



Museums for America

Sample Application MA-10-19-0223-19
Project Category: Lifelong Learning

Natural History Museum of Los Angeles County

Amount awarded by IMLS:	\$250,000
Amount of cost share:	\$842,500

Attached are the following components excerpted from the original application.

- Abstract
- Narrative
- Schedule of Completion

Please note that the instructions for preparing applications for the FY2020 National Leadership Grants for Museums program differ from those that guided the preparation of FY2019 applications. Be sure to use the instructions in the [FY2020 Notice of Funding Opportunity](#) for the grant program and project category to which you are applying.

Abstract

The Natural History Museums of Los Angeles County respectfully request a \$250,000 Museums for America grant from the Institute of Museum and Library Services (IMLS) to design and fabricate a La Brea Tar Pits Mobile Museum. In each year of its operation, this traveling exhibition will enable 7,500 kindergarten through 2nd grade students in underserved schools across Los Angeles County to take part in hands-on scientific inquiry and to begin a life-long connection to the natural world. Most schools served are in the Los Angeles Unified School District where more than 80% of the student population identify as Latino or African American and the need for increased access to supplemental science instruction outside of the traditional classroom setting is acute. In research about science education, the formation of a STEM “identity” is cited as a chief factor in whether students remain curious about science and consider a STEM-related career. It is even more important for young women and people of color who remain under-represented in these fields. The La Brea Tar Pits Mobile Museum will enable some of L.A. County’s youngest learners to begin to develop a STEM-identity and practice 21st Century Skills that will empower and inspire further science learning and exploration.

The on-going excavations at La Brea Tar Pits and their corresponding fossil collections inform the “big idea” around which student learning will take place: “Discoveries at La Brea Tar Pits help bring Ice Age Los Angeles to life.” Developed with input from student and teacher focus groups, the Tar Pits Mobile experience will unfold in three distinct phases over the course of one hour. The first “discovery” phase begins as soon as the class enters the Mobile Museum, which recreates a La Brea Tar Pits excavation site in present-day Los Angeles. Students will explore the environment, ask questions, and work both independently and in groups to excavate and discover their own fossil in the simulated tar pits. During the second phase, students will closely “observe” their fossil and through the process of scientific investigation learn to classify, sort, and eventually make predictions about what creature their fossil came from, and more broadly, what life was like for their creature in Ice Age Los Angeles. The third and final phase will feature a culminating activity where students transform the space from present-day to Ice Age Los Angeles and, through imaginative play, become the animals they have investigated. Early childhood research supports the programming’s educational framework, drawing from the best of observational- and play-based models. Students initially explore and observe, then engage in a period of play that allows them time to process, reflect, and retain.

The impact of the La Brea Tar Pits Mobile Museum will go beyond student learning to include opportunities for teacher professional development as well. In the weeks leading up to the school residency, a Mobile Museum educator will meet with classroom teachers for a workshop and program orientation to the Tar Pits. This service will prepare teachers and students for the Mobile Museum experience with pre-residency classroom activities and lesson plans aligned with Next Generation Science Standards. The Mobile Museum will also be deployed at community parks, festivals, and other special events on weekends and during the summer, for a total of 15,000 L.A. County youth and families served annually.

IMLS grant funding will help support the design, fabrication, and installation of a La Brea Tar Pits Mobile Museum over the course of a two-year grant period beginning in October 2019 and culminating in October 2021 with a final report to IMLS. Matching funds will be sought from the institution’s significant base of individual donors as well as corporate, foundation, and government sources. Teams from the Exhibitions and Education Departments will play a prominent role in the Mobile Museum’s development and its on-going operations. Exhibition development will be tracked by the project manager using benchmarked milestones and educational goals will be measured through a formative and summative evaluation process. This project embodies the institution’s strategic goal to expand its role as a museum “of, for and with L.A.” by meeting the needs of this early elementary audience with local, authentic, important, and active scientific inquiry.

