaction and influence with key central office staff in matters relating to the administration of this project.

The magnet school principals and site-based magnet teams will report directly to the Director of Magnet Schools to operate the magnet school programs. As a result, Ms. Porter will have direct access to the principals and be able to ensure the proper implementation of the project. Ms. Por-

ter and the principals will be responsible for the successful operation of the magnet programs.

They will work together to supervise program staff and ensure the successful implementation of the program. Directors at the elementary and secondary school levels work directly with principals and site-based teams in non-magnet schools.

Assistant Magnet Program Director (APD) (1FTE) is part of the grant to oversee the successful operation of grant funded Project EXPLORE. The APD will work with Ms. Porter, the MPD, to help her carry out the intent of the MSAP project. He/she will be responsible for working with Ms. Porter and the principals and teachers to coordinate program activities and curriculum, and participate in the selection of specialists and teachers hired for the magnet schools. The APD will also assist with the monitoring the implementation of magnet programs and services and help set up the annual staff development provided to magnet teachers and principals. **The APD will spend 100% of his/her time working with the MSAP grant and will be paid from grant funds.**

The responsibilities of the Project EXPLORE Assistant Magnet Program Director include: (1) carrying out project explore activities in coordination with magnet building principals, site-based management teams and other district personnel; (2) tracking expenditures of special magnet school funds in coordination with magnet building principals, site-based management teams and other district personnel; (3) coordinating evaluation activities with the project evaluator including assistance with the collection of all appropriate data; (4) coordinating promotional activities designed to attract significant numbers of student applications for magnet programs annually; (5) conducting ongoing interaction with media and newspapers to promote magnet programs; (6) conducting annual magnet fair in coordination with magnet building principals, site-based management teams and other district personnel; (7) conducting research about successful magnet ac-

tivities and programs and makes information available to schools, central office administrators, parents and the community; (8) distributing information about activities conducted at magnet schools to parents and interested persons in the community; (9) providing leadership for magnet school activities to ensure the appropriateness of expenditures and to ensure that all magnet school sites meet racial/ethnic guidelines; (10) serving as a liaison to all planning and curriculum development committees related to developing the magnet school programs; and (11) providing leadership for teachers, building administrators, counselors and support personnel.

Magnet Promotion Specialist (1 FTE) will work with the District's Public Information Office to develop an ongoing advertising and recruiting plan for the Project EXPLORE. Together they will develop a marketing and recruitment campaign designed to interest large numbers of students from throughout the district in applying to the new magnet programs. The MPS will also be responsible for the annual Magnet Fair and the recruitment campaign held in the spring. The Assistant Magnet Program Director will report to Ms. Porter during the five-year project period, but will be based in the Magnet Office. **The Promotion Specialist will spend 100% of his/her time** with the project and will be paid from grant funds.

Magnet Curriculum and Staff Development Specialists (4 FTE) will provide the primary building leadership for the implementation of the Sciences and Arts thematic component involving interdisciplinary and project based instruction. As a magnet office resource, the Curriculum and Staff Development Specialists will work with principals and campus faculties in coordinating and conducting project activities including thematic curriculum and staff development related to school-wide daily teaching using best practices, project based learning, extended day instruction, IGE grouping, academic engagement, setting student high expectations, college and technical school planning, college and technical studies orientation, dual credit at the high school

level, integrated technology, alumni tracking and parental involvement activities. **The Curriculum and Staff Development Specialist will spend 100% of his/her time** with the project and will be paid from grant funds.

Instructional Technology Specialist (4FTE) will work with the Director and Assistant Director to support teachers and students. This position will work with each project school's faculty and principal to develop and maintain electronic and online instructional materials, design online courses, support instructional technology, provide one-on-one and group technical support to faculty and students, and implement Louisiana and common core standards in technology learning. This position will also assist with EBRPSS Instructional Technology system administration, assist end-users with troubleshooting and other support functions, as well as support professional development for magnet faculties. **The Instructional Technology Specialists will spend 100% of their time** with the project and will be paid from grant funds.

The Director of Magnet Schools and the magnet principals will work collaboratively with the Director of Public Relations to develop partnerships with Exxon Mobil Corporation, and Piosigen, Inc. They will also coordinate project activities with the Southern University and A&M College. The partnerships are designed to provide students with mentors and with experiences and opportunities related to careers in the field of Sciences and Arts. The partnerships will be developed to provide apprentice training opportunities, field trips, mentorship and job shadowing opportunities, and exposure of students to challenging and new information in the areas of businesses related to the use of Sciences and Arts. Many existing and new partners have been involved with the district's planning process for the proposed magnets and have written letters of commitment indicating definite ways in which they will be involved.

A **Budget Assistant** will be employed to help the Director of Magnet Programs monitor the grant budget expenditures. The budget assistant will create spreadsheets for approved materials and supplies and monitor expenditures from the time purchase orders are received from the school until they are paid in the finance office. The Budget Assistant will also keep inventory records and maintain project records.

A **Project Secretary** will provide support for the Magnet Program Director's office. The project secretary will facilitate written communications and handle telephone inquiries for the project staff. The project secretary duties will include maintenance of project records, preparation of materials for student recruitment, preparation and maintenance of materials for program promotion, maintenance of an inventory of equipment purchased through project funds, preparation of purchase requisitions and extra-stipend vouchers, and maintenance committee meeting minutes.

Magnet School Program Evaluator - The magnet school concept within EBRPSS is designed in a way that will ensure success in terms of preventing or reducing racial isolation while improving achievement. An external evaluator will be selected through bidding procedures so that an objective evaluation of the MSAP funded magnet schools can be fairly presented. Grant funds will pay for approximately 30% of the anticipated project evaluation costs and the district will contribute 70% by making available clerical and research assistant support to the project evaluator. The evaluation expert will work closely with the Director of Magnet Schools and the building level principals to make certain that both formative and summative data are collected as presented in the evaluation plan in this grant application. A timeline specific for the evaluation will be used as a guide to administer the appropriate evaluation instruments and to make certain that both qualitative and quantitative data are collected.

The firm or individual evaluator will be independent of and external to the school district. The district's purchasing office will advertise a Request for Proposal (RFP) covering all five-year evaluation using EBR contracting procedures to determine which organization or individual is qualified to conduct the independent and external evaluation. A full discussion about the services and qualifications required for selecting the external evaluator are included in the evaluation section.

The external evaluator will prepare and provide reports at periodic intervals to ascertain whether programmatic goals and objectives are being accomplished. The evaluation specialist will provide regular verbal and written reports to the district's Magnet Oversight Team to assist the district with making any necessary program modifications.

