BRANDYWINE ZOO







MASTER PLAN REPORT — FINAL

DECEMBER 11, 2018











BRANDYWINE ZOO Master Plan

Prepared for:

The State of Delaware

Department of Natural Resources and Environmental Control Division of Parks and Recreation

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Photos on Cover-Brandywine Zoo Entry, Andean Condor, Red Panda



Purpose

This document will serve as the beginning of a plan for the Brandywine Zoo for the Delaware Department of Natural Resources and Environmental Control.

This plan replaces the previous Master Plan completed in 2007, and will be revised as the design process continues. This plan was presented at an open house for public comment and feedback.

The State of Delaware

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BRANDYWINE ZOO

Master Plan Report May 2018

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INTRODUCTION

There has never been a more important time for the Brandywine Zoo to reimagine itself. The Brandywine Zoo is a treasured community asset, nestled in the iconic Brandywine Park. It is also Delaware's only zoo. Despite this, declining attendance, stagnant financial growth and a subsequent lack of funds needed to invest in both the maintenance of current facilities and creation of new exhibits and experiences for guests demands that the Zoo undergo significant change. It is imperative that as the State's only zoo, staff and Board leadership and Delaware State Parks work together now to transform the Zoo to preserve what makes it distinct while enhancing it for future generations.

Guiding the new Master Plan is a bold vision of complete and achievable transformation. This plan imagines a new Brandywine Zoo that will offer guests exciting and immersive experiences through new and expanded exhibits and programs. The timing is right for this transformation, as it will occur in tandem with the renaissance of the entire 47-acres of Brandywine Park. Guests will be able to do more than visit an amenity in the Park or visit the Zoo; rather, guests will be drawn to a new destination that offers the convenience of easy access while transporting visitors to a quiet, country-like setting, away from urban congestion – all while still within Wilmington.

The first step in this re-imagination is capturing this vision through the development of a new Facility Master Plan. The projects outlined in the plan are prioritized by impact on the guest experience balanced with missiondriven imperatives, including animal welfare and addressing key priorities articulated during a recent inspection of the Zoo by the Association of Zoos & Aquariums (AZA).

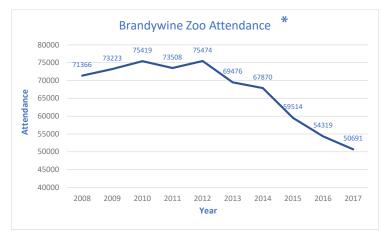
The vision behind the Plan prioritizes short-term projects with external impact (i.e. guest experience), as they will generate revenue, increase attendance and create positive momentum for the Zoo. By beginning with smaller, "bite-sized" projects that strengthen the visitor experience, the Zoo can begin its transformation with success, as it will have selected reasonable, achievable projects that can be executed in a shorter time frame and that demonstrate tangible forward progress to the public. This lays the foundation for leveraging that success and positive momentum into fundraising efforts to raise the money needed to implement the larger projects that will impact animal welfare and infrastructure.

As the Zoo builds positive momentum and success towards achieving its vision, it will be positioned to execute increasingly larger Master Plan projects. Some of these larger projects are mission-driven, in that they may not directly impact the visitor experience, yet are absolutely critical to both animal care and welfare and staff operations. By having quests and donors understand the overall, bold new vision behind the Zoo's systematic renovations, they will have confidence in each step of its transformation regardless of its direct impact on the guest, positioning the Zoo to achieve the financial success necessary to make it all a reality.

ATTENDANCE

Attendance to the Brandywine Zoo from 2008 to 2012 was on average 73,800 guests but has been declining at an alarming rate and was approximately 54,300 guests in 2016, while nationally attendance to zoos is growing. Numerous factors can contribute to the decline, but the team believes the four main reasons are:

- Loss of two important exhibits in 2012 when the Monkey House was damaged and later demolished, and in 2016 when the Tiger was sent to another institution and the facility was demolished.
- Lack of general reinvestment in the Zoo and opening of new appropriate exhibits to replace the attractions eliminated.
- · Quality of the overall guest experience that includes overall stay-time, number of animal exhibits, food and gift, staff interaction and other activities for the guests.
- Locally the competition for time and entertainment has increased and improved, while Brandywine Zoo has fallen behind and failed to focus on its core group of guests.



^{*} See appendix documents for further finances and attendance trends

PLANNING PROCESS

In the spring of 2017, the State of Delaware Division of Parks and Recreation commissioned GWWO, CLR Design, Inc. (CLR) and Schultz & Williams (S&W) to develop a 10 year Master Plan Report for the Brandywine Zoo, located in the heart of Wilmington next to the Brandywine Creek.

