



Museums for America Grants

Sample Application MA-246052-OMS-20
Project Category: Lifelong Learning

Houston Zoo

Amount awarded by IMLS:	\$250,000
Amount of cost share:	\$300,408

The project description can be viewed in the IMLS Awarded Grants Search:
<https://www.ims.gov/grants/awarded/ma-246052-oms-20>

Attached are the following components excerpted from the original application.

- Narrative
- Schedule of Completion

Please note that the instructions for preparing applications for the FY2021 Museums for America grant program differ from those that guided the preparation of FY2020 applications. Be sure to use the instructions in the Notice of Funding Opportunity for the grant program and project category to which you are applying.

NARRATIVE**See Them, Save Them:** Implementing an Action-Inspiring Interpretive Plan for the Houston Zoo's Galápagos Islands Exhibit

I. Project Justification

The Houston Zoo is building a first-of-its-kind Galápagos Islands exhibit that uses best practices in exhibit design and interpretation to educate visitors about ocean conservation and inspire them to take conservation action. We seek grant support from IMLS to execute our interpretive plan for the exhibit, which – in its thoughtful and inclusive planning, adherence to exhibitry best practices, and alignment with Zoo-wide master, strategic, and interpretive plans – will be a new path forward for the Zoo and an exemplar for other zoos.

The Galápagos Islands were chosen as the subject for a new exhibit for several reasons. As described below, our strategic and master plans (and zoo best practices) guide us to organize exhibits around landscapes rather than individual species or taxons. Our conservation mission further guides us to highlight high-biodiversity, highly-threatened ecosystems that make a compelling conservation story – and no biodiversity story could be more compelling than Darwin's legendary Galápagos. Our strategic plan also guides us to align our collection with our conservation work, showcasing species we protect in the wild. The Zoo's collection includes Galápagos giant tortoises and we have a long history of support for Galápagos conservation; today, we work closely with a youth conservation club, giant tortoise researchers, and the National Park in the Galápagos as well as providing veterinary care for rescued sea turtles here on the Gulf Coast. Lastly, the theme offered an opportunity to build a new home for our sea lion family, which needed more space. Sea lions are one of the Zoo's most engaging and popular species, and giving them a dramatic new home facing the Zoo's entry plaza would draw guests immediately into the Zoo's conservation message.

The Galápagos exhibit will take visitors along a rocky volcanic coast where sea lions laze in the sun and pelicans paddle about, across a hillside meadow where giant tortoises lumber through the grass, and through a rock fissure into a darkened viewing area with underwater views of the sea lion pool and a deep sea reef teeming with sharks, rays, corals, and tropical fish. Interpretive elements like sculptures and signage complete the landscape and tell the story of delicate marine ecosystems in the Galápagos and in Texas, the threats wildlife face, and how field conservationists are working to protect marine wildlife. As visitors exit the animal exhibits through a darkened lava tunnel they emerge into the final chamber, a call to action gallery, filled with engaging and interactive interpretive elements that encourage visitors to help wildlife in specific, manageable ways like reducing their consumption of single-use plastics.

What need, problem, or challenge will your project address, and how was it identified? Our project focuses on the challenge of ocean pollution and the need for human behavior change to mitigate it. But in order to maximize the project's impact on the knowledge and behaviors of our two million visitors (and, through their actions, ocean plastics), the need we address more immediately is for our exhibits to reflect best practices in informal science interpretation and conservation education.

The issue of plastic ocean pollution has surfaced in recent years as a major environmental threat, and for good reason: Estimates suggest that there are over 150 million tons of plastic in the ocean already, and that at our current dump rate of about one garbage truck full each minute, there will be one ton of plastic for every three tons of fish in the ocean by 2025, reaching 1:1 by 2050.¹ Plastic entanglement makes it difficult for marine wildlife to swim, eat, breathe, care for offspring, and escape predators, while ingestion can lead to internal injury, poisoning, and starvation.² As of 2016, the number of animal species affected by marine debris was more than 800 and growing, with more than 500 of those species known to have experienced ingestion or

¹ The New Plastics Economy: Rethinking the future of plastics. World Economic Forum, Geneva, 2016. http://www3.weforum.org/docs/WEF_The_New_Plastics_Economy.pdf