Some databases such as enrollment, achievement, and racial composition data at the school level are routinely maintained in the district's Management Information Services Department and will be available to the evaluation expert. Other data collected will include vocational education achievement, documentation on the development of curriculum materials, and the extent of parent and community involvement. Data collection procedures will include administration and analysis of student, parent, and staff satisfaction surveys, review of student records, in-depth interviews with parents and staff, and on-site program observations.

Magnet School Management Timeline - The primary management tasks that have been and will be undertaken by the Director of Magnet Schools, building principals, program evaluator, and other district staff over the five-year project planning and implementation period are shown with specific time frames in the Management Time Lines (Included in the Appendix). Numerous planning activities have occurred prior to submission of this application, including: Identification of teachers who will serve on the Admissions/Recruiting Coordinating Staff; Orientation of all

staff to the Magnet School Concept; Development of a vision for each school; identification of sciences and arts theme components; delineation of areas of study; identification and involvement with community partners, parents, and students; development of plans to infuse high technology into each magnet; discussion of the development of both school-based and district strategies for student recruitment; use of curriculum and educational technology consultants to determine needs, i.e., staffing, equipment, materials, and other resources necessary to implement the grant.

(c)(2) Ensure that a diversity of perspectives including parents, teachers --

Research by organizational scientists, psychologists, sociologists, economists and demographers show that socially diverse groups (that is, those with a diversity of race, ethnicity, gender and sexual orientation) are more innovative than homogeneous groups. It is with this understanding that the Project EXPLORE will rely on diverse sets of individuals designed to be inclusive of the parents of students attending magnet schools, teachers in the schools, the business community affected by the project and professionals living in the EBRPSS service area.

Parent Perspectives - This project will include activities that are designed to actively involve parental participation as part of each magnet school. Based on the input of individual school advisory committees (included in Appendix), plus suggestions by teachers and staff that are working on the design of the magnet school project, involvement of parents in the education of magnet children is considered extremely important to the success of the magnet school project. This is particularly true for lower-income parents who often have less education, less knowledge about the needs of their children, and are often less involved with their children's education. This Project EXPLORE will include activities designed to improve interaction between teachers, parents, and students. The magnet school program structure is being designed to revamp the

structure of a school/home interaction process. It will include time for teacher-parent interaction and weekly school activities that involve parent participation in the classroom. Classrooms in magnet schools will be open several evenings each month to allow parents and students to work together on projects.

Teacher Perspectives – Educational literature, theory, and reform trends have long promoted putting teachers in a central role in curricular design. The work of early theorists recognized the importance of the role of the classroom teacher in curricular development at the building level (Ornstein & Hunkins, 2004)⁴⁴. The Project EXPLORE is built on the concept of meaningful and sustained teacher involvement in school-based decision-making. It is recognized that teacher knowledge reflects a complex and lengthy acquisition process that is not completed within academic settings without their approval. As such, planning of all activities, including staff development will be done through their participation and approval. Professional development in the area of interdisciplinary instruction, project-based instruction, curriculum theory and critical pedagogy will be developed under the guidance of a teacher and principal developed “leadership team” and conducted using trainers supported by them. To this end, professional development activities of sustained duration, which provide focused, rigorous, and reflective knowledge of curricular issues, will be accepted and carried out by all working professional educators in each magnet school.

Community Perspectives - EBRPSS has a long-standing commitment to building partnerships with businesses, corporations, and the professional community. This commitment has taken the form of an adopted Board of Education policy that encourages businesspersons and local community organization representatives to assist the District and its schools in a variety of ways.

Schools conduct many activities during the school year and business representatives and the community supports them by attending school events and PTO meetings.

A series of surveys will be used to establish baseline data measuring parent and staff attitudes about the school and parent and community involvement during the implementation year of the MSAP at each magnet school. In the spring and fall of each year, the surveys will be re-administered to all parents and staff and the resulting data examined to determine changes in attitudes and to look for gaps in the perception of parents and staff. This information will be used to target areas needing improvement. Baseline data will be collected monthly throughout the school year. The data will include student attendance, discipline referrals, parent conferences, and attendance at school trainings for parents and staff.

The members of a community-wide Advisory Board represent the diverse viewpoints and experiences of neighborhood families and schools, the business community, social service providers, municipal government, housing providers and higher education. Each will have a voice in and responsibility for planning and implementing the Sciences and Arts magnet program. The Mayor and City Council also have publicly committed to the use of magnet schools and their expansion. The Advisory Board is aware of the priority to use the new magnet schools to attract students back into EBRPSS from “breakaway” school systems and will participate in the research of the planning to building the capacity necessary to achieve this goal.

D) QUALITY OF PERSONNEL

The teams of key personnel responsible for the implementation of the magnet school project will be highly qualified professionals, possessing extensive and diverse educational experiences and training. In addition to their commitment to this project and the District's efforts to integrate the schools, these dedicated professionals will strive to enhance and increase the academic achieve-

ments of all students. **A detailed Matrix of the background and experience of the Director and key personnel are resumes included in the Appendix.**

(d)(1) The Project Director Is Qualified to Manage the Project

Following notification of funding by MSAP, an Assistant Director of Magnet Schools, who will report to Ms. Theresa Porter, the current Director of Magnet Schools will be identified and hired.

Once hired, the assistant director will devote 100% of his/her time to the Project EXPLORE.

This position will be advertised and posted according to district policies and procedures. The ad will be placed in national educational publications to attract the most qualified individual.

The minimum qualifications of the person selected for this position will include:

- a master's degree with a doctorate preferred; administrative experience in education;
- demonstrated educational leadership; experience in management and planning;
- development and administration of innovative programs;
- experience as a teacher and/or administrator in a magnet school;
- experience working with parents and children from different racial, ethnic, social and economic backgrounds;
- experience in developing innovative programs capable of attracting students into magnet schools;
- knowledge of a variety of innovative programs;
- knowledge of Louisiana curriculum content standards and student assessment tests;
- valid or eligible for Louisiana certification with experience in educational leadership;
- experience with or demonstrated interest and commitment to the magnet school concept;
- related educational administrative and teaching experience totaling a minimum of five years;

- demonstrated skills in collaborating with diverse program staff, parent groups, and community partners and leaders in implementing program plans as designed and in modifying program plans as needed; and
- demonstrated skills in human relations, leadership and management.

District procedures for hiring the new Assistant Director of Magnet Programs will include: securing confidential references, screening of applications by the Human Resources department to determine if minimal requirements are met, interviews by the Superintendent's executive leadership district team, and an interview and recommendation by the Director of Magnet Programs.