GWWO, CLR, and S&W has worked collaboratively with Zoo's staff and staff from the Delaware Parks System to develop a holistic plan that realizes the physical needs of the Zoo and the site surrounding the Zoo.

Between July 2017 and February 2018, the master planning team met for four one-day meetings and workshops at the Blue Barn or at the Brandywine Zoo, each time covering numerous subjects and tasks related to the Master Plan. At workshops, members of staff representing various aspects of the Zoo operations presented program needs and discussed as a group shared goals and expectations for the future of the Brandywine Zoo.

CLR and S&W shared design concepts and analysis based on the stated key plan drivers and goals of the Zoo staff as part of an interactive process by which the Master Plan was developed and refined. This Master Plan is the culmination of the planning process, and is designed to establish a clear step-by-step approach, short-term, and long-term to rebuild Brandywine Zoo and make it a unique asset for the community.

	INVENTORY & ANALYSIS	ANALYSIS & CONCEPT	MASTER PLAN DEVELOPMENT]	
PLANNING PROCESS		TESTING		_	
FROCE33	3 months	2.5 months	2.5 months	-	
	Inventory, Assessment & Analysis	Data Organization & Preliminary Concepts	Final Plan, Project Concepts & Implementation		
WORKSHOP	Aug 2017 - Oct 2017 • Mission/Values	Oct 2017 - Dec 2017 • Existing Building & Exhibit	Dec 2017 - Feb 2018 • Plan Refinement		
KEY COMPONENTS	• MP Goals & Objectives • Opportunities & Constraints • Circulation Analysis • Land Use Analysis • Land Form Analysis • Collection Analysis	Conditions Analysis • Existing Tree Analysis • Preliminary Plan Organization Diagrams • Preliminary Exhibit Concepts • Preliminary Circulation &	Collection Plan Refinement Project Zones/Packages Phasing Scenarios		FINAL COMPREHENSIVE MASTER PLAN REPORT
	Shows & Encounters Guest Services Operations Education Programs	Guest Services Concepts			Initiate Phase #1 Projects
	↓				,,
PRODUCTS	Workshop Notes & Drawings	Workshop Notes, PowerPoint Diagrams & Preliminary Report	Workshop Notes, Illustrative Plan & Preliminary Report		



KEYS TO SUCCESSFUL MASTER PLAN IMPLEMENTATION

Below are critical steps or recommendations that Zoo, the Society and State Parks leadership must take in order to be successful in implementing the projects outlined in the new Facility Master Plan and ultimately, realizing its bold new vision. These steps will guide Zoo and Society leadership in generating awareness and support for the Plan, identifying the ideal funding mix for those projects, telling the "right" story about the Zoo's future and raising the necessary private funding to execute the projects in the plan.

MOMENTUM

- As described in the Plan, the Zoo should begin with smaller, shortterm projects that can successfully be implemented in a reasonable time frame, providing visitors with a sense of tangible change at the Brandywine Zoo.
 - The Zoo will be able to grow its attendance quickly, with the implementation of these short-term opportunities, as they will strengthen the visitor experience and offer something "new" for guests to see and/or experience.
 - The new attendance baseline will be higher than it is today with the growth it will see in response to the opening of major new exhibits.

THE BRANDYWINE VISION

• Zoo and Society leadership needs to develop and effectively tell a new "story" about a reimagined Brandywine Zoo. This "story" needs to include the vision told through the new Master Plan; it also needs to be embedded within the larger vision of the entire Brandywine Park, which is in the process of a renaissance – the Brandywine Zoo will be undergoing steady transformation in tandem with Park-wide changes and improvements. This will entice prospects to invest in the Zoo, not only for its improvement as a community asset, but also because that investment can be leveraged for broader impact on the transformation of the Park itself.

COMMUNITY ENGAGEMENT

Not only does this new "story" need to be developed, it also needs to then be effectively communicated. By sharing this larger vision broadly with the public, with key funders and prospects, community leaders, etc., the level of awareness of the Zoo and its ambitious and exciting plans for the future will dramatically increase. Scheduling meetings with key funders, community leaders and prospects to share the Zoo's new vision will also serve as a form of cultivation and an opportunity to test both their reactions to the vision and subsequently, their willingness to support it philanthropically. By doing all of this, the Brandywine Zoo will become top-of-mind within the community, allowing it to become an increasingly greater philanthropic priority.

COLLABORATION

Collaboration will be key to the Zoo's and Society's success. It will be
important to work with Delaware State Parks, ensuring that all parties
invested in the success of the Brandywine Zoo are consistently on the
same page and working toward the same goals.