PROPOSAL NARRATIVE

Project Justification

The Natural History Museums of Los Angeles County (NHMLA) respectfully request a \$250,000 Museums for America grant from the Institute of Museum and Library Services (IMLS) to design and fabricate a La Brea Tar Pits Mobile Museum, which will provide immersive science learning opportunities for kindergarten through second grade students at schools throughout Los Angeles County. The La Brea Tar Pits Mobile Museum will be joining the institution's current Mobile Museum fleet of two converted 50-foot tractor-trailers: 1) the Archeology Experience enables third through fifth grade students to experience simulated archaeological dig sites once inhabited by Chumash peoples in the Santa Monica Mountains; and 2) the Ocean Experience enables middle and high school students to experience a simulated deep-sea exploration of the San Pedro Channel in a submersible. Lesson plans and learning activities are layered before, during, and after the one-hour experience inside the Mobile Museum to achieve impacts that are both significant and memorable. With the completion of the La Brea Tar Pits Mobile Museum, the institution will have mobile outreach programs serving the complete kindergarten through twelfth grade educational pipeline.

Part of the Natural History Museums family, La Brea Tar Pits and Museum is the world's only active paleontological excavation site located in an urban area. The preserved bones of countless entrapped animals, many now extinct, who wandered into its sticky asphalt seeps as early as 55,000 years ago now make up the most complete record of late-Ice Age fossils in the world. These remarkable collections, numbering over three million specimens and counting, tell the story not only of giant sloths, dire wolves, and saber-toothed cats but also of the tiny insects, plants, and shells that were equally well preserved in the asphalt. Collectively, the fossils open up a window into the impact of ecological change over time. With many deposits still being unearthed today, visitors can witness new discoveries being made right outside museum walls. With the addition of a third Mobile Museum, the institution will be able to introduce 20 more schools, representing approximately 7,500 students, to the fascinating story of the Tar Pits every year. When combined with after-school programs, community outreach at parks, festivals, and other special events on weekends and during the summer, a total of 15,000 participants will be served annually by a third Mobile Museum.

What need, problem, or challenge will your project address, and how was it identified: Most of the students served by the La Brea Tar Pits Mobile Museum will be in the Los Angeles Unified School District (LAUSD), the second-largest school district in the United States. More than half of all 735,000 LAUSD students (391,354 to be exact) were designated low-income in 2018.¹ A 2016 STEM Education Coalition study notes that supplementing K-12 education with scientific instruction outside of the traditional classroom setting is critical for future success, yet extracurricular scientific resources are rare, especially for populations predominantly served by public school districts.² Unfortunately, the LAUSD's chronic budget shortfalls result far too frequently in a lack of science learning opportunities for students and many face significant economic and geographic barriers that prevent visits to museums and other science-related sites.

Although the Natural History Museum and La Brea Tar Pits and Museum both provide free science-based field trips to students and their teachers, the cost of bus transportation can be prohibitive. To overcome this barrier, the institution began bringing its learning environments directly to the school site through its Mobile

¹ [https://achieve.lausd.net/site/handlers/filedownload.ashx?moduleinstanceid=44410&dataid=62825&FileName=2018-2019 Comparative Title I School Summary Data 2-22-2018.pdf](https://achieve.lausd.net/site/handlers/filedownload.ashx?moduleinstanceid=44410&dataid=62825&FileName=2018-2019%20Comparative%20Title%20I%20School%20Summary%20Data%202-22-2018.pdf)

² <http://www.stemedcoalition.org/wp-content/uploads/2016/04/Case-for-Informal-STEM-Education-Final-April-2016-1.pdf>

Museum program in 1992. The program currently serves 45 schools each year, but demand far exceeds capacity. Last semester, only 20% of the school requests for Mobile Museum visits could be accommodated.