Ms. Theresa Porter is the Director of Magnet Schools for the district and will oversee grant implementation until a full-time Assistant Director can be hired, which should be no later than one month after a MSAP grant is awarded to the district. She has a Louisiana administrator's certificate from LSU that includes advanced coursework in curriculum development, supervision, research, tests and measurements, statistics, special needs populations, and the Principalship. She is a graduate of Louisiana State University and Southern University receiving a Bachelor's degree in Secondary Education and a Masters in Curriculum and Instruction with certification in administration and supervision, computer technology and 30 plus graduate hours in policy-making, urban affairs and supervision from both universities. Besides extensive training in various forms of technology, she has also facilitated workshops and presented nationally at the Magnet Schools of America and National Middle Schools conferences.

She has had at more than 17 years' experience working with EBRPSS magnet school programs that were part of the school system's desegregation plan. she also serves as a role model for students as one of the district's first STEM educator. Ms. Porter has more than at least 10 years of successful teaching, administrative, and supervisory experience.

As the Director of Magnet Schools, Ms. Porter coordinates with Mr. Smith, the Associate Superintendent. She coordinates her role with him by providing leadership and organizational assistance to the magnet schools throughout EBRPSS; coordinates the planning, development, and implementation and evaluation of the magnet school programs; coordinates the selection/writing, implementation and evaluation of the magnet school program curriculum; promotes student learning and achievement by integrating district benchmarks with magnet thematic instruction; ensures that student achievement is the focus of all magnet schools; demonstrates a knowledge of a variety of available teaching materials and instructional methods; works with the Assistant Superintendent of Curriculum and Instruction, Executive Directors, Program Directors, and the magnet school principals in the planning, implementing and conducting of the staff development for the staff of the magnet school programs; and works with magnet program staff to develop, maintain, and revise curriculum documents for the magnet schools based on systematic review and analysis.

In addition, Ms. Porter is responsible to involve the appropriate staff in evaluating and selecting instructional materials to meet student learning needs; supervises the writing, editing, and revising of curriculum materials to support the instructional program of the magnet schools; works with magnet principals to develop, maintain, and revise the magnet school policies and procedure manual based on systematic review and analysis. Theresa Porter is a former state assessor and mentor, a Teacher Advancement Program (TAP) Master Teacher and was honored as a teacher of the year at Crestworth Middle School.

Ms. Porter began teaching in EBRPSS at the middle school level in 1988 and became the Magnet/Technology Coordinator for a math, science and technology magnet in 1998. She also served

as an ad hoc magnet committee member for the district to oversee implementation of the Consent Decree and the Final Settlement Agreement (which recently ended) for EBRPSS.

Ms. Porter is a Magnet Schools of America Board member for Region V (Arkansas, Louisiana, New Mexico, Mississippi, Oklahoma and Texas) and is also the president of Magnet Schools of the Mid-South, a regional organization. Ms. Porter has the leadership responsibilities for the Project EXPLORE and will provide leadership to the startup of Project EXPLORE until a full time Assistant Director is selected and has a chance to become totally familiar with the district's operation procedures.

Ms. Porter's biography and resume that includes her experience and qualifications required for her position as Director of Magnet Schools are included in Appendix.

(d)(2) Other personnel are qualified to manage the project.

The central office management team oversees four key areas of administration. All schools receive support from the personnel who make up these divisions. Their qualifications will help make all EBRPSS magnet programs the most successful in Louisiana.

Superintendent of Schools Warren Drake became Superintendent of EBRPSS beginning with the 2015-2016 school year. Since being named as the Superintendent of the state's second largest school district, he has had an ambitious plan to build the future of Baton Rouge's schools. Mr. Drake undertook a major reorganization effort to streamline efficiency and continues to work to improve academic achievement and student success. Prior to a five-year work at the Louisiana Department of Education, he spent 10 years leading Zachary to prominence as the state's Top Performing School District. He has returned home to lead EBRPSS where he spent most of his career as a teacher and a principal. In 2012, Mr. Drake was selected to lead one of 5 networks designed to transform the administration of education support in Louisiana. Network 3, led by

him, has a staff of 14 and provides support in 19 school districts across south Louisiana focusing on budget planning, early childhood education, high schools, principals and teacher leaders.

Mr. Drake has special expertise in passing bond referendums for construction of schools. He plans to use this skill to pass a \$129 million bond program to fund a Facility Master Plan to upgrade the district's existing facilities, including the four schools included in this project, and to construct four new schools. Mr. Drake has initiated a strategic planning process resulting in a comprehensive document and revision schedule for guiding district areas of focus, expanded course offerings for both high-performing and academically at-risk students, while also increasing advanced placement, gifted and honors offerings for students with accelerated academic needs. Mr. Drake's resume that includes his experience and qualifications as the key executive able to implement the new Sciences and Arts magnet programs is included in Appendix.

Qualifications of Officials in the Central Office School Operations –

Dr. Michelle Clayton currently serves as the Deputy Superintendent of the East Baton Rouge Parish School System, where she joined the team in June of 2015. Prior to her accepting her current role, Dr. Clayton oversaw the Zachary Community School District's instructional program for 12 years. Dr. Clayton is focused on a commitment to academic excellence and for providing outstanding educational opportunities for students of all ability levels.

Dr. Clayton holds a Bachelor of Arts from Louisiana State University, a Masters of Education from University of Lafayette, and Doctorate of Philosophy Degree from Southern University. Her resume that includes the experience and qualifications needed for her position as a key member of the team to implement the new magnet programs is included in Appendix.

Adam Smith is the district's Associate Superintendent oversees academic departments including: Federal Programs, Exceptional Student Services, Child Welfare And Attendance, Early

Childhood, Magnet Programs, Gifted & Talented, Library Services, Social Services And Intervention. He has served as a vocational and career facilitator, an assistant principal and principal in the East Baton Rouge Parish School System. He was responsible for identifying areas of instructional program development and was instrumental in effectively using the turn-around model to change the culture and school performance scores in several low-performing schools. The qualifications as a key member of the team to implement the new magnet programs are included in Appendix.

Andrea O’Konski is the Chief of Academic Programs for EBRPSS. Ms. O’Konski is responsible for overseeing Curriculum, Instruction and Assessment for the system as well as Accountability, Career & Technical Education, Charter Schools, Content Area Specialists, Textbooks and Professional Development. She has served as the standing and/or lead member on district committees including: Pupil Progression Plan, the district’s elementary, middle and high school summer school programs, the district’s accreditation steering committee and writing team, the charter school review team, and the district’s virtual school.

Ms. O’Konski has provided instructional leadership to administrators and staff at assigned K-12 sites in the areas of professional development, data analysis, curriculum implementation and instructional strategies. She holds a Bachelor of Arts-English, Master of Education-Curriculum of Instruction from Louisiana State University. Her resume that includes the experience and qualifications as a key member of the team to implement the new magnet programs is included in Appendix.

