



**Oregon Zoo Bond
Citizens' Oversight Committee**
Conservation Hall, Education Center, Oregon Zoo
Wednesday, November 13, 2019
3 to 5 p.m.

Oregon Zoo Bond
Citizens' Oversight
Committee Meeting
Nov. 13, 2019
Agenda

AGENDA

ITEM	ACTION	ANNUAL REPORT	LEAD	TIME
A. Welcome / Introductions • Agenda overview • Introductions	Review		Susan Hartnett	3:00
B. Minutes of Sept. 18, 2019, Committee meeting	Approve		Susan Hartnett	3:05
C. Monthly Project Status Reports 1. Polar Passage/Primate Forest/Rhino Habitat 2. Percent-for-Art – No report 3. Interpretive Experience – No report 4. Close-out project: Tree mitigation – No report	Discuss	Page 29, 40	Jim Mitchell and Kate Giraud	3:10
D. Program Status and Financial Information 1. Administrative Costs annual update 2. 2018 Report recommendations update • Staffing update • Integrated Conservation Action Plan update Kathayoon Khalil, Conservation Impact Mgr. • Interpretive Framework (Draft)	Discuss	Page 40 Page 45 Pages 7-11 Page 15 Page 31	Sarah Keane and Caleb Ford Sheri Horiszny, with Kathayoon Khalil via video	3:25
E. Program and Projects Schedule	Discuss		Sarah Keane	3:45
F. Oversight Committee reports 1. Annual Report for calendar year 2019 • Report Subcommittee update 2. Committee final report in 2022 3. Equity Report	Discuss	Page 22	Susan Hartnett	3:50
G. Zoo and Oregon Zoo Foundation Update • Polar bear conservation update • Zoo staffing update	Discuss	Page 29	Don Moore and Julie Fitzgerald	4:25
H. Open Discussion/Questions			Susan Hartnett	4:50

Upcoming meeting dates – Wednesdays, 3 to 5 p.m. in Conservation Hall, Education Center, Oregon Zoo

Feb. 12, 2020* (*Proposed move to Feb. 19, 2020, to be discussed.)

May 13, 2020

Sept. 9, 2020

Nov. 18, 2020* *Change in schedule to 3rd Wednesday due to holiday

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**Oregon Zoo Bond
Citizens' Oversight Committee**

Oregon Zoo – Conservation Hall

Wednesday, Sept. 18, 2019

3 to 5 p.m.

MINUTES

MEMBERS PRESENT

Emma Stocker (Vice Chair)
Dan Aja
Laurel Brown
Heidi Goertzen
Javier Mena
Chin See Ming
Katherine A. Porras
Dick Stenson
Karen Weylandt

AFFILIATION

Emergency Management, Portland State University
Banfield Pet Hospital
Facilities and Property Management, Portland State University
Becker Capital Management
Portland Housing Bureau, City of Portland
Gilbert Levy Bennett
Meyer Memorial Trust
Retired healthcare executive; community volunteer
Retired from Providence Health & Services

MEMBERS ABSENT

Susan Hartnett (Chair)
Naomi Bishop
Daniel Hauser
Nan Heim
Jill Mellen
Robyn K. Pierce
Kevin Spellman
Christine L. Taylor

AFFILIATION

Spectator Venues, City of Portland
California State University, Northridge (professor *emerita*)
Oregon Center for Public Policy
Nan Heim Associates; Oregon Zoo Foundation Board of Directors
Research Biologist
Pierce, Bonyhadi & Associates
Spellman Consulting, Inc.
Miller Nash Graham & Dunn

GUESTS

None

AFFILIATION

ELECTED OFFICIALS AND STAFF

Shirley Craddick
Julie Fitzgerald
Caleb Ford
Kate Giraud
Sheri Horiszny
Sarah Keane
Jim Mitchell
Don Moore
Joel Morton
Linnea Nelson
Heidi Rahn
Marcia Sinclair

Metro Councilor
Oregon Zoo Foundation Executive Director
Metro Assistant Finance Director
Oregon Zoo Bond Project Manager
Deputy Director of Care, Connection and Conservation
Zoo Administration and Finance Director
Oregon Zoo Bond Construction Manager
Oregon Zoo Director
Metro Senior Attorney
Oregon Zoo Bond Program Coordinator
Metro Asset Management and Capital Planning Program Director
Oregon Zoo Marketing

A. Welcome / Introduction

Emma Stocker, Vice Chair of the Oregon Zoo Bond Citizens' Oversight Committee ("Oversight Committee" or "the Committee"), opened the meeting at 3:02 p.m., and members and guests introduced themselves. Chair Hartnett is out of town. Vice Chair Stocker reviewed absences and the resignation of Cynthia Haruyama in May due to health limitations. Heidi Rahn is now serving as Metro interim deputy chief operating officer while Andrew Scott serves as Interim COO. Metro is recruiting for a new COO and welcomes candidate referrals. Scott Cruickshank, Metro general manager of visitor venues, is the current director overseeing the zoo bond construction while Ms. Rahn serves in her interim role.

B. Approval of May 8, 2019, Oversight Committee meeting minutes

Since it had been four months since the May 8 meeting, Vice Chair Stocker reviewed some highlights. Members approved the minutes of the May 8, 2019, Oversight Committee meeting.

C. Monthly Project Updates

1. **Polar Passage/Primate Forest/Rhino Habitat (PPR)** – Construction manager Jim Mitchell reported on the construction progress to date, and displayed photos of the Polar Passage/Primate Forest/Rhino Habitat (PPR) project (included with the record). The project is going well and the bond team is keeping a close eye on costs. Despite receiving building permits, bond staff continue to have permitting challenges due to requirement changes at the City of Portland. As an example, for a simple submittal change of adding a window they are requiring that the bond staff substitute hundreds of pages in the 500-page drawing set. In the past this was only required on the primary page where the change is featured.

The project has run into some unsuitable soil at Polar Passage and Primate Forest, which will increase costs. The State of Oregon has a new gross receipts tax that will add an estimated \$300,000 cost to the project. The project has 10 percent contingency (based on the total project cost), which is adequate to cover these increases.

The team determined that the chimp moat wall will have to be raised higher than originally expected. In developing the plans, it was calculated how high chimps can jump, but not that they can jump 17 feet horizontally or at an angle. The team thought they would have to raise about 40 feet of the moat wall, but it turns out they may have to raise almost all of it. The Association of Zoos and Aquariums' recommendations for chimp habitats have not changed. The team had planned \$200,000 for this, but learned today that the existing moat wall is structurally unsound to support an extension and may need to have a whole new inside wall added at an estimated cost of \$650,000. Staff are looking at alternate solutions, and the team is carefully monitoring project change events.

Mr. Mitchell displayed a photo of the constructed rhino blind, and explained that rhinos do not like to be in front of large crowds of people, so the blind will allow visitors to see the rhinos without the rhinos seeing the visitors. The blind was built using an existing shelter, with a new wall and protective Plexiglas added. Near the blind, the habitat will have a timed feeder, a drinker, a mud wallow and place for keepers to drop treats for the rhinos. Members asked about whether noise from the visitors behind the blind would be an issue for the rhinos, but staff indicated that noise from behind the blind should not be an issue, and not much different than visitor noise in other areas of the habitat.

The concrete walls for the Polar Passage and Primate Forest projects are being precast in Harrisburg, Oregon. The creative design team worked to not have just gray concrete walls, and worked with an innovative company from the Netherlands to apply a liner on top the cast wall to make a pattern in the concrete. A release agent gets down to the next layer of concrete to create a pattern, so the pattern is permanent. The primate day room and some outside walls will have the patterns. Polar Passage walls will have patterns that look like cracked ice. The Interpretive package for Polar Passage focuses on the partnership among bears, zoo staff and the United States Geological Survey, and the habitat is designed to highlight the research and partnership component. Displays will include cast paws of Conrad and Tasul, polar bears formerly at the zoo who were essential to the research conducted.

2. **Percent-for-Art** – Project manager Kate Giraud gave an update on the commissioned artwork for PPR, created by the artist team of Edwin and Veronica Dam de Nogales. The cast aluminum sculptures of the Melting Ice Bear and two polar bear benches were safely shipped from Spain to Seattle, and trucked from there to the Expo Center for safe storage. Ms. Giraud displayed photos of the shipment arrival. Due to the height of the sculpture, the crate was open and allowed for the sculptures to be seen through the packing. Peggy Kendellen, public art manager with the Regional Arts and Culture Council, verified that the sculptures were in good condition. The artwork will be stored until approximately October 2020 when it will be installed at the zoo. The footings for the sculptures have already been planned in the design.

Councilor Shirley Craddick asked about transporting the artwork to the zoo. Bond staff will coordinate transport, and the artists will be on site for the installation. Dr. Don Moore noted the world-class potential for this artwork and suggested planning for media coverage. The zoo will develop a communications plan, and the artwork will be installed before the opening of Polar Passage.

One member asked about Nora, the young polar bear previously at the Oregon Zoo. She is now at the Hogle Zoo in Utah, recovering well from her leg injury and getting more access to the outdoors.

D. Program Status and Financial Information at a Glance

Sarah Keane, zoo finance and administration program director reviewed the **financial summary**. She reminded members that in February 2019 the Metro Council allocated all of the funds, with a \$800,000 contingency, \$600,000 of which is not bond funds (allowing more flexibility for spending).