The impact of the La Brea Tar Pits Mobile Museum will go beyond student learning to include opportunities for teacher professional development. In the weeks leading up to the Mobile Museum residency, an NHMLA educator will meet with classroom teachers for a 45-minute workshop, which introduces the Tar Pits as a unique and important scientific resource. This orientation and workshop also includes distribution of pre-residency classroom activities and lesson plans aligned with Next Generation Science Standards. Teacher survey results conducted at the end of past workshops and residencies report that Mobile Museum preparatory sessions are a valuable resource and provide sought-after training in science-based instruction. After the pre-residency training, teachers are able to introduce students to information about the types of animals living in Southern California thousands of years ago, how the animals became trapped in the asphalt at the Tar Pits, how fossils are excavated today, as well as concepts such as food webs and predator/prey relationships. These activities also present an opportunity to create excitement and anticipation among students about the Mobile Museum experience to come.

The one-week residency begins with a brief assessment of student understanding of pre-visit materials by NHMLA staff before leading students outside to the Mobile Museum. The group will pause in front of the truck-long mural on the outside of the Mobile Museum depicting present-day scenes of the Tar Pits and surrounding park, and students will make observations about what they see. Entering the trailer, students will encounter an interior completely transformed into an asphalt-seep excavation site at La Brea Tar Pits. They will see wall murals depicting scenes of modern day Los Angeles, be attracted to climb on interactives made of highly tactile materials, and hear a city soundscape in the background. Students will be encouraged to explore the environment, examine objects, and raise questions about what they discover. After this period of exploration, students will be introduced to the tools and materials for investigating the asphalt deposit and begin readying the site for excavation by pulling out retractable boards that create walkways around the pits. After this activity, students will reach into the pits to extract fossil replicas from the deposit and mark the location of their findings in the pit.

After all students have a fossil to examine, they will begin to sort and classify their discoveries by finding other students with fossils that match theirs. Working in small groups, students will be prompted with questions about what they observe before they hypothesize about what the fossil discoveries reveal about Ice Age Los Angeles and the animals that lived there. Students will closely examine their fossil for clues to its size, for example, or whether the shape of the teeth reveals anything about its diet. After each group comes up with a description of their mystery animal, they will again be prompted to move throughout the space. Opening up drawers and cubbies, and holding up their fossils to sculpted models of animals on the walls, they will compare their fossils' characteristics to these examples until they triumphantly identify the creature that matches their fossil: either a saber-toothed cat, giant sloth, or dire wolf.

The final portion of the learning experience will feature a culminating activity where students transform the space from present-day to Ice Age Los Angeles and, through imaginative play, become the animals they have investigated. As the lighting subtly changes and sounds of the city fade away, students will begin to feel transported to the past. Educators will guide the children as they physically transform the trailer into the kind of environment that their scientific investigations have uncovered. They will pull levers to make buildings and roads disappear, hang leaves on towering trees, and dress up and act like the animals that once populated this wild world, for example, howling like a wolf or stalking like a saber-toothed cat. Exiting the Mobile Museum on

the opposite side of the trailer from where they entered, students will observe a mural that depicts the same view of the Tar Pits, only now it is Ice Age instead of modern-day L.A.

The La Brea Tar Pits Mobile Museum's design and educational concepts are centered on the developmental phase and learning styles of children aged five to seven, concepts that are exemplified in the numerous opportunities the children will be given to independently process information, to collaborate with peers, and to make sense of the world through imaginative play. This approach is supported by pioneering work in the field of early childhood education by psychologist Loris Malaguzzi who found that the environment in which students experienced learning played as important a role as what was being “taught.” Malaguzzi posits that an ideal space possesses flexibility that allows for students to touch and interact to discover for themselves.³ Further supporting the efficacy of play-based learning, early child development researcher Vivian Gussin Paley notes, “The more complex the thought, the greater is the child’s need to view its meaning through play and find the characters and situations that bring ideas to life.”⁴ La Brea Tar Pits Mobile Museum programming draws from the best of observational- and play-based models, providing initial exploration and observation followed by a period of play that allows students time to process, reflect, and retain.