Ms. Millie Williams is the Chief Executive Director of Human Resources. She manages, supervises and directs the Human Resource Department for EBRPSS and serves as a resource to staff that operates the district’s current thematic magnet schools. Ms. Williams is responsible for a

wide variety of personnel policies, processes and employment agreements (e.g. recruitment, selection, hiring, orientation, federal and state mandates, labor and employment contracts, compensation schedule, etc.) for the purpose of conforming to district policies. She holds a Bachelor of Science in Accounting, a Bachelor of Science, Mathematics and Science, a Master of Arts and Mathematics from Southern University. Ms. Williams has been a mathematics teacher, an assistant principal and a staff development consultant. Her resume that includes the experience and qualifications is included in Appendix.

James P Crochet is the Chief Financial Officer for the district. Mr. Crochet is responsible for overseeing the financial operations of the district, including the operations of payroll and benefits, grants, and property control. He has worked in EBRPSS since 1993. He also ensures that the district is in compliance at the local, state and federal levels. Mr. Crochet has more than 23 years in the accounting field and is a certified public accountant. His career began as a Grants Fiscal Officer and was then promoted to the Director of Finance in 1999. James Crochet received a Bachelor's of Science in Accounting from Louisiana State University in 1993.

Adonica Pelichet Duggan is Chief Communications Officer for EBRPSS. Ms. Duggan directs internal and external communications, media relation's activities and leads strategic communications for the superintendent, district leadership and schools. She also provides marketing, media relations and crisis communications support to schools. She serves as the superintendent's primary media spokesperson and as a liaison with other organizations. Ms. Duggan has extensive experience in graphic design, web-based platforms, and the Adobe Suite, a popular format for design and communication platforms. She has also served as an editor and graphic designer for Baton Rouge Parent Magazine and Lamar Advertising, a national billboard company.

Other EBRPSS personnel including: Richard Ellis, Chief Technology Officer; Ben Necaie, Executive Director for High Schools; John McCann, Executive Director for Middle Schools; and Ni'shawn Stovall, Recruiter for the district's current magnet schools, will play an important part in the setup of the new magnet schools. Included in the matrix included in the Appendix of key personnel is a description of their experience and special skills that can be used to help make the new Project EXPLORE successful.

Principals of the newly Created Magnet Schools –

Dr. Joy Abernathy-Dyer is the Principal of **Villa del Rey Elementary School** – to be the **Villa del Rey Creative Sciences and Arts Elementary Magnet School**. She was appointed to Villa del Rey because she has experience as a turnaround elementary principal and Curriculum Coordinator. She has transformed Villa del Rey into a LAA+ Arts Integrated School by working with community partners to increase the school's climate and maximize student achievement. Dr. Abernathy-Dyer began teaching at the elementary level right at 19 years ago in East Baton Rouge Parish and has served as a grade level chairperson and interventionist. In addition to her role as an Instructional Coordinator for the district, she has also coordinated the Louisiana Education Assessment Program (LEAP) tutoring program and the extended day program for pre-kindergarten - fifth grade students at the school for the past 3 years. Dr. Abernathy-Dyer has worked as a site-based elementary instructional specialist, which included assisting schools in developing instructional plans to target the specific academic needs of students. Classroom Teachers, Administrators and parents alike have benefitted from her expertise and trainings in 21st Century Curriculum Practice and Assessments.

Dr. Abernathy-Dyer has a B.A. in Elementary Education from Southern University and an Education Specialist degree in Literacy and Ph.D. in Curriculum, Theory, Policy and Practice

from Louisiana State University (Baton Rouge, LA). Included in the Appendix matrix of key personnel is a resume with a description of her experience and leadership skills that will be used to help make the new Project EXPLORE successful.

Alicia Franklin is the Principal of **Park Forest Elementary School** – to be the **Park Forest Creative Sciences and Arts Elementary Magnet School**. She was appointed to Park Forest because she has experience as a turnaround elementary principal. So far, she has integrated Arts into the school by working with community partners to expose and cultivate a creative school climate and maximize student achievement. She began teaching at the elementary level and math interventionist, in addition to her role as technology facilitator. As the Director of the Iberville Math, Science & Arts Academy, Ms. Franklin coordinated Arts Showcase exhibiting the art work of the talented art students, scheduled and assisted with the production of school and district productions and the incorporation of STEM into the high school curriculum. Ms. Franklin has a Bachelor of Arts in Elementary Education and a Master of Education in Administration and Supervision from Southern University and A&M College. Included in the Appendix matrix of key personnel is a resume with a description of her experience and leadership skills that will be used to help make Park Forest Renewable Energy Elementary Magnet School with an Arts integration focus on Entertainment Technology and Film a success.

Curtis Walker will be the Principal of The Park Forest Creative Sciences and Arts Middle School.. Before being appointed as the principal of Park Forest Middle School, he served as the assistant principal at Broadmoor Middle School. His duties included aggregating, analyzing, and leveraging data to execute critical decision-making activities and demonstrating collaborative leadership which empowers other stakeholders in the decision-making process. He is trained on how to implement true data team meetings and on how to incorporate professional learning

communities amongst teacher leaders for the improvement of student achievement. Mr. Walker has received responsive training on crisis intervention, and the correct and proper procedures for handling students with exceptionalities in accordance to district, state and federal policy. He has a B.S. degree and a Masters of Education-Administration and Supervision from Southern University and he is a doctoral candidate at Southeastern Louisiana University. Resumes of all individuals involved in the development and conduct of Project EXPLORE after it starts are included in the Appendix.

(d)(3) Teachers are qualified to implement the special curriculum of the magnet schools

The new Louisiana Standards has had a significant impact on what constitutes the definition of “qualifications” for those teachers who will provide instruction in participating magnet schools and implement the special curriculum of the magnet schools. Therefore, teacher qualifications have been carried beyond simple licensure or certification for new teachers. At the elementary school level, a highly qualified new teacher must have passed a test of subject knowledge and teaching skills in reading, writing, and mathematics. At the middle and secondary school level, a highly qualified new teacher must have passed a rigorous exam or have the equivalent of an undergraduate major in each of the subjects he or she teaches. An important requirement is for disadvantaged students to have equal access to high quality teachers. For this project, "well qualified" is defined as a teacher who was fully certified and holds the equivalent of a major in the field being taught. For elementary teachers, the major must be in elementary education; for elementary specialists, the major must be in content areas such as science or in mathematics.