Caleb Ford, Metro assistant finance director, reported on **interest earnings and arbitrage costs**. Metro sold bonds for the program at less than 1 percent interest rate. Compliance monitoring and a professional analysis determined that the Zoo Bond Program is required to rebate to the Internal Revenue Service interest earnings in excess of debt interest costs, for a total of approximately \$450,000. This payment is due based on program spending moving forward more slowly than anticipated and interest earnings being slightly higher than anticipated at more than 2 percent. Metro will be required to pay an estimated \$443,000 in arbitrage fees at the end of this fiscal year (June 2020). Interest earnings on bond proceeds should help offset the expense. Chin See Ming asked if it is a pure pass through situation. Mr. Ford said not exactly, since it will show as an expense, not a pass through.

Ms. Keane reviewed the [Oregon Zoo Bond Program Equity in Contracting Report, July 2019 Update](#) that includes data as of June 30, 2019. The report was sent to the Committee in late August and is

posted on the zoo website. An update report had not been issued since April 2018 because no new data was available until the subcontractor bidding and Guaranteed Maximum Price for Polar Passage/Primate Forest/Rhino Habitat was established in the spring of 2019. The new report includes some formatting improvements. The overall bond program has a COBID¹ utilization rate of 14.9 percent on construction contracts, and PPR has a utilization rate of 13 percent. The program has an aspirational goal of 15 percent for each construction project. The calculation is based on COBD-eligible construction dollars, with some specialty scopes that are not available from COBID firms being excluded. The utilization is based on contract amounts (not spending to date), so the numbers will not change much throughout the project. In the past when several projects were underway, an updated *Equity in Contracting* report was issued quarterly. The Committee will decide on the frequency at its next meeting in November. When the bond program is complete, the cumulative equity report will serve as a complete report on construction COBID utilization.

Heidi Rahn reported on **Construction Careers Pathways Project (C2P2)** that Metro is leading in working with 16 local government partners to diversify the construction workforce, and use public project dollars to create change. Last month the project finalized a framework, summarized in a handout provided to members (and included with the record). In the fall, the Metro Council will consider the framework for adoption. Then the project will move into the implementation phase. The Daily Journal of Commerce featured C2P2 today, and tomorrow Metro will receive an award from the DJC for leading the regional conversation on construction workforce diversity. The impetus for the C2P2 project came from two Metro committees – the zoo Oversight Committee and Metropolitan Exposition and Recreation Commission (MERC). Ms. Rahn thanked the Committee for its role in helping Metro effect change.

Vice Chair Stocker asked how Metro came up with the structure for C2P2. Metro was the first in the country to start on this at a regional level with a regional model. Some cities, such as Seattle, had done work on a municipal level. Metro started with a market study that provided data to drive the work. It is estimated that approximately 30 percent of the jurisdictions had something in place prior to this project, and all committed to work on it. They worked together on it for a year, and all consistently showed up. The power of the public dollars will hopefully help change the culture.

Vice Chair Stocker noted that the bond language does not have anything about equity, yet equity has become such a priority, that it will now be written into future bond measures. Councilor Craddick said that the Metro Council's equity strategy that has influenced all aspects of Metro was a driver for C2P2 as well. If anyone knows of any organizations that are not involved with C2P2 and want to be, let Ms. Rahn know.

Councilor Craddick asked if anyone is monitoring the agencies that are not in C2P2 now but may want to join the effort over time. Ms. Rahn indicated that C2P2 is monitoring that, and Multnomah and Clackamas counties are now interested. Councilor Craddick mentioned Tualatin/Clean Water Services as another potential agency to join.

The data from the program's *Regional Construction Workforce Market Study* is available on the C2P2 website at: <https://www.oregonmetro.gov/sites/default/files/2018/07/02/C2P2-regional-construction-workforce-market-study-07022018.pdf>

¹ COBID refers to minority-owned enterprises, women-owned enterprises, emerging small businesses, and service-disabled veteran-owned enterprises that are certified by the State of Oregon Certification Office of Business Inclusion and Diversity.

E. Program Schedule

Ms. Keane reviewed the program schedule. The Polar Passage/Primate Forest/Rhino Habitat project is on track, with no changes to the schedule. Primate Forest, Rhino Habitat and the Café plan to open in the fall of 2020. Polar Passage and the event space plan to open in the winter of 2021.

F. Committee Annual Report

At the May meeting, a subcommittee was formed to begin work this summer on the Committee's annual report for 2020. Vice Chair Stocker thanked those members who had met in June for the subcommittee: Susan Hartnett, Laurel Brown, Kevin Spellman, Naomi Bishop and Christine Taylor. (Katherine Porras and Daniel Hauser also volunteered, but could not attend that first meeting.)

They discussed the need to reduce redundancy, use more graphics, separate out recommendations from commendations, focus on lessons learned, provide an executive summary, and possibly add graphics to show the degree the projects meet the initiatives. Subcommittee members agreed to draft completed project reports and other historical report elements. The draft reports for the Condors, Penguin Filtration and the Water Main Building have been submitted. Chair Hartnett will review and edit the drafts, and the full Committee can discuss them at the next meeting Nov. 13. At that time, she will ask for final subcommittee volunteers to prepare the 2020 report.

Councilor Craddick reiterated the value of this committee in overseeing the managing of the bond funds. It creates public trust for future work. Ms. Rahn said it was also helpful as Metro launches other bond programs, and why the lessons learned in the annual report are so important. In November Metro will ask voters to renew funds for the Natural Areas bond.

G. Zoo and OZF Updates

Dr. Don Moore, Oregon Zoo director, gave an **update on the zoo**. He does not have any new updates on the unfortunate death at the zoo in the Rhino Habitat. KGW has submitted a public records request to Metro regarding it, and Metro will release more than 1000 pages. Metro has not gotten any more reports back from the police or medical examiner. Ms. Rahn noted that it has been difficult for the bond team and the full zoo team, and acknowledged they have responded with professionalism and compassion.

On Sept. 17, 2019, Ms. Keane and Dr. Moore delivered the zoo's draft *Strategic Plan 2020 – 2023* to the Metro Council. The plan is the zoo's guide for the next three years as it makes progress towards its mission to create a better future for wildlife. The main goals of the plan are to lead the way in animal care and welfare; deliver an inspiring guest experience (every time); drive wildlife conservation; create diverse, equitable and inclusive environments; achieve financial sustainability; elevate the staff experience; and connect with our communities. His zoo update included reports in several of the goal areas.

At the Association of Zoos and Aquariums annual conference last week in New Orleans the Oregon Zoo earned three prestigious AZA awards – one for design innovation at the zoo's new Education Center, one for conservation work on behalf of imperiled Northwest butterflies and a third recognizing achievement in workforce and audience diversity. These awards are some of the highest distinctions in the zoo world and represent the respect of zoo peers from around the country. The awards also reinforce the goals of the Oregon Zoo's strategic plan.

The zoo worked with partners for wildlife conservation to restore populations of imperiled native species: Eight California condor chicks were hatched this year, and seven adult birds hatched earlier at the zoo's offsite center were sent out this month to wild release sites in California and Arizona; raised and released more than 2000 Oregon silverspot and Taylor's checkerspot butterflies; and released 237 Northern leopard frogs from a pilot recovery program launched with Washington's Department of Fish and Wildlife.

The zoo co-created a Pacific lamprey habitat with Native American tribes, and some tribes will participate in the grand opening cultural celebration at World Rivers Day at the zoo on Sunday, Sept. 29. The zoo is leading the way in talking about lamprey care and habitat, and its interpretives talk about the importance of lamprey to Native American culture. The zoo sponsored two Staff Conservation Action Trips (SCATs) this winter, and 100 staff participated in planting lamprey habitat. This fall another SCAT is planned to cleanup plastics on the coast and along rivers, and the collected plastic will be contributed to *Washed Ashore* sculptures made of plastics collected from the ocean that will be exhibited at the Oregon Zoo in 2020.

Sarah Keane has been leading an innovation process improvement program that has been successfully implemented at the zoo and Metro, increasing efficiencies and saving significant dollars. The bond team has also excelled at innovation and saving money.

The zoo is now a certified KultureCity site to make its grounds and all its programs and events sensory-inclusive. The new initiative aims to promote an accommodating and positive experience for all guests with sensory issues. The zoo now makes available sensory kits for visitors, equipped with noise canceling headphones, fidget tools, verbal cue cards and weighted lap pads. Sensory sensitivities or challenges with sensory regulation are often experienced by people with autism, dementia, PTSD and other similar conditions. One of the major barriers for these individuals is sensitivity to overstimulation and noise. With its new certification through the nonprofit, the zoo is now better prepared to help guests with sensory sensitivities have the most comfortable and accommodating experience possible. The zoo's sensory inclusion initiative was recently featured in a local magazine.

Julie Fitzgerald, **Oregon Zoo Foundation (OZF)** executive director, gave an update. OZF is in year three of its \$8.5 million campaign for the zoo, and to date has raised approximately 75 percent of that goal, and also 75 percent of the \$3.5 million portion of that goal designated for the zoo bond habitats. OZF just got a new \$300,000 commitment for Primate Forest. Jim Mitchell and Kate Giraud took the potential donors on a tour of the construction of Polar Passage and Primates, and that helped lead to the donors deciding to contribute.

The fundraising program is also working to build the constituency for the future as well. Zoo volunteers are one of those constituencies, so OZF is hosting a Preview and Pie Party just for volunteers to see the new habitats, and talk about ways they can provide support in volunteering and fundraising. Volunteers are also setting their own goal to raise and contribute \$50,000 to the campaign toward supporting the \$3.5 million for the zoo bond projects.