FUNDING

- It will be important early on, before beginning to implement the projects outlined in the Master Plan, to identify the mix of funding sources that will allow for the successful execution of both the shortand long-term projects. This will also help leadership to start planning now for those projects that will require raising private dollars, though the execution of a capital campaign. For private fundraising efforts, it will be crucial to learn about major donor prospects and match their interests and giving preferences with appropriate opportunities and projects from the Master Plan.
 - In some instances, this effort can be accomplished through a conversation with a prospect.
 - At other times, it may require a larger effort that includes conducting prospect research and the development of a case for support in preparation for a conversation with a prospect that will lead to a larger ask.

MARKETING

 Approximately 6-12 months in advance of the completion and opening of a project, improvement, etc., begin marketing efforts to build anticipation with guests and donors that something new is coming to the Brandywine Zoo. The Zoo can draw this attention through the use of social media, billboards, on-site marketing with banners, etc.

By following the steps outlined above, the Zoo will be positioned to successfully plan for and implement the projects outlined in its new Facility Master Plan. This will lead the Brandywine Zoo into a new era that includes a strong visitor experience, a more diversified financial model, a positive and visible image within the community at large and the philanthropic community and finally, an institution that is a destination attraction in Wilmington and beyond.

MASTER PLAN DRIVERS

The planning team identified the following four key drivers and strategic approach for the new Master Plan:

1. IMPROVE THE OVERALL GUEST EXPERIENCE

With new quality animal exhibits, guest amenities and support functions to make Brandywine Zoo a destination for connecting the community to nature.

2. CREATE A SUSTAINABLE MASTER PLAN

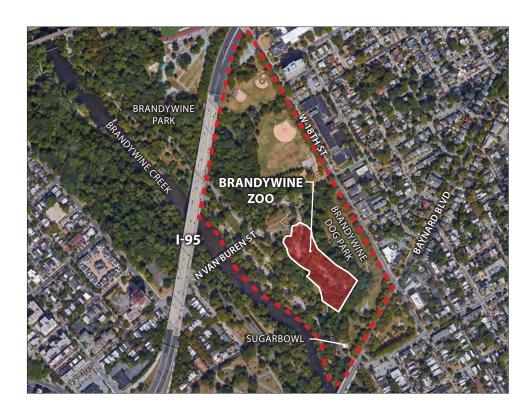
The plan needs to be at a realistic scale to be successfully funded through both public support, in particular, the Delaware State Parks System, and private fundraising over the duration of the Master Plan.

3. IMPROVE THE OVERALL 47 ACRE OF PARKLAND

The area located between I-95 and Baynard Boulevard needs to be improved and turned into a community asset for a variety of recreational activities and educational uses.

4. EXPAND THE ZOO PROPERTY OVER TIME

The current 4.5 acre site will need to be expanded to accommodate the Zoo guest experience and operations.







MASTER PLAN REPORT



MASTER PLAN IMPLEMENTATION SUMMARY

CAPITAL PROJECTS

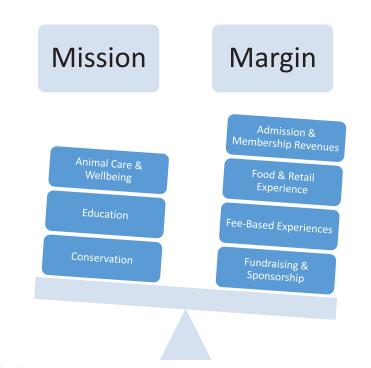
The last significant new investment in the Zoo was seventeen years ago when the gift shop, commissary, restrooms, and education pavilion were constructed. The construction cost was approximately \$1,000,000. The last new animal exhibit constructed was the Tamarin Exhibit that opened in 2015 for a construction cost of \$120,000. Prior to that no new significant exhibits had been constructed for at least 15 years. The lack of new attractions has hurt the growth and guest attendance of the Zoo and there is a great need for projects that can quickly turn this trend around. Therefore, the team developed three project types with very different overall goals, schedule, and cost.