Recent research suggests that high school teachers with a major in their field of instruction have higher achieving students than teachers who are teaching out-of-field (e.g., Brewer & Goldhaber, 2000; Monk, 1994; Monk & King, 1994; Rowan, Chiang, & Miller, 1997). These effects become

stronger in advanced courses in which the teacher's content knowledge is presumably more critical (Monk, 1994; Chiang, 1996). Studies suggest that there is also a significant impact of teacher experience on student achievement. Rowan (2002) found a significant relation between teaching experience in reading and math and student outcomes in elementary school, with a larger impact, as children grow older. In a study by Greenwald, Hedges, and Laine (1996), these findings have been further supported. Based on reviews of the data, the most important influence on individual differences in teacher effectiveness seems to be the teachers' general cognitive ability, followed by experience and content knowledge. Specific coursework in the material to be taught is useful, particularly in more advanced subjects. Specific, curriculum-focused and reform-centered professional development appears to be important to effective instruction.

As a part of determining the qualifications of teachers, teacher effectiveness will be the most important focus. First, project staff will be substantially more selective in the cognitive abilities that magnet teachers must have to teach in project magnet schools. Second, pre-service and in-service training will be more focused on the content that magnet teachers will be delivering and the curriculum they will be using. Third, district administrative staff will provide a much better context for magnet teachers to do their work. One important context is in the form of systems that link and align standards, curricula, assessment, and accountability.

National Board Certification – Hiring teachers for the Project EXPLORE will include soliciting experienced teachers who have received or are pursuing certification from the National Board for Professional Teaching Standards, requiring them to have completed 10 assessments reviewed by evaluators in their subject area—requirements more rigorous than those for state certification.

Practice teaching will be an important consideration when selecting project specialists and project magnet teachers. It has shown to offer teachers hands-on classroom experience to help them transfer what they learn from coursework into classroom teaching. Practical experience in the classroom affects teaching quality (Boyd et al. 2008), and Every Student Succeeds Act (ESSA) data support this finding: among teachers with fewer than five years of experience (referred to here as "new teachers"), those who had participated in practice teaching were more likely to report feeling well prepared or very well prepared for various aspects of teaching during their first year than those who had not had practice teaching.

All teachers and specialists interested in working with the new magnet programs must apply for the newly created teaching positions in all four magnet schools. The teacher applicant must not only meet stringent Louisiana teacher certification requirements, but must also have experience working in a desegregated classroom.

MSAP funds requested in this application will be used to support core curriculum and specialty teachers in the four magnet schools. Minimum requirements that must be met by all applicants for teaching positions include: (1) possession of a bachelor's degree in education with concentration at the elementary/middle/secondary school level; (2) completion of a teacher education program approved by the National Council for the Accreditation of Teacher Education (NCATE) and/or the Southeastern Association of College and Universities; (3) attainment of a minimum grade point average of 3.0 (b); (4) possession of an appropriate teaching certificate issued by the Louisiana Department of Elementary and Secondary Education; (5) passing of a pre-employment screening, including an interview by a panel of educational professionals; (6) submission of a minimum of three references related to character; and (7) successful completion of a background record check, which is a current EBRPSS requirement. In addition to the minimum requirements

stated above, teachers who wish to teach in one of the District's magnet schools must: (a) show exceptional talent in their theme area; (b) possess a minimum concentration and/or cognate of at least twenty-one hours of upper level/graduate course work in the area of specialization; (c) have at least five-years' teaching experience in a desegregated classroom; and (d) be selected by the magnet school principal and faculty from the vast pool of qualified applicants, based upon the principal's assessment of the candidate's potential for enhancing the specialty theme of the magnet school. Each must have a compelling interest in teaching children and adults of all abilities, have patience and good communication skills, are able to support and encourage others to succeed, be observant and pay attention to detail, and feel able to control a group of pupils and have confidence to maintain order within the class.

School officials will be seeking qualified **specialists** for each of the four schools that are talented and creative; work well in a team; have stamina, energy and physical fitness are versatile and adaptable are disciplined, hard-working and resilient; are reliable and punctual; and are able to accept direction. it will be helpful if the drama specialists have formal training from a professional drama school. school officials will be looking for specialists who have practical experience in their area of specialty. Included in the Appendix of this proposal are the resumes of teachers at each of the project magnet schools.

E) QUALITY OF PROJECT EVALUATION

The methods of evaluation will produce evidence of promise, include the use of objective performance measures based on the Logic Model theory of action that is clearly related to the intended outcomes of the project. They will produce quantitative and qualitative data, with a reasonable budget that is reasonable in relation to the objectives, design, and significance of the proposed project.

The methods of evaluation for this project provide for examining its effectiveness. The evaluation design follows the protocol and procedures suggested by DE for many programs funded by the organization.⁴⁵ It meets the standards by identifying the key components of the evaluation plan for both an effectiveness study and an implementation study.

Selecting an evaluator for this project with proven quality and experience is extremely important. Because an appropriate evaluation gives the grant stakeholders, district officials and the MSAP Program office an idea of the effectiveness of the funded program. The demand for accountability is needed requiring competent evaluators to determine if grant services yield a significant impact. For this grant, the selected external evaluator must provide competent ongoing feedback to program staff and funded schools so they can improve services and adjust them to meet grant expectations. In the education program evaluation field, there is no certification required to prove the quality of evaluator services. Thus, selecting an evaluator should follow specific US Department of Education (DE) and Louisiana Department of Education selection standards.

According to ED, there are four categories of acceptable evaluation services: faculty from a university, private for-profit evaluation firms, non-profit organizations, and independent contractors. The American Evaluation Association (AEA). Federal program officers want to see several organizations bid on evaluations and frown upon awarding contracts to single companies without competition. Thus, using federal Uniform Administrative Requirements and state bidding procedures, the Project Director will work with the Purchasing Office to issue bids for contractors that will be open to and promote competition.

At a minimum, the respondents must provide demonstrated experience, competence and qualifications to perform the MSAP evaluation services that will include but are not be limited to: experience regarding all federal and state project evaluation reports during the past three years with

information regarding (1) the funding entity to whom the report was delivered, (2) the name of the program being reported, and (3) the type of evaluation being provided.

Professional capabilities of the organization which include such information as the size of the enterprise, the number of employees, technological resources and capabilities, number of years in business, etc. It must also describe the corporation's performance capacity, including workload, resources and additional commitments and contracts or any other situation that may conceivably interfere with the successful completion of work contracted with the school system.

Each annual evaluation report will include under Item **b) Summary of Intervention(s)** - The evaluator will summarize the key magnet resource components and causal to include in the implementation study.

The MSAP announcement stated that educational practitioners were to use evidenced-based research to guide their decisions about the effectiveness of the funded project. The MSAP Program has developed an evaluation plan that includes objectives that measure the impact of funded activities. Within the evaluation design will be included MSAP Program objectives that address the required **four annual performance measures, which are:** (a) the percentage of magnet schools receiving assistance whose student enrollment reduces, eliminates, or prevents minority group isolation; (b) the percentage of students from major racial and ethnic groups in magnet schools receiving assistance who score proficient or above on state assessments in reading/language arts; (c) the percentage of students from major racial and ethnic groups in magnet schools receiving assistance who score proficient or above on state assessments in mathematics; and (d) the cost per student in a magnet school receiving assistance. Also included will be the **two stated long-term performance measures, which are:** (e) The percentage of magnet schools that received assistance that are still operating magnet school programs five-years after federal funding ends;

and (f) The percentage of magnet schools that received assistance that meet the State's annual measurable objectives and, for high schools, graduation rate targets at least five-years after federal funding ends.