Recently the OZF Advocacy Committee hosted its second tour of the zoo for elected officials. Councilor Craddick was impressed with the 54 people on the tour. OZF is leading a tour October 17 to 23, 2019, to Churchill, Canada – the Arctic tundra -- to see polar bears, and two spots are available.

H. Open Discussion/Questions

Dr. Dan Aja asked if there was any change with condors in the wild ingesting heavy metals. Ms. Horiszny responded: Since 2005, 65 chicks hatched at the zoo's off-site facility have been released to the wild, and 22 of those are now dead. Losing one in three is not really out of line in a reintroduction program. Out of those 22, only two were confirmed to be from lead poisoning. More were taken by predation –three birds. Other reasons for death included parasites or disease, interaction with energy-related equipment (transmission lines, windmills, etc.) and six from unknown causes. Some energy companies are looking at contributing to the condor program as part of their mitigation for trauma to birds from their equipment. The Oregon Zoo Foundation recently received a \$50,000 contribution for the zoo's offsite condor breeding program. The condors in the wild are still a high-maintenance population.

I. Adjournment

Vice Chair Stocker adjourned the meeting at 4:13 p.m.

Upcoming meeting dates – Wednesdays, 3 to 5 p.m. in Conservation Hall, Education Center, Oregon Zoo

Nov. 13, 2019

Feb. 12, 2020

May 13, 2020

Sept. 9, 2020

Nov. 18, 2020* ***Change in schedule to 3rd Wednesday due to holiday**

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Oregon Zoo Bond
Citizens' Oversight
Committee Meeting

Nov. 13, 2019

Agenda item C

Oregon Zoo Bond Citizens' Oversight Committee meeting

Nov. 13, 2019

Agenda Item C. Monthly Project Status Reports

1. Polar Passage/Primate Forest/Rhino Habitat
2. Percent-for-Art – No report
3. Interpretive Experience – No report
4. Close-out project: Tree mitigation – No report



Oregon Zoo Bond Project Status Report Polar Passage/Primate Forest/Rhino Habitat

Oregon Zoo Bond
Citizens' Oversight
Committee Meeting

Nov. 13, 2019

Agenda item C-1

Project Title: Polar Passage/Primate Forest/Rhino Habitat	Project Manager: Jim Mitchell
Reporting Period #045/Status Date: October 18, 2019	Project Manager Phone: 503-914-6025
Architect/Engineering Design Consultant: CLR Design	Construction Manager/General Contractor: Lease Crutcher Lewis (LCL)
<p>Polar Passage Project Description: The new polar bear habitat is needed to increase access to natural substrate; increase the efficiency of the water-filtration system; reduce temperatures; chill the pool water; and increase both land and pool space. Construct modern natural holding areas with better lighting and ventilation, allowing better care for the animals. Space requirements, water quality and housing conditions will meet or exceed the Manitoba Protocols established for zoo polar bears. New utilities will complete the system upgrade installed with previous bond-funded projects. Guest services will be enhanced at the new central plaza.</p> <p>Primate Forest/Rhino Habitat Project Description: The current schematic design demolishes the existing building (except for the newer Red Ape Reserve) and rebuilds on the current primate site for chimpanzees. Orangutans will live in the existing Red Ape Reserve. The Metro Council approved the project scope modifications on March 16, 2017. Rhino Habitat: Remove the hippo dump-and-fill pool, remove the barrier between the rhino/hippo habitats and re-grade both habitats for rhino use only.</p>	

Status at a Glance

Status Item	On Track	Caution	Off-track
Budget	X		
Schedule and signoffs	X		
Deliverables	X		

LEGEND:

	Moving along nicely, no significant concerns at this time.
	Must be addressed or may be escalated to off-track mode.
	Causing significant impact to the project.

Design and Construction Schedule

START DATE		COMPLETION DATE	
ESTIMATED	CONTRACT	ESTIMATED	SUBSTANTIAL COMPLETION
05/2016	6/2016	1/2021	TBD

Project Budget and Expenditures

ORIGINAL BASELINE	REVISED BASELINE	COSTS TO DATE OF STATUS	ESTIMATE AT COMPLETION	ESTIMATED BUDGET VARIANCE
\$34,348,074	\$47,002,256*	\$14,567,441	\$47,002,256	\$0

*On Feb. 4, 2016, the Metro Council approved the bond team's recommendation to increase the Polar Passage project budget by \$2.6 million to cover escalation costs exceeding the original estimated escalation.

On March 16, 2017, the Metro Council approved additional bond fund resources increasing the Polar Passage project budget by \$3,248,334 (\$2,200,000 from OZF and 1,048,334 from the program contingency) and increased the Primate Forest/Rhino project budget by \$2,605,848 to offset escalation costs.

On April 6, 2017, the Metro Council approved an exemption to competitive procurement by combining Polar Passage and Primate/Rhino projects under the existing design and Construction Management/General Contractor contracts to save an estimated \$1.3 million in construction costs. Project budgets and schedules have been combined.

In August 2017, the Nancy Parr estate donation of \$237,333 for Primate Forest was added to the project budget.

On October 5, 2017, OZF approved \$750,000 (including the \$237,333 Nancy Parr estate donation) for Primate Forest and \$250,000 for Rhino.

On April 5, 2018, OZF approved redirecting \$500,000 previously committed for Polar Passage maternity den (which will not be built in this phase) to fund the rhino habitat project in total, \$750,000. Bond funds previously allocated for the rhino project will be redirected to the Polar Passage project.

On Feb. 7, 2019, the Metro Council allocated \$3,200,000 to the Polar Passage/Primate Forest/Rhino project (\$1,952,000 to the Polar Passage budget and \$1,248,000 to the Primate Forest budget) from unallocated contingency and other project savings.

Critical Issues

None at this time

Summary Status

Milestones/deliverables/information items for this reporting period:

- Primate precast insulated concrete walls have been erected.

Construction progress:

- Polar bear mat slab foundation is scheduled to be poured on October 25.
- The design team is refining the design to reduce the height of the island in the center of the existing primate moated habitat to comply with Association of Zoos and Aquariums' standards for horizontal jump distance.
- Utility work at Polar Passage and the middle service road is in progress.

Planned milestones/deliverables/information for the next reporting period:

- Continue with construction on the main package.

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Oregon Zoo Bond Program
 Project Status and Financial Information at a Glance
 Expenditures and Revenue through September 2019

Oregon Zoo Bond
 Citizens' Oversight
 Committee Meeting
 Nov. 13, 2019
 Agenda item D

Program Budgets and Expenditures						Project Budgets	Zoo Bond Fund Expenditures	Nonbond Fund Expenditures	Total Project Expenditures	Project Forecasted Total Expenditures
Construction Projects										
Veterinary Medical Center	Complete	Complete	Complete	Complete	Complete	\$ 9,464,299	\$ 8,840,329		\$ 8,840,329	\$ 8,840,329
Penguin Life Support System	Complete	Complete	Complete	Complete	Complete	\$ 1,800,000	\$ 1,762,250		\$ 1,762,250	\$ 1,762,250
Water Main Building	Complete	Complete	Complete	Complete	Complete	\$ 267,459	\$ 242,495		\$ 242,495	\$ 242,495
Elephant Lands	Complete	Complete	Complete	Complete	Complete	\$ 57,561,443	\$ 54,147,246	\$ 3,260,000	\$ 57,407,246	\$ 57,407,246
Condors of the Columbia	Complete	Complete	Complete	Complete	Complete	\$ 2,628,592	\$ 2,215,609		\$ 2,215,609	\$ 2,215,609
Remote Elephant Center					Project Eliminated	\$ 117,864	\$ 39,672	\$ 78,191	\$ 117,864	\$ 117,864
Education Center	% Complete	Complete	Complete	Complete	Complete	\$ 17,699,157	\$ 15,800,382	\$ 1,613,343	\$ 17,413,725	\$ 17,482,791
Polar Passage/Primate Forest /Rhino	% Complete	Complete	Complete	Complete	Complete	\$ 47,002,256	\$ 13,817,441	\$ 750,000	\$ 14,567,441	\$ 47,002,256
Electrical Infrastructure	% Complete				97%	\$ 1,500,000	\$ 1,455,745		\$ 1,455,745	\$ 1,500,000
Close-out Contingency	% Complete					\$ 1,000,000	\$ 30,437		\$ 30,437	\$ 844,805
Interpretives										
Program Interpretive Experience	Complete	Complete	95%			\$ 2,766,640	\$ 2,229,596	\$ 301,993	\$ 2,531,589	\$ 2,550,000
Percent-for-Art										
One-Percent-for-Art Requirement	Complete	Complete	Complete	Complete	93%	\$ 843,154	\$ 713,391	\$ 50,000	\$ 763,391	\$ 810,000
Planning Projects										
Comprehensive Capital Master Plan	Complete	Complete	Complete	Complete	Complete	\$ 1,850,000	\$ 1,691,504		\$ 1,691,504	\$ 1,691,504
Stormwater/ Wastewater Analysis	Complete	Complete	Complete	Complete	Complete	\$ 160,000	\$ 159,979		\$ 159,979	\$ 159,979
Stormwater Minor Projects & Campus Surv	Complete	Complete	Complete	Complete	Complete	\$ 386,797	\$ 386,797		\$ 386,797	\$ 386,797
Land Use Processes										
Land Use – New CUMS	Complete	Complete	Complete	Complete	Complete	\$ 796,785	\$ 816,777		\$ 816,777	\$ 816,777
Land Use – Amended CUMS	Complete	Complete	Complete	Complete	Complete	\$ 110,429	\$ 142,617		\$ 142,617	\$ 142,617
Program Administration										
Program Administration, Metro Central Support and Bond Issuance						\$ 8,850,000	\$ 6,509,938		\$ 6,509,938	\$ 8,850,000
Unallocated Program Contingency										
Unallocated Program Contingency										\$ (0)
Expenditure Totals							\$ 111,002,205	\$ 6,053,527	\$ 117,055,732	\$ 152,823,317