PROJECT TYPES

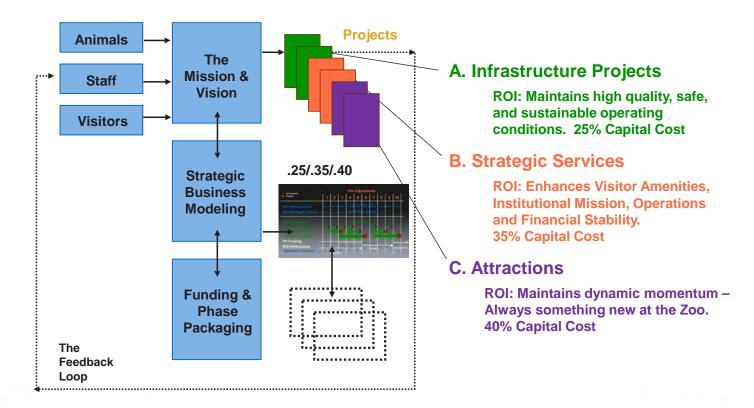
- Small Zoo Projects Simple projects that can be designed and constructed for relatively small cost and be completed in 2018 or 2019 (see conceptual drawings and timeline for eight to ten project ideas, Appendix pages 18-27.) Each one of these ideas needs to be developed further prior to starting construction or fabrication. These projects will not have a great impact on guest attendance but should impact guest experience and stay time. Due to the scale of these projects they cannot replace larger projects with a bigger project budget and longer design and construction time.
- Park/Zoo Projects and Activities The intent of these projects and
 activities is to bring more guests to the park and the Zoo, and to provide
 a variety of entertainment options for guests to select from that they
 would not typically plan on a day at the Zoo. Some of the projects would
 require investment in the park, while other activities could be worked with
 an outside vendor that would supply equipment and staff. Examples of
 the latter could include "BBQ at the Zoo," oversize Lego animal sculptures,
 special climbing/play structures, etc.
- Ten-Year Master Plan Projects The current plan has a balanced project approach between Infrastructure, Guest Services, and Attractions. The majority of the projects focus on upgrading the current developed site and do not depend on North Van Buren Street or North Park Drive to be relocated. The projects are spread out over the duration of the Master Plan, with the first possible opening in the summer of 2019. The sequencing of projects does not depend on the Zoo to close, but takes advantage of the slower months of the year for construction with openings of attractions typically scheduled for May or June of each year.

- Additional Projects The Overall Illustrative Site Plan shows a fully developed plan on the current site. Many of the projects will not be developed over the next eight to ten years due to funding or overall sequencing of key projects. For Master Planning purposes it is important to create the "road map" that is not limited to number of years or funding, rather illustrating the long-term vision of the Zoo. Key projects for long-term vision include:
 - Education Center west of the current building.
 - Guest walkway that extends to the north and creates a guest loop approximately three times longer than the current guest walkway.
 - Service road providing access to most of the proposed new animal exhibits
 - Several new animal exhibits that can be viewed from the new walkway and vary in size from 2,000sf to 7,000sf.
 - Additional guest parking and walkways.

Balancing Brandywine's Model



Big Picture: Capital Project Hierarchies





2018 2019 2020 2021 2022 **2023** 2024 2025 2026 2027 **2028**

IMMEDIATE



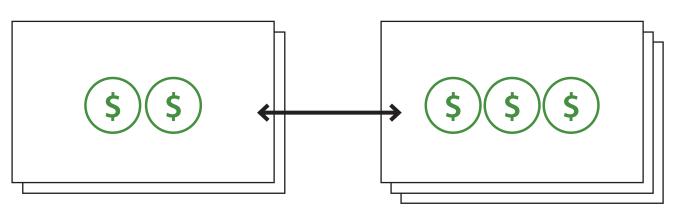
<u>IMMEDIATE</u>

Simple projects which require little investment, ranging from \$10,000 to \$50,000. These projects can be implemented simply and quickly.

These projects include:

- Goat Gateway
- Interpretive Enhancements
- Bee Zone Mural/Embellishment
- Education Building Mural

SHORT-TERM



1-3 YEARS

Several projects need to be dealt with over the next 36 months. These projects range from upgrades to existing facilities to new exhibits. These projects are about bolstering the momentum needed at the Zoo.

These projects include:

- Animal Quarantine Facility
- Hospital and Office Area
- New Otter/Eagle Exhibits
- Flamingos
- Front Entrance
- Seasonal/Interactive Exhibit

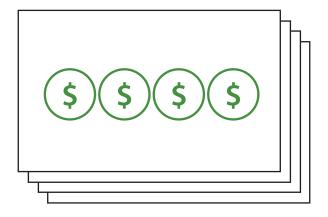
1-8 YEARS

These projects begin the transition from initial momentum-building projects towards more extensive changes. They coincide with the 1-3 year projects while gradually introducing the grand vision of the Zoo without huge changes such as expanding up the hill. However, these changes will likely want to address key factors such as parking. Depending on the amount of funding, these changes could be merged with the 1-3 years projects.