² Laist D.W. (1997) Impacts of Marine Debris: Entanglement of Marine Life in Marine Debris Including a Comprehensive List of Species with Entanglement and Ingestion Records. In: Coe J.M., Rogers D.B. (eds) Marine Debris. Springer Series on Environmental Management. Springer, New York, NY

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entanglement.³ The vast majority of marine debris is single-use plastic consumer items including straws, drink bottles, shopping bags, and food wrappers and containers. Keeping single-use plastics out of the ecosystem through proper disposal and recycling is one of the best-known tactics for mitigating this environmental harm: 80% of Americans have access to municipal recycling and half say that they recycle at least 75% of eligible items.⁴ But estimates based on waste streams tell a different story: the EPA puts this number closer to 34%.

With their enormous global audiences, zoos and aquariums are in a unique position to engage people in wildlife-protecting actions like recycling. As zoos have transitioned over the decades from menageries to wildlife protectors and conservation educators, a growing body of research shows that zoos influence visitors' biodiversity understanding and their awareness of pro-diversity action they could take.⁵ They may even set visitors on a course to learn and do more about conservation.⁶ But simply having and exhibiting animals is not enough to achieve these impacts. In a 2010 literature review of 30 years of zoo research and 300 years of zoo history, the authors identified a number of characteristics of high-impact zoos and their exhibitry, interpretation, and education programs. These zoos hold audiences' attention with interactive elements and human interpreters. They design inclusive interpretive material that can reach multiple ages, learning styles, cultures, abilities, and levels of knowledge simultaneously. They design for eye-to-eye viewing and incorporate animal encounters to inspire visitors' emotional connection to animals – a strong vector for learning and inspiration to action. They showcase natural behavior in naturalistic environments, enhancing authenticity and easing visitors' concerns about animals' wellbeing. They leverage charismatic megafauna to inspire care for whole landscapes and ecosystems, thereby extending protections to less popular species like reptiles and invertebrates. They draw attention to visitors' local environment, strengthening their connection to “backyard nature” as well as the world's biodiversity hotspots. And they teach specific, manageable actions visitors can take to help wildlife.⁷

At the Houston Zoo, wildlife conservation is at the core of our mission – to connect communities with animals, inspiring action to save wildlife. Suffusing our strategic plan, conservation informs everything we do, from exhibits; to our financial and in-kind support for more than 50 conservation projects in 25 countries; to our plastic bag-, bottle-, and straw-free concessions (which has even influenced Coca-Cola to pilot greener packaging); to our staff grant program empowering any employee to design and pursue a conservation project; to our award-winning school program that engages students for a full school year to – among other things – protect their schools' mascots in the wild. Central to all of these programs are our six Take Action Initiatives: everyday actions any Houstonian can take to help wildlife, like recycling paper, making their homes and schools pollinator-friendly, and choosing sustainable seafood. Of the six, our initiative to reduce single-use plastic waste takes center stage.

Though our conservation commitment and culture have made us an acknowledged leader among zoos, there is one program that still has great strides to make, and it is the program that reaches every visitor: exhibit design. The Zoo was founded in 1922 and operated as a city department (with a city department's budget) until 2003. While we have improved many individual exhibits, overall, there are vestiges of bygone eras of zoo design and purpose, including an exhibit layout arranged taxonomically, dissociating animals from their ecosystems. In 2016, the Zoo's board of directors adopted a new master plan that will guide the transformation of our grounds and exhibits over the next 20 years. A capital campaign currently underway supports the exhibit's construction

³ Marine Debris: Understanding, Preventing and Mitigating the Significant Adverse Impacts on Marine and Coastal Biodiversity. Technical Series No.83. United Nations Secretariat of the Convention on Biological Diversity, Montreal, 2016. <https://www.cbd.int/doc/publications/cbd-ts-83-en.pdf>

⁴ American Chemistry Council survey, 2014. <https://www.americanchemistry.com/Media/PressReleasesTranscripts/ACC-news-releases/New-Survey-Half-of-Americans-Say-They-Recycle-75-Percent-or-More-of-Recyclable-Items.html>

⁵ Moss, Jensen, & Gusset (2014). *A global evaluation of biodiversity literacy in zoo and aquarium visitors* [white paper]. World Association of Zoos and Aquariums, 2014. https://www.academia.edu/6285529/A_Global_Evaluation_of_Biodiversity_Literacy_in_Zoo_and_Aquarium_Visitors

⁶ Jensen, Moss, & Gusset (2017). “Quantifying long-term impact of zoo and aquarium visits on biodiversity-related learning outcomes,” *Zoo Biology*, 36(4), 294-297.