The grant evaluation will help to build a body of evidence about the effectiveness of interventions. For the purpose of the MSAP evaluation, the term “intervention” will refer to a specific program or practice that is anticipated to affect a given outcome or set of outcomes. This will provide valuable information to the school system and to the US Department of Education.

The criteria used for assessing the rigor of MSAP project are based on the WWC evidence standards. The criteria identify four key elements for assessing whether the annual MSAP evaluations are conducted in a rigorous manner: (a) Attrition, (b) Baseline (c) Equivalence of Groups, (d) Quality of Measurement Instruments, and (e) Relevant Statistics Reported.

EBRPSS will evaluate their MSAP projects following the majority of the Department’s priority sections developed in the project’s initial evaluation planning. The priority sections are: (a) Evaluator information; (b) Summary of intervention(s); (c) Impact/effectiveness evaluation, specifically the subsections on research questions, comparison condition, study sample and how intervention and comparison groups are selected/assigned, key measures and plan for obtaining data); (d) Evaluation Questions (e) Data Collection Plan/Measures and (e) Project Conclusions. Each year, evaluations of *final-year projects that report using a comparison-group design* are reviewed against the MSAP criteria for assessing whether an evaluation is rigorous and could yield scientifically valid results. The primary source of information for the review is the final evaluation report that MSAP projects upload in Section VII of the annual performance report (APR). If additional information is required, the review team may also consult the data provided

in other sections of the APR, as well as any supplemental materials the project may have uploaded.

EBRPSS will describe the study characteristics, including a description of the intervention delivered, timeline of data collection, and assessment instruments used. Grantees should also describe how the sample is created, including how the treatment and comparison groups were selected, the number of participants at the beginning of the study, and the number remaining at the end of the study, and ensure that any changes to the sample are documented.

Comparison-Group Designs - In order to be reviewed, each annual evaluation will include a comparison between groups or a group of those in the project who experienced the intervention being studied and a similar group or groups who did not. Evaluators will not compare the findings from a treatment group to a benchmark, such as a district- wide or statewide average of student assessment scores, rather the benchmark will be scores of student groups in project magnet schools compared to scores of student groups in the randomized selected non-magnet school. However, in order to serve as a valid comparison group, the benchmark will need to be distinct from the treatment group, and will not include individuals from the treatment group.

Annual evaluations will be done with an experimental design, or as **randomized controlled trials (RCTs)**. In these evaluations, project magnet schools will be compared with randomly assigned non-funded magnet schools (e.g., teachers, classrooms, or students [by groups]), before an intervention is introduced. The use of random assignment will allow evaluators to consider the treatment and comparison groups to be statistically equivalent prior to the intervention. Since the two groups are equivalent, and the intervention is carried out with the treatment group and not the comparison group, differences in outcomes between the two groups could be attributed to the intervention—and not to pre-existing differences between the groups. When this design is

properly implemented, findings from the study will be the most rigorous evidence on the effects of interventions.

Assignment to groups will be done based on the MSAP published program objectives including: (a) enrollment in project schools compared to selected non-magnet schools including measuring the reduction of African American student racial and socioeconomic populations; grade level comparison of student groups scoring proficient or above on Louisiana LEAP (elementary) and End of Course (EOC) for Belaire High students in reading/language arts and mathematics; (b) those meeting Louisiana annual measurable objectives and, those meeting the Louisiana high school graduation rate targets at least five-years after federal funding ends.

The methods of evaluation include objective performance measures. Data will be obtained from classroom observations, student achievement data collected from existing school records, online surveys, site visits, work samples, web analytics and observations of activity in magnet classrooms, and interviews with families of magnet students and the school faculties. Online surveys will be managed using a Web-based platform such as iCohere.

At the end of each program year, an external evaluator will analyze impact and implementation of the Project EXPLORE; explore how varying levels of implementation fidelity influence hypothesized outcomes; use findings to provide feedback to EBRPSS; and document all aspects of the evaluation in its annual report.

Evaluation Questions. The evaluation will address these impact, implementation fidelity, and exploratory questions: **Impact.** (1) Does the MSAP funded magnet program participation result in: (a) improved racial diversity (2) reduction of African American racial isolation in participating magnet schools (c) increased ability of teachers' to facilitation of the Sciences and Arts theme; (d) improved performance of "at-risk" students attending magnet schools; (e) improved

performance of special needs students; (f) improved student proficiency and achievement on Louisiana assessment tests⁴⁶; (g) increased capacity for training teachers in the Sciences and Arts theme topics; (h) increased capacity of teachers to teach STEM education; (i) greater facilitation and integration of learning in the classroom; (j) greater involvement by parents in school activities; and (k) increased use of partnerships and community resources: **Implementation Reliability.** (1) the extent of thematic implementation among the participating magnet schools; (2) how magnet implementation impacts racial diversity in the schools and classrooms; and (3) the extent to which of the Sciences and Arts magnet program impacts children's desire to learn.

Outcomes. To assess quality of thematic fidelity, each spring, evaluation specialists will observe randomly selected magnet classrooms (one class per grade) at Villa del Rey Elementary, Park Forest Elementary, Park Forest Middle and Belaire High using the Individualized Classroom Assessment Scoring System (inCLASS developed by Jason T. Downera, Leslie M. Boorena, Olivia K. Limab, Amy E. Lucknerc, and Robert C. Piantaa. To assess student achievement, the specialists will collect student performance data using Louisiana's Partnership for Assessment of Readiness for College and Careers (PARCC) tests in math and English language arts (ELA). To assess increased capacity for teaching, magnet teachers and program specialists will use Louisiana's Consecutive Performance Compensation Model, which identifies: (1) **Effectiveness:** A teacher's summative performance evaluation results according to the Compass evaluation process (e.g., Ineffective, Effective: Emerging, Effective: Proficient, and Highly Effective); and (2) **Experience:** The experience of the teacher in teaching thematic subjects. To assess family perceptions of Project EXPLORE effectiveness, the evaluator will interview families by phone using surveys developed for magnet programs in St. Louis. The Magnet/Pilot Parent Questionnaire and the Parent Participation Questionnaire have been used to illustrate: (1) how parent participation dif-

ferred in magnet, other (non-magnet) public schools, and non-public schools; (2) how magnet schools were viewed as a means of desegregation; (3) how satisfied parents were with the quality of the magnet schools; and (4) what differences existed between the perceptions of black and white parents, and parents of bussed and non-bussed children.