These projects could include:

- Parking Expansion
- · Various mid-sized exhibits
- · Visitor amenities

LONG-TERM



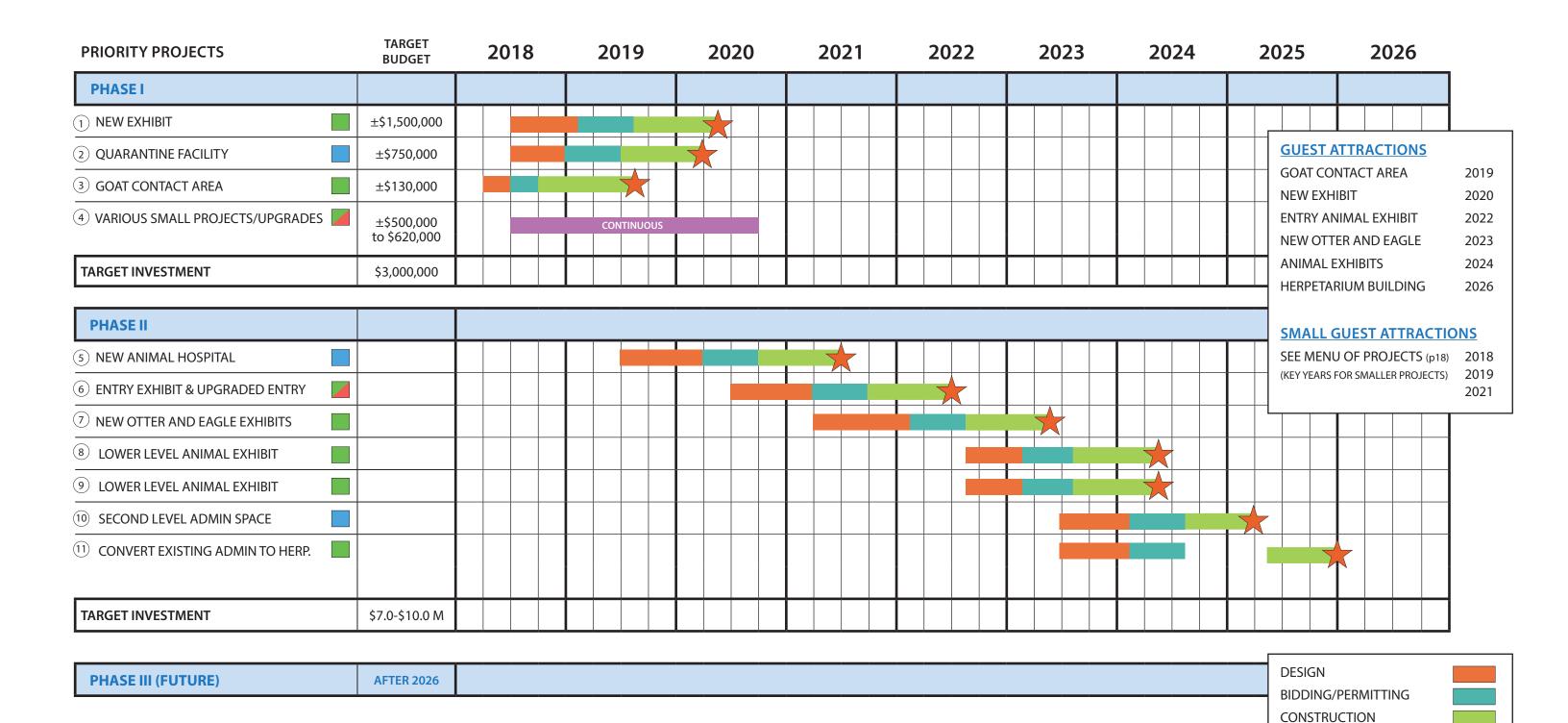
10+ YEARS

The 10+ year projects aim to envision the new Brandywine Zoo. These projects are major changes which require more funding and time for the Zoo to complete.

These projects include:

- · Expanding the overall site up the hill
- Road Realignments
- Two or three major projects
- Changes that effect overall guest and service circulation

IMPLEMENTATION SCHEDULE



PROJECT OPENING

INFRASTRUCTURE GUEST SERVICES

EXHIBITS/ATTRACTIONS



IMPLEMENTATION CONTINUED

PHASE I

- 1 NEW EXHIBIT
- 2 QUARANTINE FACILITY
- 3 GOAT CONTACT AREA
- 4 VARIETY OF SMALL PROJECTS/UPGRADES

PHASE II

- 5 NEW ANIMAL HOSPITAL
- 6 ENTRY EXHIBIT & UPGRADED ENTRY
- 7 NEW OTTER AND EAGLE EXHIBITS
- 8 LOWER LEVEL ANIMAL EXHIBIT
- 9 LOWER LEVEL ANIMAL EXHIBIT
- (10) SECOND LEVEL ADMIN SPACE
- (11) CONVERT TO EXISTING ADMIN TO EXHIBIT