Program Resources	Expected Amount	Zoo Bond Fund Revenues Received	Nonbond Revenues Received	Total Revenues Received/Issued	Funds Not Yet Received
General Obligation Bonds, premiums and interest	\$ 143,446,320	\$ 143,655,970		\$ 143,655,970	
Oregon Zoo Foundation	\$ 7,918,000		\$ 6,018,000	\$ 6,018,000	\$ 1,900,000
Grants, donations, rebates and partner investments	\$ 1,458,998		\$ 1,458,998	\$ 1,458,998	\$ -
Resource Totals	\$ 152,823,317	\$ 143,655,970	\$ 7,476,998	\$ 151,132,967	\$ 1,900,000

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Staff Responses to 2018 Recommendations from the 2018 Oregon Zoo Bond Citizens' Oversight Committee Annual Report

(2018 Report was presented to the Metro Council in May 2019)

Updated 11-4-19

Listed in order of occurrence in the report:

Legend:

✓ task will be substantially complete by November meeting

📅 task will be complete by end of year

◆ task was addressed at an oversight meeting

	Task	Project/Report Topic	Status	Date	OC Mtg	Memo, Presentation or Comment	2018 Report Response
✓	1 The committee carries forward its 2017 recommendation that the remaining bond-funded projects focus conservation education to align with the Integrated Conservation Action Plan.	Conservation Education: Overview (section 1A2, pages 13-15)	In progress	Nov-19	◆	Video Presentation	Conservation Impact Manager, Dr. Kathayoon Khalil, described the progress and process for the driving the ICAP forward in a video update shown at the November committee meeting. Conservation education will be aligned with ICAP goals and priority regions.
✓	2 The committee recommends that staff report findings from the Education Center interpretive summative evaluations when available in 2019.	Conservation Education: Overview (section 1A2, pages 13-15)	Complete	May-19	◆	Presentation	At the May 8, 2019, meeting Grant Spicklemer and Terry O'Connor presented results. The evaluation results confirm that the Education Center interpretives met their goals.
✓	3 The committee carries forward its 2017 recommendation that the Oregon Zoo operate, maintain and repair the new facilities to meet the intended water, energy and sustainability performance of the designs and equipment specifications.	Infrastructure and Sustainability: Overview (section 1A3, pages 15-18)	Complete	Oct-19		Comment	The Bond program staff commission equipment and provide training to zoo users, and then provide operations and maintenance manuals as well as additional documentation about how the systems work and their intent. The zoo facilities team operates the new facilities according to the parameters in the O&Ms. Additionally, zoo facilities staff continues to optimize operations for energy savings.
✓	4 The committee recommends that the Education Center continue data collection on energy use in order to achieve the International Living Future Institute (ILFI) zero energy bond certification.	Infrastructure and Sustainability: Overview (section 1A3, pages 15-18)	Complete	Oct-19		Comment	Opsis Architecture, architect for Education Center, is managing the application and certification process. They are working with zoo facilities and PAE (project electrical consultant) to collect and verify energy use and data collection. The application and data collection began February 2019, Opsis and the zoo will continue through February 2020. The data will then be submitted to ILFI for certification verification.
✓	5 The committee recommends that Metro continue to explore additional alternative procurement strategies to further improve COBID participation and workforce diversity.	Diversity in Contracting: Overview (section 1A4, pages 18-22)	Complete	Oct-19		Comment	Metro has made agency-wide changes to procurement strategies to boost COBID participation, and monitoring of the progress is continual. Additionally, at the September meeting the committee was provided an update on the Construction Careers Pathways Project (C2P2) program aimed at expanding workforce diversity.
📅	6 The committee recommends that all aspects of the program's COBID utilization efforts be well documented by continuing the Quarterly Reports through the end of the program, for use on future zoo bond programs as well as on other Metro capital programs.	Diversity in Contracting: Overview (section 1A4, pages 18-22)	In progress	Dec-19		Comment	<i>Pending discussion with full committee.</i>

	Task	Project/Report Topic	Status	Date	OC Mtg	Memo, Presentation or Comment	2018 Report Response	
✓	7	The committee recommends that Metro continue its leadership role in the Construction Career Pathways Project aimed at increasing diversity in the regional construction workforce.	Diversity in Contracting: Overview (section 1A4, pages 18-22)	Complete	Sep-19	◆	Report out by Heidi Rahn	This project finalized a framework adopted by the Metro Council on Oct. 24, 2019. The Metro Council acknowledged the Oversight Committee's role in encouraging Metro to work toward increasing workforce diversity. Next, the project will move to the implementation phase. Metro also received an award from the Daily Journal of Commerce for leading the regional conversation on construction workforce diversity.
✓	8	The committee continues to recommend that Metro maintain clarity about roles, responsibilities and lines of authority given the program management and reporting structure transitions.	Program Governance and Structure: Overview (section 1A5, pages 22-23)	Ongoing			Comment	As the bond program nears completion, staffing levels will continue to be adjusted to an appropriate level. Staff will continue to provide the committee with regular updates.
✓	9	The committee carries forward its 2017 recommendation of continued commitment to polar bear conservation and to define how Polar Passage supports this conservation commitment.	Polar Passage/Primate Forest/Rhino Habitat (section 1B1-3, pages 24-29)	In progress	Nov-19	◆	Report out by Don Moore	<i>notes to follow report out.</i>
✓	10	The committee continues its 2017 recommendation that the Oregon Zoo continue to work with professional networks to optimize the positive result of bears being placed in appropriate habitats, including Polar Passage.	Polar Passage/Primate Forest/Rhino Habitat (section 1B1-3, pages 24-29)	In progress	Nov-19	◆	Report out by Don Moore	<i>notes to follow report out.</i>
✓	11	The committee recommends that the Interpretive Framework be completed by mid-2019 and shared with the committee.	Interpretive Experience and Wayfinding (section 1B4, pages 30-31)	In progress	Nov-19	◆	Framework included in meeting packet	This framework was substantially completed in November 2019 and will provide interpretive best practices to best connect with our audiences.
✓	12	The committee recommends that the project team continue to coordinate the design, fabrication and installation of artwork for the final zoo bond project over the next two years.	Percent for Art (section 1B5, pages 32-34)	Complete	Sep-19	◆	Report out by Kate Giraud	Zoo bond staff continues to work with commissioned artist and Regional Arts and Culture Council through the installation and the unveiling of the art pieces. Design and fabrication are complete, and the art pieces are stored locally and ready for installation. Regular updates have been provided via monthly reports and during committee meetings.
✓	13	The committee recommends that zoo staff remain open to creative collaborations such as Portland General Electric's Dispatchable Service Generation partnership; however, staff should engage in an early feasibility study to ensure that resources are not expended on an unrealistic project.	Electrical Infrastructure (section 1B6, pages 34-35)	Not started	Oct-19		Comment	The zoo has a strong relationship with Portland General Electric. Currently we are part of a demand reduction program to support PGE's efforts to reduce greenhouse gas emissions and limit capital investment in additional power generation. Zoo staff will continue to explore opportunities that may include electrification of the zoo's diesel train, onsite solar and battery backup capabilities.
✓	14	The committee recommends that the zoo continue to implement alternative food choices for patrons while eateries are closed for construction.	Budget and Expenditures (section 2A1, pages 36-40)	Complete	Nov-19		Comment	The zoo has partnered with local food carts to offer additional selections to visitors. Coffee Crossing has also provided an additional option for visitors.

	Task	Project/Report Topic	Status	Date	OC Mtg	Memo, Presentation or Comment	2018 Report Response
✓	15 The committee recommends that the zoo have a plan to offset any reduced cash flow during this final stage of construction.	Budget and Expenditures (section 2A1, pages 36-40)	Complete	Nov-19		Comment	The zoo balances its budget annually based on conservative attendance estimates. In addition, financial results are monitored through the year, and operations are adjusted as necessary.
✓	16 The committee recommends staff continue monitoring construction costs and project and program contingencies.	Budget and Expenditures (section 2A1, pages 36-40)	Ongoing	ALL	◆	Report out by Jim Mitchell	Zoo bond staff continue to closely monitor construction costs, upcoming change events and provide frequent reports that address issues as they arise.
✓	17 The committee recommends that alternative contracting methods be considered for appropriate construction projects at the zoo due to its unique geography, visitor presence and animal habitat needs.	Contracting Methods (section 2A2, page 41)	Complete			Comment	The zoo continues to use cooperative contracts that have been competitively bid for specialty work. The zoo also leverages local and COBID-certified firms. The zoo has explored using the CMGC process and has determined that the nature and size of projects, excluding the bond work, does not warrant using this contracting method.
✓	18 The committee recommends staff continue to monitor the reasonable assessment of administrative costs and their implications on the overall program budget, and provide a report at least annually to the full Oversight Committee.	Administrative Costs: Cost Projections (section 2B2, pages 44-45)	Complete	Nov-19	◆	Report out by Caleb Ford	<i>notes to follow report out.</i>
Ⓜ	19 The committee recommends that staff complete periodic reviews of other local bond issuance programs to make sure administrative costs continue to be comparable.	Administrative Costs: Cost Projections (section 2B2, pages 44-45)	Not started	Dec-19		Memo to come from Sarah Keane	
✓	20 The committee recommends allocation from program contingency for administrative cost projections.	Administrative Costs: Cost Projections (section 2B2, pages 44-45)	Complete	Feb-19	◆	Report out by Heidi Rahn	The full program contingency was allocated to projects and administrative costs through Metro Council approval in February 2019 after testimony from Heidi Rahn, Don Moore, and Chair Susan Hartnett. The budget reallocation added \$3.2 million to Polar Passage/Primate Forest/Rhino Habitat project and \$1.65 million to Administration.
✓	21 The committee carries forward its 2017 recommendation that staff continue to monitor future operating costs of the zoo assuming that as projects mature, costs may change.	Operating Costs: Cost Projections (section 2B3, page 46)	Complete	Oct-19		Comment	The zoo is recognizing and monitoring, through an energy dashboard and submetering, energy use and savings across the campus. Additionally, the newer facilities take less maintenance than the older building they've replaced. These savings offset potential increases in programming costs to operate the new habitats. When new facilities come online they are added to both the computerized building maintenance system and the zoo's asset listing. This ensures future costs are accounted and future replacement is planned.
Ⓜ	22 The committee recommends staff provide the operating outcomes from completed projects and the projected cost or revenue impact on the zoo budget from all bond projects.	Operating Costs: Cost Projections (section 2B3, page 46)	In progress	Dec-19		Memo to come from Sarah Keane	