⁷ Routman, E., Ogden, J., & Winsten, K. (2010). Visitors, conservation learning, and the design of zoo and aquarium experiences. In D. G. Kleiman et al. (Eds.), *Wild animals in captivity: Principles and techniques for zoo management* (2nd ed., pp. 137–150). Chicago: The University of Chicago Press.

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through generous community support. With this proposal, we seek IMLS's support to execute the exhibit's interpretive plan, applying best practices described above to maximize the impact of our community's investment in their zoo.

Who or what will benefit from your project? The primary beneficiaries will be our two million annual visitors, whose demographics closely align with that of greater Houston (named by the Kinder Institute as the most diverse urban area in the US). Annual visitorship includes more than 140,000 schoolchildren, 90,000 of whom visit at no cost under our program of free field trips for Houston district and Title 1 schools, and many others who take advantage of Free Tuesdays and other accessibility initiatives. A formal front-end evaluation was conducted earlier this year, providing essential visitor input to guide the development of key messages; informal message testing, prototyping, and other formative evaluation will gather further visitor input as interpretive elements are developed and finalized. If the exhibit succeeds at inspiring action, visitors' conservation actions will benefit marine animals, coastal communities affected by marine debris, and conservationists working to protect marine species. We also hope other zoos and aquariums will benefit from our experience and evaluation.

How will your project advance your institution's strategic plan? The Zoo's master plan and strategic plan were developed during the same period and are closely aligned. All eight of our strategic priorities are supported by various capital projects. The priorities that are best supported by this project are:

- **Develop a "Saving Wildlife" Brand** – Exhibits are one of the main ways the Zoo will share conservation information, showcase conservation partnerships, and invite guests to take conservation action. Visitors will associate Zoo visits with saving wildlife. Tactics under this priority that address interpretive elements include: Connect exhibits and programs to regions/species of conservation focus. Incorporate evaluation into exhibit planning to measure message impact. Focus on single-use plastics as the headline Take Action initiative. Incorporate stories about individual zoo animals and our partners in the field to create emotional connections with our visitors through storytelling.
- **Create Meaningful Experiences** – Exhibit design and interpretive plans are being designed to incorporate elements like close-up viewing, animal encounters, interactive items, multimedia experiences, and expert staff and volunteers. Studies demonstrate that these elements, as well as increased time in exhibits and positive feelings about the experience overall, correlate with greater learning and behavior change. Tactics under this priority that address interpretation include: Incorporate elements like keeper talks that bring animals closer to guests to strengthen emotional connections. Develop interpretation scripts, talking points, and trainings around new and renovated exhibits. Develop a robust, unified plan and schedule of keeper talks, animal presentations, and staff and volunteer interpreter presence at exhibits.

How will your project address the goals of the Museums for America program? By educating our audience about animals, oceans, and conservation; by giving them the opportunity to not only learn, but to put their learning to use through plastic recycling and other direct action; by creating and executing a thoughtful, inclusive, and research-informed interpretive plan that speaks to diverse audiences and maximizes our community's investment in the Zoo's master plan; and by setting the standard for the Zoo's future exhibits and zoo-wide interpretive planning; this project strengthens the Zoo's ability to serve its public. Our project falls under the **Lifelong Learning** category, aiming to increase environmental literacy in visitors of all ages. Furthermore, in addressing the often politically fraught issue of conservation, the Zoo is uniquely able to leverage its role as a beloved community institution and joyful family experience to offer gentle, pro-environment information and calls to action that visitors of all political stripes can trust.

II. Project Work Plan

What specific activities, including evaluation, will you carry out? When and in what sequence?