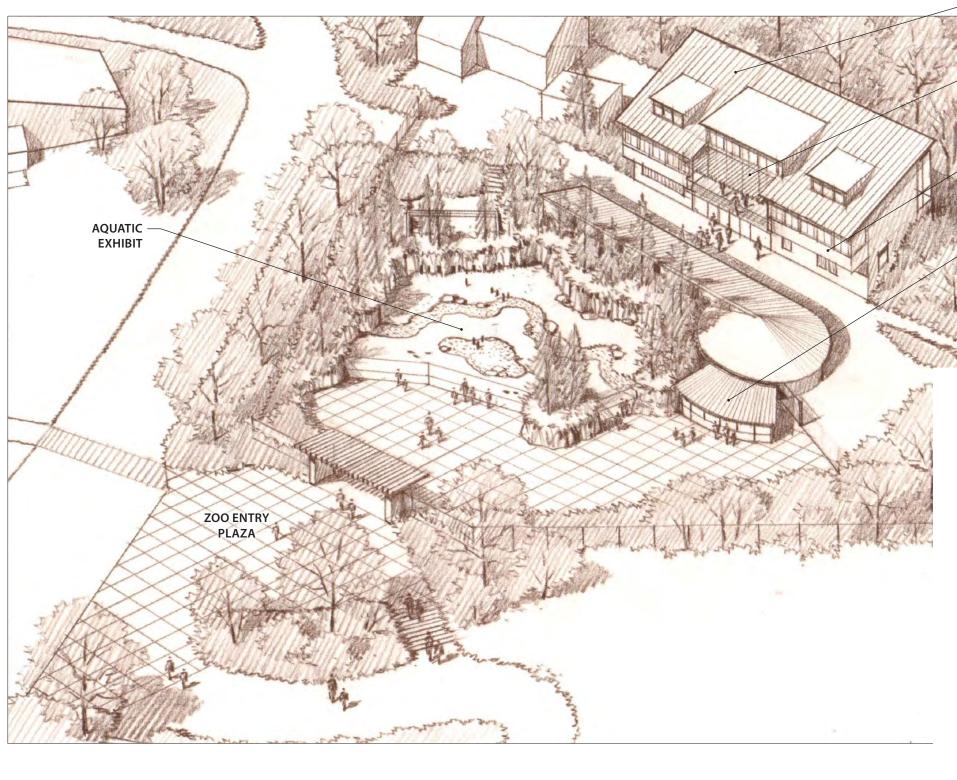




MASTER PLAN PROJECTS



ENTRY BUILDING & PLAZA GATEWAY



ADMINISTRATION SPACE

EXISTING COMMISSARY TO BE RELOCATED (OPTIONAL)

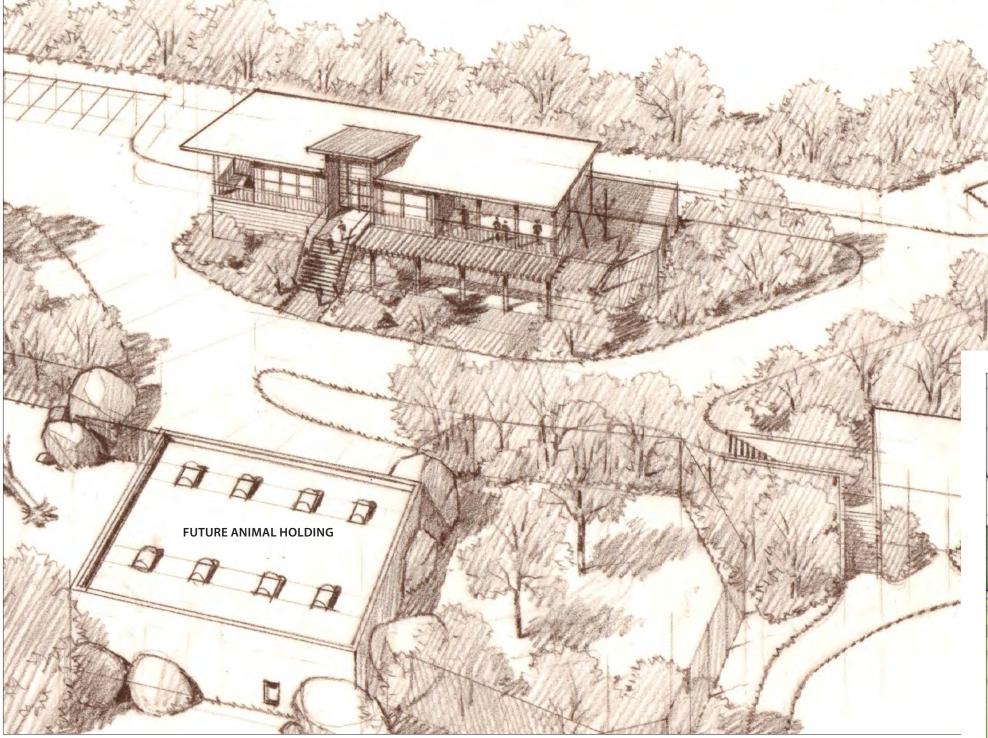
EXISTING RESTROOMS

– TICKETING





ANIMAL WELLNESS CENTER



ANIMAL WELLNESS CENTER

- ANIMAL SURGERY ROOM
- HOLDING/RECOVERY
- STAFF OFFICES
- MEETING ROOM
- OUTDOOR HOLDING
- STORAGE/NECROPSY SPACE
- V.I.P. ZONE