		Task	Project/Report Topic	Status	Date	OC Mtg	Memo, Presentation or Comment	2018 Report Response
✓	23	The committee recommends that the zoo prioritize preventative maintenance in the ongoing operation of the new facilities to maximize the lifespan of the equipment.	Operating Costs: Cost Projections (section 2B3, page 46)	Complete	Oct-19		Comment	All major equipment has been added to the computerized maintenance system, and preventative maintenance procedures developed, implemented and tracked in the system.
✓	24	The committee carries forward its recommendation that the Education Center continue to be operated in a way that optimizes net-zero energy goals while achieving other program goals.	Education Center (Appendix A11, pages 62-66)	Complete	Oct-19		Comment	Zoo program staff operating in the Education Center have been trained and understand the importance of operating the building to maintain net zero energy operations. Zoo facilities has added preventative maintenance procedures to maximize solar production.
✓	25	The committee recommends that the Education Center continue data collection on energy use in order to achieve the International Living Future Institute (ILFI) zero energy bond certification.	Education Center (Appendix A11, pages 62-66)	Complete	Oct-19		Comment	Opsis Architecture, architect for the Education Center, is managing the application and certification process. They are working with zoo facilities and PAE (project electrical consultant) to collect and verify energy use and data collection. The application and data collection began in February 2019, and Opsis and the zoo will continue the collection through February 2020. The data will then be submitted to ILFI for certification verification.

Oregon Zoo Interpretation

Oregon Zoo Vision: A better future for wildlife.

Oregon Zoo Mission: Oregon Zoo inspires the community to respect animals and act on their behalf. We do this by creating engaging experiences and advancing the highest level of animal welfare, environmental literacy and conservation science.

Oregon Zoo Interpretive Philosophy:

The National Association for Interpretation (NAI) defines interpretation as a mission-based communication process that forges emotional and intellectual connections between the interests of the audience and the meanings inherent in the resource. Interpretation is different than just conveying information (though information is usually a significant part of the message). Oregon Zoo has built the following interpretive best practices using the work of Freeman Tilden, Sam Ham and other leaders of interpretive design along with our understanding of what methods work best with our audiences.

- 1) When possible, **relate** messages to the personal background, experiences and motivations of the visitor.
 - a. Language of interpretive messages should be warm, friendly and not overly academic (though informed by science).
 - b. Messages should be crafted to the specific audiences for whom they are intended. Most messages should use vocabulary of 6th grade level or lower.
 - c. Use analogies to help visitors discover how animal characteristics and behaviors are similar to ours and where they differ.
 - d. Messages should be selected that appeal to a broad range of visitor backgrounds/motivations.
 - e. Important messages should be tested with different audiences (e.g. people from various racial and ethnic backgrounds, different physical abilities, etc.) to see how they are perceived. Tests could include observation, interviews or focus group discussions
 - f. Provide opportunities for visitors to bring their own relevance to the information when possible.

- 2) **Reveal** themes and messages from a unique perspective
 - a. Good interpretation offers information and questions that lead audiences to discover and create meaning themselves rather than just presenting them with "the answers".
 - b. Show, don't tell. Use compelling visuals as much as feasible to convey key messages.

- c. Information presented should go beyond standard natural history information that can be found easily on the Internet. What is the zoo's unique story?
 - d. Stories about keepers and zoo specific animal welfare/ conservation efforts should be highlighted
- 3) **Provoke** curiosity, attention and interest in your audience
- a. Remember that the zoo is a free-choice learning environment where visitors choose how they engage.
 - b. All messages should have a hook – something attractive or provocative that makes the audience want to read or hear the message. Ideally the hook should capture attention within 3 seconds.
 - c. Use thought provoking questions, interactive elements, dramatic visuals and fun, playful language to draw people to the content.
 - d. Identifying surprising relationships between the personal experience of the audience and the animal being interpreted can be a good way to build curiosity and empathy (e.g. describing cockroaches and condors as “nature’s garbage collectors”, discussing parenting behaviors of seahorses)
 - e. Use an animal’s own attractiveness to draw in the audience to create an opportunity to deliver a learning moment. Sometimes called the “Chocolate-covered vitamin”. When in doubt – use otters!

John Veverka also encourages interpreters to ask themselves two questions as they are developing content for an interpretive exhibit or program.

- 1) Why would a visitor want to know this?
- 2) How do I want the visitor to use this information?

In order to answer the first question, it is ideal to have a clear understanding of your visitor’s knowledge, attitudes and interests about the topic prior to creating a program or exhibit. Visitor surveys, interviews, focus groups or other consumer research methods can be helpful in providing this information and should be used.

For the Oregon Zoo, answering the second question is critical in our efforts to drive people to adopting new environmentally responsible behaviors following exposure to our exhibits and programs. Clearly identifying the interpretive outcomes you hope to achieve will assist in the development process and in interpretive evaluation after the exhibit or program is open to the public. Tools such as interpretive frameworks and logic models can be helpful in describing larger more complex exhibit or programs with multiple desired outcomes.

Freeman Tilden, 1957, *Interpreting our Heritage*, the University of North Carolina Press, NC, USA

Sam Ham, 2013, *Interpretation, Making a Difference on Purpose*, Fulcrum Publishing.

John Veverka, 2018, *Interpretive Master Planning Philosophy, Theory and Practice for Museums*. Museums Etc., Edinburgh, Scotland.

Oregon Zoo Interpretive Outcomes

Exhibits and programs should have clearly identified interpretive themes and measurable outcomes. These interpretive themes should be specific to the topic and connect both intellectually and emotionally to the audience being addressed. The zoo as a whole also has a set of interpretive outcomes identified.

After their visit, zoo visitors will know:

1. (Animal Welfare) Oregon Zoo animals thrive under the respectful, science-based care provided by our professional staff.
 - a. Indicator – Zoo visitors can describe specific activities and exhibit elements they observed during their visit that increase animal welfare
 - b. Indicator – Zoo visitors perceive that Oregon Zoo animals have a good quality of life.
2. (Conservation) Oregon Zoo invests in local and global conservation as a natural outflow of our caring for wildlife.
 - a. Indicator – Zoo visitors can describe specific conservation activities being led and supported by Oregon Zoo
 - b. Indicator – Zoo visitors believe that Oregon Zoo is a leading conservation organization in the region.
3. (Action) Together, we can create a better future for wildlife by making environmentally responsible choices both individually and as a community
 - a. Indicator - Zoo visitors learn specific behaviors they can do to help wildlife as a result of their visit.
 - b. Indicator – Zoo visitors can describe specific ways that Oregon Zoo is trying to create a positive impact on wildlife and the environment.
 - c. Indicator – Zoo visitors learn of opportunities to join with others to take conservation action (zoo or zoo partners)
 - d. Indicator – Zoo visitors report an intention to take action/or actual behavior as a result of their visit

The zoo has also developed several position statements that describe the zoo's position on priority conservation issues (climate change, single use plastics, palm oil, etc.). These statements include key messages and specific information about the actions we hope visitors will take following a visit. These all can be found online here -

<https://www.oregonzoo.org/conserve/where-we-stand>. As the zoo's new Integrated Conservation Action Plan is further developed more messaging plans may be developed for specific priority regions, conservation issues or species.

Oregon Zoo Interpretive Voice:

Oregon Zoo has a defined voice for all written interpretation (both on grounds and through outward facing media channels). Having a unified voice helps the zoo consistently deliver messages and build relationships with the receivers of zoo communications.

Written voice - *If the Oregon Zoo were a person, they would be an approachable and enthusiastic authority on conservation, wildlife and nature, with pride in the Pacific Northwest and its natural history. Key voice descriptors: playful, authentic, original, insightful, curious, science-based.*

For other types of interpretation (talks/carts/etc...), voice can be a little more individualized, but should try to emphasize the same key descriptors outlined above.