Project Groundwork: The project for which we request support – the execution of the interpretive plan for our Galápagos exhibit – falls within a larger project plan for the exhibit's design, planning, construction, opening,

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and evaluation. Planning for the exhibit began in 2015 (as part of the Zoo-wide strategic planning process that resulted in our strategic, master, and business plans). The exhibit is due to open in the summer of 2022 and the Galápagos project will conclude with the exhibit's evaluation at the end of 2022. The following groundwork has been laid for powerful exhibit interpretation:

- *Adding full-time interpretive planning manager to Zoo staff.* While the Houston Zoo, like many zoos, has historically created interpretive elements piecemeal for each exhibit, our mission to inspire conservation action in our visitors compels us to maximize the effectiveness of our exhibitry program. We felt it essential to bring on an interpretation expert who could develop zoo-wide plans, distill key messages, craft effective and inclusive content, and make the most of our investment in evaluation. Erica Kelly joined the team in 2018.
- *Front-end evaluation.* In 2019, Erica worked with the Zoo's evaluation partners to establish a baseline of Houston Zoo visitors' knowledge, attitudes, and needs related to the Galápagos exhibit and its themes. The team looked at questions like "What might motivate guests to care about conservation issues they are further removed from?" and "To what extent do guests understand how personal actions can support wildlife in the Galápagos?" Evaluators collected information through two focus groups as well as informal interviews of 205 randomly selected Zoo guests. Findings and recommendations are included as an attachment.
- *Interpretive planning.* Using the evaluation findings as a starting place, Erica worked with interpretive consultants from Gecko Group and members of the exhibit design, animal care, conservation, and education teams to create an interpretive plan outlining what the visitor's experience of the exhibit should be like, what interpretive elements would be needed to create that experience, where they should go, and what they should say. The process produced a list of needed elements, a schematic of their placements, and the exhibit's essential messages. A draft brief summarizing the plan is attached.
- *Exhibit and collection planning.* Without an exhibit and collection, there could be no interpretation to execute. Since joining the Zoo, the interpretive planning manager has collaborated closely with the design, construction, and animal care teams to ensure interpretation meets exhibit goals and vice versa.

Between the submission of this application and the beginning of the project period, Erica and Gecko Group will work together to draft the text and images to be featured in interpretive elements. Following best practices for informal science interpretation, content will be written to a sixth grade reading level, a level that is high enough to convey rich information but low enough to be accessible to English language learners, groups reading together, and parents reading and quickly parsing information for children. Word counts will be kept short. Once finalized, 100% of text will be translated into Spanish.

Project Activities: With this groundwork laid, our project begins: Executing the interpretive plan.

Interpretive Script Elements: Design Development Phase - September 2020 to March 2021

During this phase, Gecko Group designers will use the design principles and script produced in the planning phase to draft interpretive panels, signs, multimedia elements, and interactive/touch elements. Erica and the interpretive team will user test, iterate, and refine these drafts, including bringing prototypes to Zoo grounds for guest interaction and feedback. Once text has been refined and finalized within its graphical context, translations will be completed, and the team will approve final drafts. The performance benchmarks for this phase are 1) positive feedback/outcomes for the final iterations of elements that went through user testing, and 2) on-time completion of 100% of drafts.

Interpretive Script Elements: Production and Fabrication Phase - April 2021 to March 2022

During this phase, the Zoo will work with partners Tellepsen, SHR and Gecko Group to award a fabrication contract. Gecko will create shop drawings for the fabricators from the approved drafts. Elements will be fabricated and delivered by the contractor, checked and approved by the interpretive team, and installed by the construction team. The performance benchmark for this phase is on-time and on-budget fabrication and installation of all interpretive elements.

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Sculptures from Arizona artist Mark Rossi are scattered throughout the Zoo's new and upcoming exhibits, and they provide durable, touchable, camera-friendly and beautiful interactive exhibit elements. The interpretive plan calls for such sculptures in the Galapagos and we hope to secure Mark again for the commission. Commissioning will begin in September in order to have sculptures delivered by the March installation period.

Live Interpretation Phase – March to May 2022

Interaction with a volunteer or keeper is strongly correlated to visitor learning and engagement. During this phase, Erica will work with the education team and volunteer manager to develop an interpreter's guide to key messages, including scripts and questions leveled to different age groups. (An interpreter's guide to the Zoo's Texas Wetlands exhibit is attached as a model.) Erica will work with the volunteer, conservation, education and animal care teams to arrange trainings and schedule a strong program of keeper talks, volunteer shifts, and educator appearances in preparation for the exhibit's scheduled opening on Memorial Day weekend of 2022. Following the opening, our schedule of activities includes three months of live interpretation.