Educational activities are designed to engage students across the three domains that education psychologist Dr. Benjamin Bloom proposed promote higher forms of learning:⁵ *cognitive*, growth in mental skills or knowledge; *affective*, growth in feelings or emotional areas; and *psychomotor*, growth in manual or physical skills. In the Mobile Museum, students manipulate a variety of materials and share their experiences (cognitive). During the transformation of the space from modern-day to Ice Age Los Angeles, students use fine and gross motor skills to transform the space by pulling levers, opening doors, and behaving like animals (psychomotor). By working in groups during the excavation experience, students will learn from each other while navigating complex interpersonal dynamics (affective). In addition to these theoretical approaches, the La Brea Tar Pits Mobile Museum also fulfills Next Generation Science Standards for this age group which require that students, “develop an in-depth understanding of content and develop key skills—communication, collaboration, inquiry, problem solving, and flexibility—that will serve them throughout their educational and professional lives.”⁶

NHMLA staff arrived at the concepts underpinning the La Brea Tar Pits Mobile Museum experience through several thoughtful explorations with education stakeholders and museum colleagues. The project team conducted two rounds of teacher focus groups, aided by an evaluation consultant, at a nearby primary center located within the Slate-Z Promise Zone. (The Natural History Museum’s Exposition Park location is at the epicenter of a federally-designated Housing and Urban Development Promise Zone in South Los Angeles.) At the first focus group, the teachers were asked to share feedback about possible content areas, student-working styles, and any potential pitfalls. At the second focus group, teachers were asked to share feedback about proposed designs and experiences. Both rounds were critical in shaping the next phase of program and exhibition design. The team also held a series of three charrettes or brainstorming sessions. The first session was with staff members from the Research and Collections department, the second was with Education staff who develop and facilitate programs for students, and the third with exhibition designers, content developers, and fabricators. Each group offered different perspectives and, by combining those with teacher feedback, the team was able to identify key content areas and experiences.

³ Cathy Hall et al. *Loris Malaguzzi and the Reggio Emilia Experience* (London: Bloomsbury Academic, 2010).

⁴ Vivian Gussin Paley. *A Child’s Work: The Importance of Fantasy Play* (Chicago: Chicago University Press, 2004), 57.

⁵ Benjamin Bloom, ed. *Taxonomy of Educational Objectives* (New York: David McKay Co. Inc., 1956).

⁶ *Next Generation Science Standards: For States, By States* (Washington DC: The National Academies Press, 2013).

Who or what will benefit from your project: The La Brea Tar Pits Mobile Museum will primarily serve kindergarten through second grade students and teachers throughout LA County by providing informal, out-of-classroom science experiences. In science education studies, the formation of a STEM “identity” is cited as a chief factor in whether students remain curious about science and consider a STEM-related career. The development of a functioning STEM identity is even more important for young women and people of color, as these groups are under-represented in and occasionally even discouraged from studying STEM-related fields.⁷ The Mobile Museum directly supports this high-need group; most participating schools are in LAUSD where over 81% of students are African-American or Latino. Drawing on the interview-based studies of educational researchers Adam Maltese and Robert Tai, interest in the sciences is usually formed before the 7th grade.⁸ Although there are other factors, such as family and schoolteachers, that help foster an interest in science, student interest is strengthened through informal experiences outside of the traditional classroom.⁹ The La Brea Tar Pits Mobile Museum will enable some of L.A. County’s youngest learners to begin to develop a STEM-identity and to connect the wonders and discoveries of science to their own life.

Strategic Plan Alignment: The La Brea Tar Pits Mobile Museum exemplifies NHMLA’s strategic vision developed in 2017 in collaboration with an outside consultant and advisory groups from across the museum and resulting in three goals. 1) To expand its role as a "museum of, for, and with LA," the institution is striving to welcome, understand, reflect, and cultivate meaningful relationships with its local communities. School communities, in particular, are one of the largest and most important audiences that NHMLA serves and it is this audience who will benefit from the Mobile Museum experience. 2) Through the La Brea Tar Pits Mobile Museum, the institution will advance its goal to “create a new interdisciplinary model for understanding and connecting to urban nature.” Young audiences will have a hands-on opportunity to learn about and create a sense of connection to the nature in their neighborhood within urban L.A. 3) Strengthen and activate our research and collections to create and communicate new knowledge about our world. NHMLA’s collection of 35 million objects and specimens is an unparalleled global resource that must be studied, enhanced, protected, and shared. The institution’s new Mobile Museum will bring one very unique aspect of these collections—the Ice Age specimens found at La Brea Tar Pits—to life for students.