Skills of Interpretation

The Oregon Zoo recognizes that the following interpretation skills are important and demonstrate best practices:

- Ability to collaborate and partner
- Be a facilitator of learning and understanding
- Create learning opportunities that are dynamic, social and interactive
Allow for dialogue and multiple perspectives
- Experiment and innovate
- Be a life-long learner
- Engage in understanding and communication of environmental equity

Interpretive Methods

Research points to the most successful interpretation using a variety of methods and materials to connect with many different audiences and to reinforce concepts and key messages as visitors travel through the zoo.

Because of the varied and changing nature of most zoo audiences, it is suggested that most interpretive programming be multimodal and flexible in its design to adjust to the needs of the audience and the audience's ability to connect with the information and use it. The different methods used should also be complementary, reinforcing the same message through multiple media and seamlessly connecting to one another in a holistic fashion.

Interpretive methods used at Oregon Zoo include:

Exhibit (non-personal) interpretives:

- 1) Signs/displays
- 2) Sensory displays (touchable skulls, pelts, sounds, sculptural elements, etc...)
- 3) Manipulatives (games, puzzles, etc.)
- 4) Structures/landscape features (art, themed play areas, architectural elements)

- 5) Digital/video displays (video stories, video games)

Personal interpretive experiences:

- 1) Roaming interpreters
- 2) Fixed interpretive stations
- 3) Interpretive talks/presentations

The following methods are used to deliver interpretive messages but have additional goals beyond interpretation (learning outcomes, public engagement, etc...)

External communications:

- 1) Press releases
- 2) External publications
- 3) Website (animal pages, etc.)
- 4) Social media (Facebook, Twitter, Instagram)

Education Programs

- 1) Classes and Camps
- 2) Animal encounters/tours
- 3) Outreach programs
- 4) Shows

Oregon Zoo Interpretive Planning:

Interpretive planning is coordinated by a strategic messaging steering committee and several interpretive subcommittees. The steering committee identifies key messages for delivery through all interpretive methods, establishes general messaging procedures/policies and identifies and allocates resources for completing interpretive projects. Subcommittees receive interpretive requests from zoo stakeholders and establish timelines and priorities for completing interpretive projects. Subcommittees also develop best practices for interpretation on zoo grounds and training materials.

Key stakeholders for each committee are listed below:

Strategic Messaging Steering Committee: Director, Deputy Directors (both), Curator of Inspiration, Learning and Action (Lead), Marketing Manager (Lead), Communications Manager, Program Animal Curator, Volunteer Supervisor

Exhibit interpretive team: Marketing PM (Lead), Curator of Inspiration, Learning and Action (Lead), Marketing Manager, Senior Design Coordinator, Content Researcher/Writer, Program Animal representative, Digital Media Specialist (as needed), C3 Staff (as needed)

Personal interpretive team: Volunteer Supervisor (Lead), Program Animal Interp staff (Lead), Ed Center coord, Teen volunteer coord, Camps coord, Guest Services rep, Volunteer rep, USFWS interp staff (as needed), C3 staff (as needed)

Oregon Zoo Interpretive Process:

The process by which interpretive projects are requested, developed and approved varies slightly based on the level of complexity/investment in the interpretation as well as the strategic priority of the message. Most interpretive projects can be classified in one of three categories:

- 1) Tier 1 - Any interpretive project that meets one of the following criteria:
 - a. Overall cost > \$10,000
 - b. Priority message or topic of special interest to the Strategic Messaging Steering Committee (ICAP messaging campaign, hot button issues, etc.)
 - c. Projects using outside funding (Public bond, OZF, partners) or with significant outside stakeholder involvement.

- 2) Tier 2 – Any interpretive project that does not qualify as Tier 1 and meets the following criteria:
 - a. Cost < \$10,000
 - b. New project (not refresh of existing sign, etc.)
 - c. Internally funded by zoo

- 3) Tier 3 - Smaller interpretive projects OR refresh/repair of existing interpretive (w/o major changes to design or content) that meet the following criteria:
 - a. Cost < \$1,000
 - b. Examples include ID graphics that follow set templates, keeper notes, small tweaks/ updates to existing intepretives, etc.

Exhibit Interpretation:

Intake

- Requests come via scheduled meetings with C3 curators at interpretive planning meetings or via work request form sent to Project Coordinator
- New interpretive graphics can only be requested by Zoo curatorial staff, members of the Strategic Messaging Steering Committee and Zoo Executive Team members.
- Project coordinator works with requester to
 - identify general scope of work, budget and any needs around timing
 - determine subject matter expert/point of contact from living collections (if applicable)
 - clarify any initial questions

Planning/prioritization

- Project coordinator communicates request to exhibit interp planning team.
- Planning team identifies project tier, priority and timing.
- Curator of Inspiration, Learning and Action /Marketing manager
 - approves scope of work, budget and priority (with consultation with Strategic Messaging Steering Committee as needed)
 - approves timing and process
 - identify needed resources

Tier 1 Projects

- Interpretive content specialist assigned by Curator of Inspiration, Learning and Action (ILA), design lead assigned by Marketing manager
- Initial content brainstorming meeting held with Director, Deputy Director, identified curators/keepers and interpretive team
- Content specialist develops interpretive themes/outcomes document in consultation with ILA Curator
- Education curator determines whether additional visitor research/needs assessment is needed prior to content development
- Content specialist researches subject and develops interpretive resource guide (if a new species) and exhibit content outline.
 - APPROVAL – Resource guide and content outline reviewed and approved by Strategic Communications Steering Committee and assigned C3 curator
- Approved content sent to content specialist and design lead for further development
- Resource guide sent to personal interpretation team and communications for development of associated interpretive tools (website, interpretive cart activities, etc.).
- Designer consults with exhibit interp team to lay out content, specify format, length of content, etc.
- If exhibit is seeking outside funding sources, designer consults with Oregon Zoo Foundation or funding agency about recognition graphic needs.
- Designer lays out design draft 1 with sample images and reviews with exhibit interp team and facilities staff (to discuss install) as needed.
- Content specialist writes copy (or assigns writing out)
 - APPROVAL – Draft copy is reviewed and approved by ILA curator and assigned curator
- Approved copy is sent to designer who inserts into design draft 1
- Content and design leads determine if prototyping or formative evaluation is needed to test elements of interpretive (consult with ILA curator, or marketing manager as needed)
 - APPROVAL – First design draft is reviewed and approved by Strategic Communications Steering Committee and assigned curator and approved design lead

- Additional drafts are created and reviewed as necessary until final approval is reached
- Communication staff does final edit/check for errors
- Lead designer sends final files to graphics technician/contractor for fabrication and installation
- Designer communicates back to whole project team when exhibit is installed
- ILA curator determines whether any summative evaluation work is necessary

Tier 2 Projects

- Interpretive content specialist assigned by Curator of Inspiration, Learning and Action, design lead assigned by Marketing manager
- Initial content brainstorming held with lead curators/keepers and interpretive team
- Curator of Inspiration, Learning and Action determines whether additional visitor research/needs assessment is needed prior to content development
- Content specialist researches subject and develops interpretive resource guide (if a new species).
- Designer consults with exhibit interp team to lay out content, specify format, length of content, etc.
- Designer lays out design draft 1 with sample images and reviews with exhibit interp team and facilities staff (to discuss install) as needed.
- Content specialist writes copy (or assigns writing out)
 - APPROVAL – Resource guide and draft copy is reviewed and approved by ILA curator and assigned curator
- Resource guide sent to personal interpretation team and communications for development of associated interpretive tools (website, interpretive cart activities, etc).
- Approved copy is sent to designer who inserts into design draft 1
 - APPROVAL – First design draft is reviewed and approved by Strategic Communications Steering Committee and assigned curator and assigned design lead
- Additional drafts are created and reviewed as necessary until final approval is reached
- Communication staff does final edit/check for errors
- Lead designer sends final files to graphics technician/contractor for fabrication and installation
- Designer communicates back to whole project team when exhibit is installed

Tier 3 Projects

- Interpretive content specialist assigned by Curator of Inspiration, Learning and Action, design lead assigned by Marketing manager
- Designer consults with content specialist to specify format, length of content, etc.
- Content specialist writes copy (or assigns writing out)
- Copy is sent to designer who lays out design draft 1 with sample images

- APPROVAL – First design draft is reviewed and approved by ILA curator and assigned curator and assigned design lead
- Additional drafts are created and reviewed as necessary until final approval is reached
- Communication staff does final edit/check for errors
- Lead designer sends final files to graphics technician/contractor for fabrication and installation
- Designer communicates back to whole project team when exhibit is installed

Personal Interpretation – TBD

Oregon Zoo Lens to Accessibility and Equity

The Oregon Zoo uses the following **guiding principles** for our interpretive lens to accessibility and equity:

1. Universal design
2. Use appropriate media for the message and the audience
3. Technology/tools enhance interaction with animals
4. Use a multicultural lens for interpretation – move away from dominant cultural narrative
5. Continuous improvement/learning

Accessibility Lens

- VISION: The Oregon Zoo's interpretation design and delivery provides access to all to facilitate connections with wildlife.

The Oregon Zoo recognizes our legal obligation to meet ADA requirements and commits to going beyond the minimum requirements to create a truly inclusive and accessible experience for all.

Principles of **Universal Design** apply to all aspects of accessibility:

[Universal Design Quick Reference Guidelines](#)

[Universal Design Plan Exhibit Design and Development](#)

Mace and the Center for Universal Design developed seven principles of Universal Design (Hartley, 2015, pp. 42-43).