Summative Evaluation – July to September 2022

Following the exhibit opening, Erica will work with the team's evaluation partners to conduct a formal summative evaluation. The evaluation is yet to be designed but will likely include best-practice exhibit evaluation tactics like tracking and timing visitors' movement through the exhibit to determine how well elements engage them and exit interviews to assess learning.

What is your project's maturity level? Because this approach to exhibit interpretation is new to the Houston Zoo but grounded in our successes in conservation and education, designed following research-supported best practices in zoo exhibitry, and guided by an experienced museum interpretation professional, we would place the project in the *prototyping/piloting* phase. We expect to learn lessons in the process that we can apply to this exhibit's improvements and future exhibit designs as well as share with the rest of the zoo community.

What are the risks to the project and have you identified ways to monitor or mitigate risk in the work plan?

Risk: Interpretive element drafts/designs do not have the intended outcome with readers/viewers. ***Mitigation:*** Several months of worktime are allocated to drafting, testing and iterating before designs are fabricated.

Risk: Fabrication of interpretive elements is not completed on schedule. ***Mitigation:*** Fabrication and installation are due to be completed two months before the exhibit's scheduled opening, so there is a cushion against a fabrication delay affecting the timeline to open the exhibit.

Risk: Interpretive designs and fabrications go over budget. ***Mitigation:*** A maximum spend on design and fabrication was included in Gecko Group's contract with the Zoo. The fabrication contract will be awarded via a bidding process.

Risk: The interpretive planning manager or another key participant is unable to see the project through to completion. ***Mitigation:*** All activities within our plan are undertaken collaboratively with consultants or a team of staff members, which will help assure continuity should a participant have to drop out.

Risk: Exhibit completion is behind schedule overall. ***Mitigation:*** The contractors involved in completing this exhibit have track record of on-time and on-budget work on previous Zoo projects. Nevertheless, a number of factors like weather, city permitting, or material unavailability could delay construction. The interpretive team may need to adjust its installation schedule if construction is delayed, but ultimately, the project's intended results are not contingent upon the exhibit opening its doors on Memorial Day.

Who will plan, implement, and manage your project? The Zoo has assembled a highly qualified team to complete the Galápagos project. Two Zoo personnel lead the project: ***Erica Kelly***, manager, interpretive planning, leads the development of the interpretive plan and execution including design and content development. Erica has nearly two decades of experience in informal science education in some of the country's best-known museums, including ten years' experience in exhibition development. ***Trisha Crowe, PMP, LEED Green Associate***, project manager, manages the Galapagos exhibit build overall. Trisha has extensive

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experience in construction project management both in and out of zoos and has recently managed exhibit projects at Monterey Bay Aquarium and the National Aquarium.

A number of Zoo departments including *conservation, education, volunteers, graphics, facilities, and animal teams* will contribute to the execution of the interpretive plan, supporting content development/drafting, fabrication, installation, the interpreter guide, interpreter training, and evaluation. The Zoo is led by **Lee Ehmke, president and CEO**, who began his Zoo career in exhibit architecture and design at Wildlife Conservation Society (New York City-area zoos and aquariums) before joining the Minnesota Zoo as CEO. He is a recent past president of the World Association of Zoos and Aquariums (WAZA). Master plan implementation is overseen by **Sheryl Kolasinski, FAIA, LEED Green Associate, chief operating officer**, who previously managed capital projects for Houston's Menil Collection and the Smithsonian Institution.

A number of contractor relationships are essential to the project's success.