Project Work Plan

What specific activities, including evaluation and performance measurements, will you carry out?

Phase 1: Planning and Concept Development (complete)

NHMLA’s institutional knowledge about mobile museums has grown over three decades as educators worked with teachers and students to refine the program. The most recently developed of the two existing Mobile Museums, the Ocean Experience, was the recipient of the 2017 California State Superintendent of Education’s Award for Excellence in Museum Education, which recognizes outstanding achievements in California K-12 museum programs. At the same time, staff at La Brea Tar Pits have been successfully crafting activities and narratives that connect with visitors of all ages for many years. The first nine months of this project were spent conducting charrettes and teacher focus groups, and developing the exhibition and program based on the input of this deep expertise.

⁷ Heidi B Carlone, Angela Johnson. “Understanding the science experiences of successful women of color: Science identity as an analytic lens.” *Journal of Research in Science Teaching* 57, no. 8 (2007).

⁸ Adam Maltese, Robert Tai. “Eyeballs in the Fridge: Sources of Early Interest in Science.” *International Journal of Science Education* 32, no. 5 (2010).

⁹ *Learning Science in Informal Environments: People, Places, and Pursuits* (Washington DC: The National Academies Press, 2009).

Phase 2: Design Development Prototyping (before grant period begins)

During Phase 2, the outcomes of the planning phase will be tested in a series of prototyping sessions with educators, students, and museum visitors. Physical interactives and environmental/furniture components will go through an iterative design process and then material testing to ensure usability and durability. The prototyping will take place at both La Brea Tar Pits and at the Natural History Museum in a gallery that targets a similar age range. Some of the key design challenges to be addressed during this phase include:

- 1) What fossil characteristics are most effective for students to use to identify their animal, and to compare with others' fossils so they can easily organize themselves into groups?
- 2) What is the most compelling level of detail and fabrication method for the sculpted animal models on walls, and what feedback do the models give as students successfully match their fossils (e.g. light, sound, haptic, etc.)?
- 3) What types of animal costume components will be easiest to put on and wear during play-acting?
- 4) How will the asphalt seep setting transform between modern L.A. and Ice Age L.A., and how do the students manipulate the excavation's physical elements including boards, string, and set dressing?
- 5) How can scenic elements be best designed to play double duty as storage or furniture (e.g. trees, rocks etc.), to hold up under constant use, and to support the weight of children?
- 6) How can this experience be designed to be inclusive for all students?

Once solutions have been developed, these program components will then be tested with teachers and classrooms of students using design prototypes to ensure that the cognitive and experiential goals are being met. Several narrative storylines based on themes such as entrapment, family unit, and animal behaviors will be tested with students and teachers to evaluate the level of engagement and comprehension of each. The focus groups and prototyping process comprises the formative evaluation and will lead to the direction for exhibition design and lesson plan development going forward, as well as provide benchmarks for the summative evaluation at the project's completion.

Phase 3: Final Exhibition and Program Design (grant period begins)

The exhibition's physical elements as well as its educational program materials will be modified based on evaluation outcomes, and the resulting designs will be drawn, refined, and finalized during Phase 3. Designers will consider how each prototypical component will work as part of a whole to fit comfortably into the allotted space, communicate the appropriate affective and sensory goals, while successfully immersing students in the narrative themes. The outcome of this phase will be a full set of 3D drawings of the truck interior and each exhibition component as well as a first round of material testing, electrical, lighting, and paint plans.

Phase 4: Exhibition Build Documents

During Phase 4, all of the details necessary to build the exhibition will be documented. The approved set of 3D drawings will be annotated to show how, and using what methods, materials, and hardware, each component will be constructed. The outcome of this phase will be a complete set of documents detailing every aspect of fabrication as well as demolition of the existing trailer interior, electrical, lighting, and paint plans. Progress on lesson plans and related educational materials continues in tandem during this phase.