Implementation Reliability. Evaluations of the magnet programs will use five areas for assessing implementation fidelity: compliance (reducing racial isolation, creating school-wide racial diversity, improving math and language skills), quantity (amount of time theme topics are taught, ability to address problems associated with a student's background and race, integration of Sciences and Arts into all areas of curriculum, facilitation of learning), quality of delivery (use of resources and technology), participant responsiveness (excitement of students, teachers and parents about Sciences and Arts), and program differentiation (compared to other offering and practices in other magnet and non-magnet schools). Each dimension will be examined across different schools and student populations at the end of each academic year. Specialized magnet and professional training implementation will be assessed using data from online surveys and supplemented by data from site visits, web analytics, and video observations using a Web-based platform. School district administrators will be interviewed at the end of each project year to determine if the supplemented funded resource personnel have earned the ability to be continued after the grant ends.

There is a critical need to objectively determine the level of accomplishment of programs and activities supported by the public. To assure the highest degree of objectivity, EBRPSS will employ an external person to evaluate the Project EXPLORE. The evaluation expert will track the District's commitments as outlined in the request for funding under each of performance

measures for each project year. The annual analysis will be a continuous assessment of the program and will be used to monitor implementation of project activities.

The evaluator will report the outcomes at the end of each project year. The analysis will be presented in written and oral reports to the Magnet School Director, the Superintendent's Cabinet, Magnet Principals, and the Bi-Ethnic Advisory Council. Where there are discrepancies, the evaluator will prepare recommendations to improve project performance. At the end of each project period, the evaluator will prepare and present oral and written reports that will analyze the success of the project in terms of program objectives. The summary report will be presented to the Board of Education, Superintendent's Cabinet, project staff and parent groups. The costs are reasonable in relation to the objectives, design, and potential significance of the proposed project.

This budget encompasses not only general operations, but also contains a wide-range of federal, specialty and ancillary programs designed to meet the multitude of social and educational demands placed on today's large urban school districts. The funds requested under the Magnet Schools Assistance Act will be used to augment the District's own substantial efforts in support of its various magnet schools and will be managed with the same standard of fiscal responsibility currently displayed in the District's financial dealings.

Assistance Requested- EBRPSS Public Schools is requesting a total of \$7,274,819.82 over the five-year grant cycle. These funds will be used to augment the substantial costs associated with the high-quality staff and low pupil/teacher ratios necessary for a successful magnet school program. The funds requested for the first year of the grant will be allocated between the four component magnet schools as shown below.

Budget Requests for the Four New Magnet Programs

School	Total
Belaire Creative Science and Arts Magnet High School	\$2,662,811.26
Park Forest Creative Science and Arts Middle Magnet School	\$2,497,069.64
Villa del Rey Creative Science and Arts Magnet Elementary School	\$2,476,924.10
Park Forest Creative Science and Arts Magnet Elementary School	\$2,771,025.31
Program Administration	\$3,149,634.85
Total Direct	\$13,557,465.17
Indirect	\$1,374,130.44
Total Five Year Request	\$14,931,595.61

The total of \$2,662,811.26 MSAP funds requested for the first year represents is approximately 21% of the total cost associated with the effective operation of all the district's magnet schools.

The total number of positions requested is formula driven based on the projected enrollment anticipated for the 2017-2018 school year and specific pupil/teacher ratios as approved by the U.S. District Court that recently approved the district's application for Unitary status.

While each school requires substantial dollars for supplies, equipment and other non-salary items, the EBRPSS Public School District considers the maintenance of a high quality staff the cornerstone of a successful magnet school and an objective more closely correlated with the intent of the Magnet Schools Assistance Act than non-salary items. The requested funds will supplement the \$43,692,463 in resources allocated by the District and State over the five year period for personnel, materials, supplies, equipment and other necessary support for these four magnet schools. The positions associated with the MSAP assistance request are a mixture of specialty and core curriculum classroom teachers. While the magnet schools are primarily driven by their

specialties, a comparably strong staff of teachers dedicated to the thorough instruction of core subject matter is essential to effectively integrate the school theme. For 2016-2017, the District will have spent \$51,897,241 from local funds to effectively operate and support all of the current magnet schools operating as part of the most recent Court order before the district was declared Unitary. The total five-year magnet operational budget for the four schools included in this application is projected to equal \$14,931,597. The \$2,831,930 requested for the first grant year represents an additional 24% over the District's 2017-2018 anticipated district operational costs for these four schools.

The District is dedicated to continuing its extensive commitment to the operation and implementation of the magnet school concept as a vital tool in the delivery of high quality education.

While the lack of the requested \$14,931,597 in assistance over the five-year period would not prevent the district from setting up the magnet programs to meet the Court mandates, it would mean that these four new magnets would not have the quality that can be attained under the MSAP grant.

Endnotes

¹ Defined more fully in under “Desegregation Section” in this document, legislation authorizing a “breakaway” school system within the geographic area served by East Baton Rouge Parish was approved by a Louisiana constitutional amendment in the early 1990's authorizing school systems to be carved from the East Baton Rouge Parish School System.

² Department Of Agriculture. Food and Nutrition Service, Special Supplemental Nutrition Program for Women, Infants and Children (WIC): Income Eligibility Guidelines. Federal Register / Vol. 77, No. 57 / Friday, March 23, 2015 / Notices Authority: 42 U.S.C. 1758(b)(1). Dated: March 19, 2012.

³ State MFP funding is projected to decrease by approximately \$4.6 million when compared to the Original 2016-2017 General Fund Budget. This revision reflects the Legislature’s General Appropriation Bill, Act 17, of the 2016 Regular Session of the Louisiana Legislature. This bill provides funding for the Minimum Foundation Program (MFP) formula, as defined in Senate Concurrent Resolution (SCR) 55 of the 2014 Regular Session of the Louisiana Legislature. This revision includes the first and second mid-year adjustments for students counted on October 1, 2016 (38,960 students) and February 1, 2017 (39,039 students) as compared to the original student count on February 1, 2016 of 39,886 students.

⁴ According to the US Department of Education, “risk” factors include: 1) low maternal education, 2) welfare dependency (as a marker of family poverty), 3) having only one parent in the home, and 4) having parents whose primary language is not English. As the number of family “risk” factors increase, children experience smaller gains from the start of kindergarten through the end of their elementary and middle grade schooling. High school students who are “at-risk” can be defined as students in grades 9-12 who have risk characteristics that increase their chances of failing in or dropping out of school. These included being from: 1) a single parent household, 2) having an older sibling who dropped out of high school, 3) changing schools two or more times other than the normal progression (e.g., from elementary to middle school), 4) having C's or lower grades between sixth and eighth grades, 5) being from a lower socioeconomic status (SES) family, and/or 6) repeating a grade.