- The Zoo has partnered with **Studio Hanson / Roberts (SHR)** on the design and execution of the master plan and exhibit plans. SHR is a design and architecture firm specializing in zoos and aquariums and their award-winning work can be seen at leading zoos around the world.
- The Galápagos construction contract was awarded to **Tellepsen Builders** in a competitive process. Tellepsen is one of our region's preeminent construction firms and their portfolio includes the \$100 million renovation of Houston's Compaq Center to become Lakewood Baptist Church.
- The Zoo has partnered with **Gecko Group** on interpretive planning and execution. Gecko Group's portfolio includes a number of zoo projects including the AZA Exhibit of the Year award-winning Penguin Coast exhibit at the Maryland Zoo.
- Finally, formal evaluations will be led by **Inform Evaluation & Research**. Founders Brian Johnson, Ph.D., and Joy Kubarek, Ph.D. have worked with the Houston Zoo to evaluate exhibits and conservation programs since 2016 and completed the front-end evaluation for the Galápagos exhibit in 2019.

How does the makeup of the project team and/or partners and collaborators provide an opportunity for the project to benefit from diverse perspectives, shared networks, and best practices? As described above, the staff and collaborators on this project are sought-after leaders in exhibit design and construction, each contributing specialized expertise in zoo exhibits, museum interpretation, environmental graphic design, and other pieces of the puzzle. Our Zoo team adds further specialized expertise to the mix: Erica works closely with Melanie Sorensen, Senior Director of Conservation Education, Peter Riger, Vice President of Conservation & Education, and Kevin Hodge, General Curator of Animal Operations, and their teams on content/message development. Kevin has developed extensive knowledge of the Houston Zoo's animals and the landscapes they represent over his long career managing many of the Zoo's animal departments and vet clinic. Mike Concannon, assistant curator of aquarium and sea lions, contributes specialized knowledge of marine environments and wildlife. Peter leads the Zoo's conservation team, which specializes in community-based conservation and behavior change with particular expertise in community-based social marketing, a highly effective behavior change methodology piloted by Doug-McKenzie Mohr. The Zoo's education team includes age-group specialists in early childhood through adult education. Since Melanie joined the team in 2016, she has led the department in a research-informed, evaluation-driven transformation, first developing an outcomes framework for zoo-based conservation education and then redesigning the department's programming around these outcomes.

How will collaborations you have proposed be structured in a way that is equitable and mutually beneficial in order to strengthen your project? Most of the collaborations in the project are contractor-client relationships with assumptions, expectations, deliverables and timelines outlined in mutually agreeable contracts.

What time, financial, personnel, and other resources will you need to carry out the activities? To execute our interpretive plan, we must first, of course, have the exhibit, and all the resources that go into it: funds, plans, etc.

How will you track your progress toward achieving your intended results? On-time deliverables are the primary way we will track progress toward completing the project. During the production phase, the team will

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conduct user testing and other formative evaluation; though informal, this will be another indicator of progress. The summative evaluation will help us determine whether results (learning/behavior change) were achieved.

How and with whom will you share your project's results? The summative evaluation report will be shared with internal stakeholders. Results will be disseminated to the field online at <https://www.informalscience.org/> and presented at conferences that may include the Association of Zoos and Aquariums (AZA) annual conference and the American Alliance of Museums (AAM) annual meeting.

III. Project Results

What are your project's intended results and how will they address the need, problem, or challenge you have identified? **Problem:** Single-use consumer plastics, like food containers and water bottles, end up in the ocean and harm wildlife. **Intended result:** After visiting the Galápagos exhibit, visitors feel motivated to help marine wildlife and are aware of actions like plastic recycling that they personally could take to help wildlife.

Challenge: The Houston Zoo's current exhibitry does not reflect best practices in interpretation. Our challenge is to create best-practice-informed interpretive elements that maximize the Galápagos exhibit's effectiveness at communicating conservation information and inspiring behavior change. **Intended Result:** Summative assessment indicates that visitors aware of how actions affect wildlife and motivated to adopt or change behaviors based on that awareness. The successful project offers a replicable template/workplan for future exhibits (ours and others') and a contribution to the development of our zoo-wide interpretive plan.

How will the knowledge, skills, behaviors, and/or attitudes of the intended audience change as a result of your project? If our interpretive plan is successful, visitors will walk away with an increased understanding of the Galápagos ecosystem and its wildlife, marine ecosystems generally, the interconnectedness of these systems, threats to these systems/wildlife, and how individuals can help protect these systems/wildlife. They will feel a greater connectedness to marine species and ecosystems, empathy for marine animals, and motivation to take conservation action. They will have the skills and knowledge to adopt environmentally responsible behaviors, such as remembering their reusable grocery totes, checking whether their seafood is sustainably sourced, or cleaning and sorting recyclable plastics at home, and to take other conservation actions like signing a petition, attending a beach cleanup, or sharing their knowledge with others.