Phase 5: Fabrication and Installation of Exhibition

As the production documents are finalized, the project and installation managers will coordinate to order materials, hire and oversee outside contractors, as well as establish fabrication and installation schedules. Production will be complete once all of the components have been fabricated, installed, and tested. The first students will experience the Mobile Museum several weeks after, so that technicians can ensure that all interactives, media, and general operations are running smoothly and education staff has finalized curricula.

Phase 6: Initial Launch and Summative Evaluation

The Mobile Museum project will be evaluated on two tracks: 1) progress on its physical fabrication will be tracked using benchmarks set by the museum's Exhibition team, and 2) educational goals and impacts on student learning will be measured through a comprehensive summative evaluation and report upon completion of the exhibition, including the Performance Measure Statements requested by IMLS.

What is your project's maturity level (i.e. exploratory, piloting, scaling, or mainstreaming)?

With the addition of a third Mobile Museum to its existing fleet, this project is in the Scaling Phase. Mobile Museum educators are combining their years of hands-on experience with fresh perspectives from new partners, both internal and external, to develop, design, and fabricate the La Brea Tar Pits Mobile Museum. Designed for kindergarten through second grade students, the Mobile Museum will also be flexible in its use so that, like the Ocean and Archeology Experience Mobile Museums, it will have the ability to also serve a wide range of audiences of all ages at neighborhood parks and other events during the summer. The combined impact of the Mobile Museums program since its launch in 1992 is 700,000 served.

What are the risks to the project and are they accounted for in the work plan?

This is a new target age group for an NHMLA Mobile Museum. As with any original learning experience, there is the risk that students may not understand or connect with the content in the way it was intended. By allocating ample time and funding to test interactive elements and evaluate programs with students and teachers during each phase of development, these risks can be mitigated. Another risk is the limited space within the trailer, however, the institution's staff has successfully designed and built two other modified trailer programs with comparable space limitations. Prototyping will be instrumental to address this potential risk so that the development team can adapt the design of either the exhibition environment or the curriculum by incorporating feedback from teachers and student observations in the final phases.

Who will plan, implement, and manage your project?

The overall project will be supervised by Vice President of Education and Programs Su Oh and Vice President of Exhibitions Gretchen Baker. Implementation of the new La Brea Tar Pits Mobile Museum experience will be led by a project manager aided by an interdisciplinary team including Director of Education Molly Porter, Exhibition Developer Sarah Crawford, and Mobile Museum Manager Nicole Duran. The project manager will monitor the timeline and all activities using the prototyping process and testing as key progress milestones, and oversee the project schedule, budget, contracts, vendors, and installation as well as insuring that clear lines of communication are maintained between internal and external stakeholders. The interdisciplinary team, internally, will offer feedback and advice on how to execute and refine the project's concepts and aid in testing these designs with teachers, students, and museum visitors. Each member of the team will advocate for their particular area of expertise as the design and fabrication phases of the project move towards completion in tandem with curriculum development. In particular, La Brea Tar Pits Assistant Curator Emily Lindsey will provide input on scientific content. Director of Evaluation and Museum Impact Beth Katz will track student engagement at project launch to determine whether the experience is having the intended results. The resumes attached with this application provide detail about the team's qualifications.

When and in what sequence will your activities occur?

Phase 1: Planning and Concept Development (complete), *April 2018 – December 2018*

Phase 2: Design Development Prototyping (before grant period), *January 2019 – September 2019*

Phase 3: Final Exhibition and Program Design, *October 2019 – January 2020*

Phase 4: Exhibition Build Documents, *February 2020 – June 2020*

Phase 5: Fabrication and Installation of Exhibition, July 2020 – March 2021

Phase 6: Initial Launch and Evaluation, April 2021 – October 2021

What time, financial, personnel, and other resources will you need to carry out the activities?

Time: Grant period begins in October 2019 and culminates in October 2021 with a final report to IMLS.