1. “equitable use,” the design is useful and marketable to people with a range of abilities.
2. “flexibility in use,” the design accommodates a wide variety of individual preferences and abilities.
3. “simple and intuitive use,” use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or concentration level.
4. “perceptible information,” the design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s abilities.
5. “tolerance for error,” the design minimizes possible accidental or unintended errors.
6. “low physical effort,” the design can be used efficiently and with a minimum of fatigue.
7. “size and space for approach and use,” appropriate size and space is provided for approach, reach, and use, regardless of the user’s body size or mobility.

[Smithsonian Guidelines for Accessible Exhibition Design](#)

[Guidelines cover all aspects of exhibit design including content, text design, audiovisuals and interactives, color, lighting and physical space.](#)

- **Accessibility Norms & Best Practices**

- **Physical Accessibility** (visual, hearing, mobility)
 - Tactile maps or prerecorded instructions can be very helpful to visually impaired people. The type of map or instructions used must be based on the information to be communicated, which depends highly on the type of buildings or users.
 - Landmarks that can easily be distinguished by visually impaired individuals are useful as orientation cues. Such cues include changes in illumination level, bright colors, unique patterns, wall murals, location of special equipment or other architectural features.
 - Many people with disabilities have limitations in movement of their heads and reduced peripheral vision. Thus, signage positioned perpendicular to the path of travel is easiest for them to notice. People can generally distinguish signage within an angle of 30 degrees to either side of the centerlines of their faces without moving their heads.

ADA Accessibility Guidelines – The United States Access Board provides specific criteria for [signage](#), including fonts, mounting location and heights, and symbols of accessibility. General guidelines include:

[University of Michigan, Welcoming All Visitors: Museums, Accessibility and Visitors with Disabilities](#)

Guidelines can be both universal and targeted for specific disabilities. For example,

- Mobility limitations – Provide an accessible map and ensure that exhibits provide space for wheelchairs and other mobility devices.
- Blind or low vision – Provide large print labels, Braille labels and maps, audio guides and audio description. Provide tactile offerings.
- Deaf or hard of hearing – Offer closed captioning on video screens, assistive listening devices, real-time captioning and sign language interpretation for programs or tours.

○ **Cognitive Accessibility**

[Web Content Accessibility Guidelines \(WCAG\) 2.0](#)

Guidelines for making web content can easily be translated to accessibility best practices for zoos and museums for guests with cognitive disabilities. Examples areas include but are not limited to:

- Minimizing cognitive load – avoid overwhelming the user
- Consistency – assure that similar user interface elements yield predictably similar results
- Icons – consider using icons to mark important tasks or better yet, use icons and text
- Typography – increase the readability of your content
- Timing – allow the user sufficient time to access and interact with the content
- Forms – use shorter, multi-step forms rather than lengthy, all-in-one forms
- Feedback – provide prompts, feedback and validations to users

[University of the Sciences - What is Autism?](#)

[Autism is often categorized as a cognitive disability. This *.PDF of a presentation offers accessibility best practices for those with Autism Spectrum Disorder.](#)

[Examples of best practices that can be translated for use at zoos and museums:](#)

- Visual Schedules – post the day’s schedule
- Predictability – provide warnings well in advance of changes, transitions, etc.
- Sensory – assess and note the sensory qualities of the environment
- Space Management – understanding the positives & negatives of wide-open vs. more confined spaces

- General Supports – repeating key/target points, allow time for processing, break down directions, be specific, remain positive, etc.

○ **Sensory Accessibility**

[Middletown Centre for Autism](#)

Though their work is from the point of view of an educator and/or caregiver, much of the information can be seen as best practices for sensory accessibility in zoos and museums. Strategies can be broken down based on the sense linked to a Sensory Processing Disorder (SPD). Additionally, this resource allows you to identify if the person is over- vs. under-responsive. Some examples of strategies are listed below:

- Visual – (over) dim lights, (under) eye-tracking activities
- Auditory – (over) wear noise-cancelling headphones, (under) allow more time to respond to verbal instructions
- Tactile – (over) respect personal space, (under) access to fidget/tactile devices
- Gustatory/Taste – (over) introduce new foods through desensitization process, (under) add spices
- Olfactory – (over) areas should have appropriate ventilation & air flow, (under) access to scented samples
- Vestibular/Movement – (over) avoid activities at height or where a fall could occur, (under) space to move and play
- Proprioceptive/Body awareness – (over) respect personal space, (under) provide resistance bands, weighted blankets, etc.

[KultureCity](#)

KultureCity is working on developing and publishing a guideline for sensory triggers as they pertain to space, based on their experience in numerous venues of differing capacities and type. They will share the guidelines with us when complete.

○ **Language Accessibility**

Language accessibility applies to programming and materials. It is not translation alone – materials and programs should be designed in a way that the message will be relevant when translated or, even better, doesn't require language translation to be understood. The goal is for all guests to be comfortable and independent as they engage with the zoo.

Resources:

Translation: Getting it Right – American Translators Association
Cultural Competence Self-Test

A Few Inclusive and Accessible Translation Best Practices - Metro Universal Design Principles

Equity Lens

- **VISION:** The Oregon Zoo's interpretation provides guests with equitable opportunities for a transformative and inspirational Oregon Zoo experience.

When we have successfully created interpretive programming and materials in an equitable and inclusive way, we will see guests from a wide diversity of backgrounds, including multiple cultures, comfortably engaging and having access to the Zoo. They delight in connecting with animals and are inspired to take conservation action in ways that align with multicultural perspectives. They feel connected and safe while at the Zoo, and take away something new that they've learned.

- **Relevancy Norms & Best Practices**

We strive to create "transformative experiences" that examine the values and principles of American and global societies as a way for individuals to examine their own beliefs.

The following criteria will apply to both personal and non-personal interpretation opportunities; to ensure we engage visitors in content that is connected with the Zoo and relevant. Interpretive programs will receive peer and supervisory review to enhance new and existing programs.

- **Relevancy Criteria**

- Create a safe and welcoming environment in which audiences can examine their own behavior and beliefs by listening, responding, and incorporating community opinions and ideas
- Be grounded in the lives of the participants by making connections to their home communities, cultures and generation
- Use appropriate techniques to engage diverse audiences in dialogue about past and present social, cultural, economic, and/or environmental issues linked to the Zoo's strategic messaging
- Portray accurately and equitably the cultural and racial diversity of conservation efforts, moving away from the dominant cultural narrative
- Promotes perspectives that value a multicultural and inclusive community
- Recognize and challenge systems and institutions that support the inequality and exclusion of specific groups of people based on their gender, race, sexual orientation or other demographic
- Recognizing and valuing what guests bring to the Zoo and contribute to our community

- **Norms for Continuous Improvement & Learning**

Staff and volunteers are inspired through the Zoo's norms to do the internal work necessary to challenge power structures that are historically rooted in the dominant cultural narrative in conservation efforts, with the vision of making the Oregon Zoo, our communities, and the world more equitable.

To do this, we will:

- Acknowledge historical oppression within zoo/conservation/wildlife management.
- Honor and amplify conservation narratives within First Nations/indigenous cultures and communities of color.
- Seek to collaborate and receive permissions with diverse audiences and stakeholders to share stories.
- Use the equity lens early, often and consistently.

Customer Service - Customer service is different than interpretation but is critical to the success of interpretive efforts. Getting zoo guests to feel comfortable, safe and welcome is the foundation of learning and all zoo interpretation should incorporate customer service best practices where possible. Additionally, all customer service focused staff should receive some interpretive training because they are often in a position to best deliver key messages to zoo guests.

Approved Content Sources –

NOTE:

Best practice is to cross reference using 3 or more sources if possible

Journals

Peer reviewed journals can be used as primary sources when possible. The following list are recommended. The zoo has limited subscriptions (noted below) but access to specific articles can often be gained by members of the Conservation and Animal Welfare Research team if needed. Google Scholar can be used to for a free article search.

- Animal Welfare
- Applied Animal Behaviour
- Animal Behaviour
- Animals
- Companion Animal
- Journal of Applied Animal Welfare Science
- JAAWS Physiology and Behavior
- Zoo Biology (Oregon Zoo subscription)
- JZAR (Journal of Zoo and Aquarium Research) – open access

- International Zoo Yearbook – open access
- PLOS one – open access
- Conservation Biology
- Animal Conservation
- Conservation Psychology
- Biological Conservation
- Aquatic Conservation
- Conservation and Society
- Journal of Environmental Psychology
- Journal of Wildlife Management

General sites

*IUCN Red List - <http://oldredlist.iucnredlist.org/>

7IUCN

Among many other helpful things, this includes the SSC Groups database -

<https://www.iucn.org/commissions/ssc-groups>

Includes websites, newsletters, and names of specialists and their emails for Mammals, Amphibians/Reptiles, Birds, Fishes, Invertebrates.

Websites link to recent academic articles.