A new facility is proposed to be constructed along the northern edge of the Zoo property. The existing building would stay and be modified into an animal holding building. New exhibits would be constructed on the west and north sides of the building.

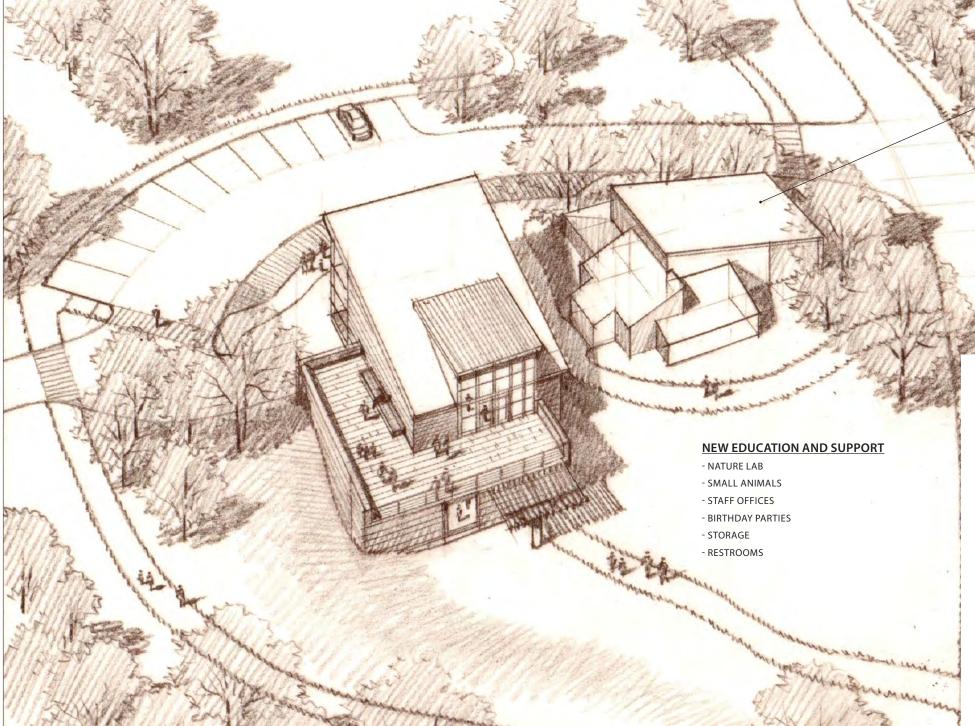






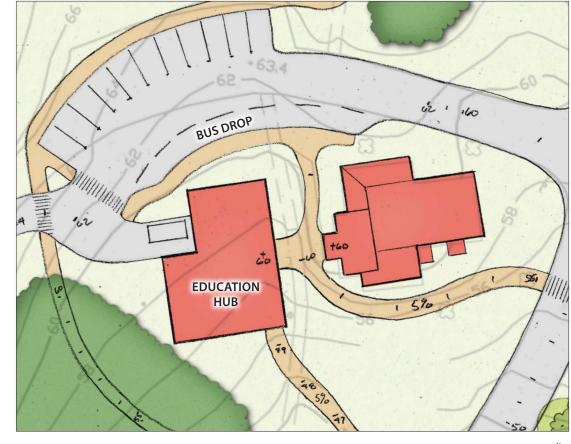


EDUCATION HUB (FUTURE)



EXISTING EDUCATION BUILDING TO BE RENOVATED

A new education center is proposed west of the current building or the current building can be renovated and expanded. The open space surrounding the building provides an opportunity to construct outdoor classrooms, discovery trails, and other features that support the mission of the Zoo's education program.





NORTHERN TRAIL (FUTURE)

Current animal zone west of the Otter exhibit should be demolished and replaced with new animal area. This area can be developed and expanded to the east without impacting the current Otter exhibit.