Financials: Matching funds will be sought from NHMLA's significant base of individual donors as well as corporate, foundation, and government sources through grant funding and sponsorship opportunities. The continued operation of the La Brea Tar Pits Mobile Museum will become part of the museum's annual operating budget and benefit from funding generated by annual fundraising strategies.

Personnel: Internally, the Exhibitions and Education Departments are leading the Mobile Museum development efforts. NHMLA will use external resources to fabricate, install, and evaluate the experience.

How will you track your progress toward achieving your intended results?

The Mobile Museum's physical fabrication will be tracked using benchmarks set by the museum's Exhibition team. Educational goals and impacts on student learning will be measured through a comprehensive summative evaluation and report upon completion of the exhibition. In this report, a professional evaluator will survey teachers about the effectiveness of the program using the Performance Measure Statements requested by IMLS, while impacts on student learning will be evaluated using observational methods. Evaluators will track the children's behavior and engagement within the exhibition environment, such as hand raising, quality of comments and questions, and level of interaction with materials, and apply these to an established rubric incorporating cognitive, affective, and psychomotor domains of learning.

How and with whom will you share your project's results?

The process that leads to the creation of this new mobile experience—from planning to production—will be documented so that NHMLA can refine steps for future truck development. Photographs, sketches, outlines, and other process documents will remain available for internal and external use. These documents as well as the evaluation report will be shared at formal and informal meetings, conferences, and ongoing communications with groups that may include Mobile Laboratory Coalition, National Education Outreach Network, American Association of Museums, Los Angeles Unified School District, Los Angeles County Office of Education, and a local and national network of museum colleagues.

Project Results

Measuring Agency Level Goals: The IMLS' goal to promote life-long learning will be achieved through the increased opportunities that 7,500 of L.A. County's youngest learners will have to take part in hands-on scientific inquiry and to begin a life-long connection to the natural world. In every year of operation, kindergarten through second grade classrooms at 20 underserved schools will have access to a one-week Mobile Museum residency inspired by La Brea Tar Pits. The impact increases to 15,000 annually when the number of participants at community parks and other special events is included.

Intended Results: Because of the Mobile Museum experience, students will develop 21st century skills and understand the "big idea" around which all of the program activities unfold: "discoveries at La Brea Tar Pits help bring Ice Age Los Angeles to life."

Tangible Results: The tangible results of this project will be the fabrication and operation of a new Mobile Museum based on the discoveries found at La Brea Tar Pits and the summative evaluation report that will track the project's reach and effectiveness. This report will be shared with IMLS staff and other museum colleagues interested in mobile museum programs as noted above.

Sustaining Benefits: The La Brea Tar Pits Mobile Museum's expected lifetime of service is 10-15 years.



NATURAL HISTORY MUSEUM OF LOS ANGELES COUNTY

MOBILE MUSEUM TIMELINE

SCHEDULE OF COMPLETION

PHASE 1

4/1/2018 – 12/1/2018

PLANNING & CONCEPT DEVELOPMENT

- Educational program & exhibit focus groups
- Planning documents
- Initial exhibit design renderings
- Initial educational program design

PHASE 2

1/1/2019 – 9/30/2019

DESIGN DEVELOPMENT & PROTOTYPING

- Exhibit interactive selection using focus group findings
- Exhibit & program prototyping with students, teachers and visitors
- Formative evaluation

PHASE 3

10/1/2019 – 1/31/2020

FINAL EXHIBIT & PROGRAM

- Preview
- 3D Renderings showing exhibit design methods, material and hardware
- Educational program piloting with students and teachers

PHASE 4

2/1/2020 – 6/30/2020

EXHIBIT BUILD DOCUMENTS

- Plans for demolition of existing Mobile Museum
- Final floorplan and elevations
- Construction drawings

PHASE 5

7/1/2020 – 3/31/2021

FABRICATION & INSTALLATION

- Demolition & prep interior and exterior
- Fabrication
- Installation
- Curriculum finalized

PHASE 6

4/1/2021 – 10/31/2021

LAUNCH & EVALUATION

- Program launch
- Summative evaluation
- Report submitted to IMLS including Performance Measure Statements

TWO-YEAR GRANT PERIOD