⁵ SmartLab™ is a fully-integrated learning environment where everything from the furniture and technology to curriculum and assessment work together to support hands-on, minds-on learning. It’s a place where personalized learning and intrinsic motivation engage students of all ages, interests and abilities.

⁶ USDE, National Center for Education Statistics, Common Core of Data (CCD), "Public Elementary/Secondary School Universe Survey," 2012–13.

⁷ Emily Lane. East Baton Rouge Parish median income up -- so is poverty, U.S. Census Bureau data show. NOLA.com. September 18, 2015.

⁸ While 75 percent of white students in the class of 2014 graduated on time, only 57 percent of African American students graduated. Likewise, only about one half of male students from minority backgrounds graduated on time.

⁹ The South Central Collaborative for Equity is one of 4 federally funded equity assistance centers that provide technical assistance and training to school districts in Louisiana.

¹⁰ The Center will provide technical assistance and training related to the meanings and changes to the definition of “desegregation.” For example; the Secretary is amending the definition of “sex desegregation” to explain that DE interprets sex discrimination under Title IX to include discrimination based on transgender status, gender identity, sex stereotypes, and pregnancy and related conditions. Also, the proposed regulations would add a definition for “special educational problems occasioned by desegregation” to clarify the term.

¹¹ High schools (9-12): Half of the school grade is based on student achievement on state assessments and the other half on graduation performance. (25 percent is attributed to student performance on the ACT or WorkKeys; 25 percent is attributed to student performance on End-of-Course assessments; 25 percent is attributed to the strength of diploma index, which rewards achievements like Advanced Placement and International Baccalaureate exam credit; and 25 percent is attributed to the cohort graduation rate, or the percentage of students who started 9th grade and graduated on-time within four years.

¹² Thornburg, David. 2008. “Why STEM Topics are Interrelated: The Importance of Interdisciplinary Studies in K-12 Education.” The Thornburg Center for Space Exploration, p. 3. <http://www.tcse-k12.org/pages/stem.pdf>.

¹³ Hanover Research. K-12 STEM Education Overview, DC. www.hanoverresearch.com.

¹⁴ Melek Demirel and Yelkin Diker Coskun, Case Study on Interdisciplinary Teaching Approach Supported by Project Based Learning. Educational Research Association the International Journal of Research in Teacher Education; 2010. P.35.

¹⁵ See Appendix – MC2 STEM Instructional Design Process.

¹⁶ Archer, E. et al. (1989). Partnerships for Learning: School Completion and Employment Preparation in the High School Academies. New York: Academy for Educational Development.

¹⁷ Garcia, E. E. (1990). An Analysis of Literacy Enhancement for Middle School Hispanic Students through Curriculum Integration. Miami, FL. (ED 331 008).

¹⁸ Fogarty, Robin. Ten Ways to Integrate Curriculum. Educational Leadership, p61-65 Oct 1991.

¹⁹ Marzano, R.J. (1991). Fostering thinking across the curriculum through knowledge restructuring. Journal of Reading, 34(7), 518-525.

²⁰ Boaler, J. (2002). Learning from teaching: Exploring the relationship between reform curriculum and equity. Journal for Research in Mathematics Education, 33(4), 239–258.

²¹ Dr. Melek Demirel, Dr. Yelkin Diker Cokun. Case Study on Interdisciplinary Teaching Approach Supported by Project Based Learning. Educational Research Association, The International Journal of Research in Teacher Education, 2010. <http://ijrte.eab.org.tr/1/2/mlkdmrl.pdf>

²² Successful K-12 STEM Education: Identifying Effective Approaches in Science, Technology, Engineering, and Mathematics.” 2011. National Research Council, pp. 8-12. <http://www.nap.edu/catalog.php?record: ID-13158>

²³ eLearning classes (both fully online and hybrid) provide an opportunity for students to plan their learning around their high school schedule, while having the opportunity to participate in the rigorous demands of college courses.

²⁴ The Louisiana State University (LSU) College Readiness and Dual Enrollment Program was created to help prepare students for success in college.

²⁵ The Early Start Program at Southern University's program that allows high school students (juniors and seniors) to enroll in college courses for credit prior to high school graduation.

²⁶ James William Mobley, "The Academy Movement in Louisiana," in *Education in Louisiana*, ed. Michael G. Wade (Lafayette: University of Southwestern Louisiana, 1999), 80, first published in the *Louisiana Historical Quarterly* 30 (1947): 2-21.

²⁷ Brush, T., & Saye, J. (2008). The Effects of Multimedia-Supported Problem-based Inquiry on Student Engagement, Empathy, and Assumptions About History. *Interdisciplinary Journal of Problem-Based Learning*, 2(1).

²⁸ Krajcik, J., Soloway, E., Blumenfeld, P., & Marx, R. (1998). Scaffolded technology tools to promote teaching and learning in science. In C. Dede (Ed.), *ASCD 1998 yearbook: Learning with technology* (pp. 31-45). Alexandria, VA: ASCD.

²⁹ Ibid. page 14.

³⁰ The Louisiana Career Planning Guide is a collaborative effort between the Louisiana Community and Technical College System (LCTCS), the Louisiana Department of Education (DOE), the Louisiana Board of Regents (BOR), and the Louisiana Workforce Commission (LWC).

³¹ Independent research studies show that PLTW students outperform their peers in school, are better prepared for post-secondary studies, and are more likely to consider careers as scientists, technology experts, engineers, mathematicians, healthcare providers, and researchers compared to their non-PLTW peers. Van Overschelde, James P. (Spring 2013) PLTW Students More Prepared for Higher Education. Texas State University. *American Journal of Engineering Education*, 4(1). Tai, Robert H. (2012).

³² East Baton Rouge Public School System 2015-2016 General Fund Budget. Approved June 18, 2015 – Page 113.

³³ Information about Melissa O'Reilly's experiences were taken from an article by Noel King from an article titled "Middle class families fight over East Baton Rouge schools" found on <http://www.marketplace.org/2014/03/14/education/middle-class-families-fight-over-east-baton-rouge-schools>. March 14, 2014.

³⁴ Thomas, J.W. (2000) A Review of Research on Project Based Learning. Retrieved 8, June from: http://www.bobpearlman.org/BestPractices/PBL_Research.pdf.

³⁵ Fullan, M. G. (1999). *Change Forces: The sequel*. Philadelphia, PA: Falmer Press.

³⁶ Holmes Group (1996). *Tomorrow's Teachers*. East Lansing, MI: Holmes Group.

³⁷ Ravitch, D. Lesson plan for teachers. *The Washington Post*, 10 August 1998, p. A17.