*Arkive.org <http://www.arkive.org/>

*AZA SAFE - <https://www.aza.org/aza-safe>

*AZA Care Manuals - <https://www.aza.org/animal-care-manuals>

[AZA SSP Sustainability Reports \(requires AZA membership login\): https://www.aza.org/animals-and-conservation](https://www.aza.org/animals-and-conservation)

Science Daily Plants and Animals News (for new research on species) –

https://www.sciencedaily.com/news/plants_animals/

Nature - <http://www.nature.com/>

Science - <https://www.sciencemag.org/>

Map of Life – Range maps, supported by NASA and NSF; Partners include The Field Museum, African Conservation Centre, IUCN, and others - <https://mol.org/species/>

Encyclopedia of Life – www.eol.org

American Museum of Natural History

<https://www.amnh.org/exhibitions/permanent-exhibitions>

Zoo websites

*Smithsonian's National Zoo & Conservation Biology Institute

<https://nationalzoo.si.edu/animals>

*San Diego Zoo

Animals and Plants - <https://animals.sandiegozoo.org/>

San Diego Zoo Global Library - <http://ielc.libguides.com/sdzc/factsheets/index/>

Chester Zoo, Upton by Chester, in Cheshire, England

<https://www.chesterzoo.org/explore-the-zoo/animals>

Species information [Used in addition to the General Sites]

Amphibians/Reptiles

The Reptile Database, Zoological Museum of Hamburg

<http://www.reptile-database.org/>

7IUCN/SSC Amphibian Survival Alliance - <http://www.amphibians.org/resources/>

Amphibia Web, UC Berkeley

<http://amphibiaweb.org:8000/index.html>

Crocodylians, Florida Museum of Natural History, Field Museum

<http://crocodilian.com/>

Aquatic mammals

Polar Bears International - <https://polarbearsinternational.org/>

Monterey Bay Aquarium - <http://www.montereybayaquarium.org/animals-and-exhibits/animal-guide/marine-mammals>

Asian elephants

Silent Thunder: In the Presence of Elephants by Katharine Payne

The Living Elephants by Raman Sukumar

Elephant Listening Project - <http://www.birds.cornell.edu/brp/elephant/index.html>

Dissertation and Articles by Shermin de Silva

De Silva blog, “Maximus,” which features research on Asian elephants by her and other researchers - <https://asianelephant.wordpress.com/about/>

Wildlife Conservation Society re elephant conservation – <https://www.wcs.org/our-work/wildlife/elephants>

International Elephant Foundation - <https://elephantconservation.org/>

Birds

Cornell Lab of Ornithology Birds of North America - <https://birdsna.org/Species-Account/bna/home>

Neotropical Birds - <https://neotropical.birds.cornell.edu/Species-Account/nb/home>

National Audubon Society - <https://www.audubon.org/birds>

Alive: Handbook of the Birds of the World (website requires an active \$35/year subscription) - <https://www.hbw.com/>

Cats

IUCN Species Survival Commission – Cat Specialist Group
<http://www.catsg.org/index.php?id=1>

Cougars

Living with Wildlife, Washington Department of Fish & Wildlife – <https://wdfw.wa.gov/living/cougars.html>

Cheetahs

African Wildlife Foundation – <https://www.awf.org/wildlife-conservation/cheetah>

Conservation

IUCN/SSC Conservation Planning Specialist Group - <http://www.cpsg.org/>
and
<https://www.iucn.org/ssc-groups/disciplinary-groups>

IUCN – Conservation Tools - <https://www.iucn.org/resources/conservation-tools>

IUCN Red List of Ecosystems - <https://iucnrle.org/>

Center for Biological Diversity - <https://www.biologicaldiversity.org/species/>

Palm Oil

Orangutan Land Trust - <http://www.forests4orangutans.org/palm-oil/>

Deforestation, global warming and palm oil

Union of Concerned Scientists -

<https://www.ucsusa.org/search/site/deforestation#.W-No53CIXA8>

Cheyenne Mountain Zoo – palm oil page - <http://www.cmzoo.org/index.php/conservation-matters/palm-oil-crisis/>

Domesticated animals

Oklahoma State website: Breeds of Livestock, Department of Animal Science -

<http://afs.okstate.edu/breeds>

Giraffe

Giraffe Conservation Foundation - <https://giraffeconservation.org/>

IUCN/SSC webpage on giraffes - <http://www.giraffidsg.org/giraffe/>

Invertebrates

<https://xerces.org/>

Arizona-Sonora Desert Museum - http://www.desertmuseum.org/books/nhsd_inverts.php

Primates

Primate Info Net, National Primate Research Center, University of Wisconsin Madison

<http://pin.primate.wisc.edu/factsheets/>

IUCN/SSC Primate Specialist Group - <http://www.primate-sg.org/>

Lemurs

Duke Lemur Center – <https://lemur.duke.edu>

IUCN: Emergency 3-year Action Plan for Lemurs –

<https://www.iucn.org/content/emergency-three-year-action-plan-lemurs>

Lemur Conservation Network –

<https://www.lemurconservationnetwork.org/>

Orangutans

Orangutan Foundation International - <https://orangutan.org/orangutan-facts/>

Orangutan Foundation in London - <https://www.orangutan.org.uk/orangutans>

Borneo Orangutan Survival Foundation - <http://orangutan.or.id/orangutans-fact/>

Chimpanzees

Jane Goodall Institute of Canada - <http://www.janegoodall.org/our-work/>

African Wildlife Foundation –
<https://www.awf.org/wildlife-conservation/chimpanzee>

Rhinos

International Rhino Foundation - <https://rhinos.org>

Care for Wild Rhino Sanctuary - <https://www.careforwild.co.za/>

Rhino Keeper Association on Rhino management -
<https://www.rhinokeeperassociation.org/management>

WAZA –
<http://www.waza.org/en/site/conservation/waza-conservation-projects/black-rhino-conservation-and-tourism>

AZA SAFE on Black rhinos - <https://www.aza.org/SAFE-black-rhino>

IUCN African Rhino Specialist Group –
<https://rhinos.org/research-publications/iucn-african-rhino-specialist-group/>

San Diego Zoo Global Wildlife Conservancy on rhinos <https://endextinction.org/wildlife/rhino>

Salmon

US Environmental Protection Agency on Chinook salmon –
<https://www.epa.gov/salish-sea/chinook-salmon>

NOAA Fisheries
https://www.westcoast.fisheries.noaa.gov/fisheries/salmon_steelhead/lower_columbia_river_chinook_salmon_tules.html

Columbia River Inter-Tribal Fish Commission –
<https://www.critfc.org/fish-and-watersheds/columbia-river-fish-species/columbia-river-salmon/>

National Park Service – Olympic National Park re Salmon Cycle –
<https://www.nps.gov/olym/learn/nature/the-salmon-life-cycle.htm>

USFWS re Chinook Salmon

Vancouver Aquarium - <https://www.vanaqua.org/education/aquafacts/salmon>

Alaska Department of Fish & Game –

http://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view_article&articles_id=407

African wild/painted dog

7IUCN/SSC Canids website - <https://www.canids.org/species/view/PREKNU724601>

Science

Wildlife Endocrinology Research Lab, National Zoo –

<https://nationalzoo.si.edu/center-for-species-survival/wildlife-endocrinology>

Global Climate Change: Vital Signs of the Planet, NASA – <https://climate.nasa.gov/>

Genome News Network -

http://www.genomenewsnetwork.org/resources/whats_a_genome/Chp2_2.shtml

Grammar, Definitions and Synonyms

Grammar and spelling - <https://www.grammar.com/>

Phrase Thesaurus - <https://www.phrases.org.uk/phrase-thesaurus/search/index.html>

Synonyms - <https://www.thesaurus.com/>

Definitions - <https://www.merriam-webster.com/>

Comparisons - <https://www.diffen.com/>

Animal group names –

<https://www.mnn.com/earth-matters/animals/blogs/99-strange-collective-animal-names>



PROJECTS SCHEDULE
Oregon Zoo Bond Program
 As of Oct. 11, 2019

Oregon Zoo Bond Citizens'
 Oversight Committee Meeting
 Nov. 13, 2019
 Agenda item E

Task Name	Start	Finish	2019				2020				2021			
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	
Projects Schedule 20191011	10/1/09	3/10/21												
Water Main Building	10/26/09	7/29/11												
Veterinary Medical Center	11/12/09	1/24/12												
Land Use Permits	3/16/10	1/28/13												
Comprehensive Capital Master Plan	6/2/10	11/3/11												
Penguinarium Filtration	11/1/10	2/29/12												
Condors of the Columbia	7/25/12	3/4/14												
Elephant Lands	11/7/11	12/7/15												
Percent for Art	10/1/09	6/25/20	█ Percent for Art											
VMC Commissioned Art	10/1/09	1/24/12												
Art Conservation/Remove-Relocate Art	5/16/12	6/30/18												
Major Art Commission #1 (Elephant Lands)	5/13/13	9/30/15												
Major Art Commission #2 (Education Center)	4/1/14	11/30/16												
Major Art Commission #3 (Polar Passage)	3/1/16	6/25/20												
Interpretive Experience	3/19/12	9/25/20	█ Interpretive Experience											
Interpretive Roadmap	3/19/12	9/30/12												
Condors of the Columbia Interpretives	6/14/12	3/7/14												
Elephant Lands Interpretives	6/25/12	11/13/15												
Wayfinding Design/Solicitation	3/17/14	12/31/15												
Wayfinding Construction/Install Pylons/4 Kiosks	1/2/16	6/28/17												
Wayfinding Install Central Plaza Kiosk; Post-construction	8/3/20	9/25/20												
Education Center	3/21/13	6/30/17	█ Education Center											
Early Demolition	3/21/13	6/12/13												
RFP Design	1/21/14	4/18/14												
Design	4/21/14	9/11/15												
Construction	9/15/15	12/28/16												
Post Construction	12/29/16	6/30/17												
Polar Passage/Primate Forest/Rhino Habitat	2/9/16	3/10/21	█ Polar Passage/Primate Forest/Rhino Habitat											
RFP Design	2/9/16	6/20/16												
Polar Passage Design	6/21/16	5/13/18												
Primate Forest/Rhino Habitat Design	11/17/16	8/31/18												
Construction	6/4/18	1/7/21												
Post Construction	1/8/21	3/10/21												
Electrical Infrastructure	4/3/17	5/31/19	█ Electrical Infrastructure											