What barriers might there be for others who may wish to learn from and/or adapt your results in developing their own projects? We are eager to share the results of our summative evaluation and will make every effort to disseminate our results to the zoo, aquarium, and museum community. A potential barrier is that organizations with smaller projects/budgets may think our results are not relevant to their projects if they don't feel that specialized interpretive planning staff and consultants are in their budgets.

What data will you collect and report to measure your project's success? We will track outputs in order to report whether we successfully completed deliverables on time and on budget. Summative evaluation design, which will include target indicators and data collection tactics, has not yet begun, but we anticipate that we will collect data on how visitors spent time in the exhibit and on their knowledge and attitudes after their visit.

What tangible products will result from your project? The tangible product of this project will be the Galápagos exhibit's interpretive elements, which may include panels, signs, interactive elements, and multimedia elements. Additionally, the project will produce a summative evaluation report.

How will you sustain the benefit(s) of your project? The Galápagos exhibit will be open to Zoo visitors for its usable life (30-40 years) and interpretive elements are expected to be in place for 5-10 years, benefiting millions of visitors over these periods. As dictated by our agreement with the City of Houston, the Zoo will commit funds to a designated maintenance endowment for this exhibit and all new exhibits, ensuring the exhibit will remain in good condition. The experience and results we gain from this process will inform future interpretive plans, benefiting visitors to those exhibits and the wildlife they are designed to protect.

SCHEDULE OF COMPLETION

Contextualizing Project Timeline Within Overall Exhibit Timeline

	Overall Galapagos Exhibit Timeline	Project Timeline: Executing the Exhibit’s Interpretive Plan
	2015 - 2016 <ul style="list-style-type: none"> • <i>Houston Zoo master plan (including Galapagos exhibit) developed and adopted</i> • <i>Contracts secured for exhibit architects and designers</i> 	
	2017 - 2018 <ul style="list-style-type: none"> • <i>Site plan and collection plan refined (ongoing)</i> • <i>Project manager and interpretive planning manager added to Zoo full-time staff</i> • <i>Contracts secured for construction, graphics/interpretation, and evaluation consultants</i> • <i>Capital campaign planned and launched</i> 	
	Jan. 2019 – Aug. 2020 <ul style="list-style-type: none"> • <i>Site plan/collection plan refined (ongoing)</i> • <i>Front-end evaluation conducted</i> • <i>Infrastructure & site prep begun</i> • <i>Interpretive plan completed</i> • <i>Interpretive messages/text finalized</i> 	
Grant Period of Performance	Sep. 2020 – Mar. 2021 <ul style="list-style-type: none"> • Capital campaign completed • Site plan and collection plan finalized • Exhibit construction begun 	Interpretive Script Elements: Design Development Phase <ul style="list-style-type: none"> • Interpretive graphics (text in layout) drafted, reviewed/audience-tested, refined, and finalized • Translations finalized • Other interpretive elements (interactive displays, multimedia, etc.) prototyped, tested, refined, finalized Interpretive Elements: Bronze Sculptures <ul style="list-style-type: none"> • Sculptures Ordered and Approved
	Apr. 2021 – Mar. 2022 <ul style="list-style-type: none"> • Construction continues • Animal introductions begun • Plant installation begun 	Interpretive Script Elements: Production/Fabrication Phase <ul style="list-style-type: none"> • Fabrication contract secured • Interpretive elements fabricated and installed Interpretive Elements: Bronze Sculptures <ul style="list-style-type: none"> • Sculptures Delivered and Installed
	Apr. 2022 – Dec. 2022 <ul style="list-style-type: none"> • Construction, plant installation, and animal introductions completed • EXHIBIT OPENS – May 2022 	Live Interpretation Phase <ul style="list-style-type: none"> • Interpretive guide developed • Trainings held for exhibit interpreters (volunteers, keepers, education staff) • EXHIBIT OPENS – May 2022 • Summative Evaluation Completed