- Trail takes guests to higher elevation of zoo (from ± 40' to ±64')
- Plan does not depend on steps, elevators or escalator to move guests
- Path max slope is 8% or less
- Variety of smaller exhibits can be located along the trail







APPENDIX



SHORT TERM UPGRADES

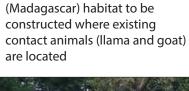
18-24 MONTHS

EDUCATION BUILDING EXTERIOR MURALS

BEE ZONE

- Move fence back & paint
- · Provide photo opportunity
- "This is how we take care of our animals" infographic





CONTACT ANIMAL EXPERIENCE

• Existing river otter exhibit to be

converted into a new Contact

Animal experience • New Lemur Lookout

ENTRY PLAZA EXPANSION

- Improved signage with a fun animal sculpture at entry; provide photo opportunity





• Bolder entry announcement







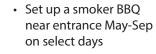




PHOTO-OPS

• One of multiple photo

ops throughout the

Zoo - free advertising

- "Quarters for Conservation" and other fundraising campaigns for new projects
- Small rotating exhibit or outreach animal

N. PARK DRIVE



TAMARIN CORNER

- Move gate back
- Improve overall look and expand habitat experience with mesh trail



RIVER OTTER

EXPANDED EAGLE DECK

- Expand Deck
- · Create an animal encounter station

GOAT GATEWAY

- Define goat petting encounter with new gateway
- Paint mural on goat holding building

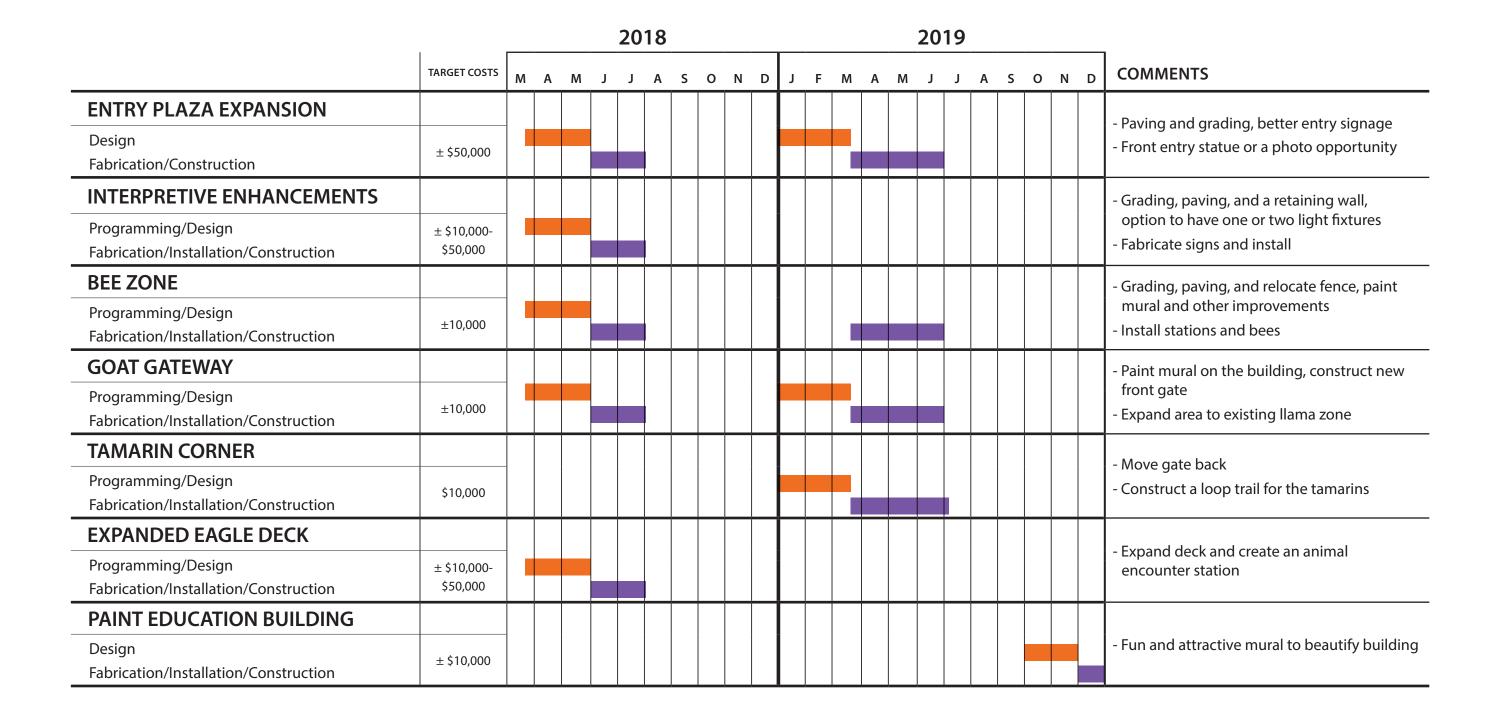








SHORT TERM TIMELINE



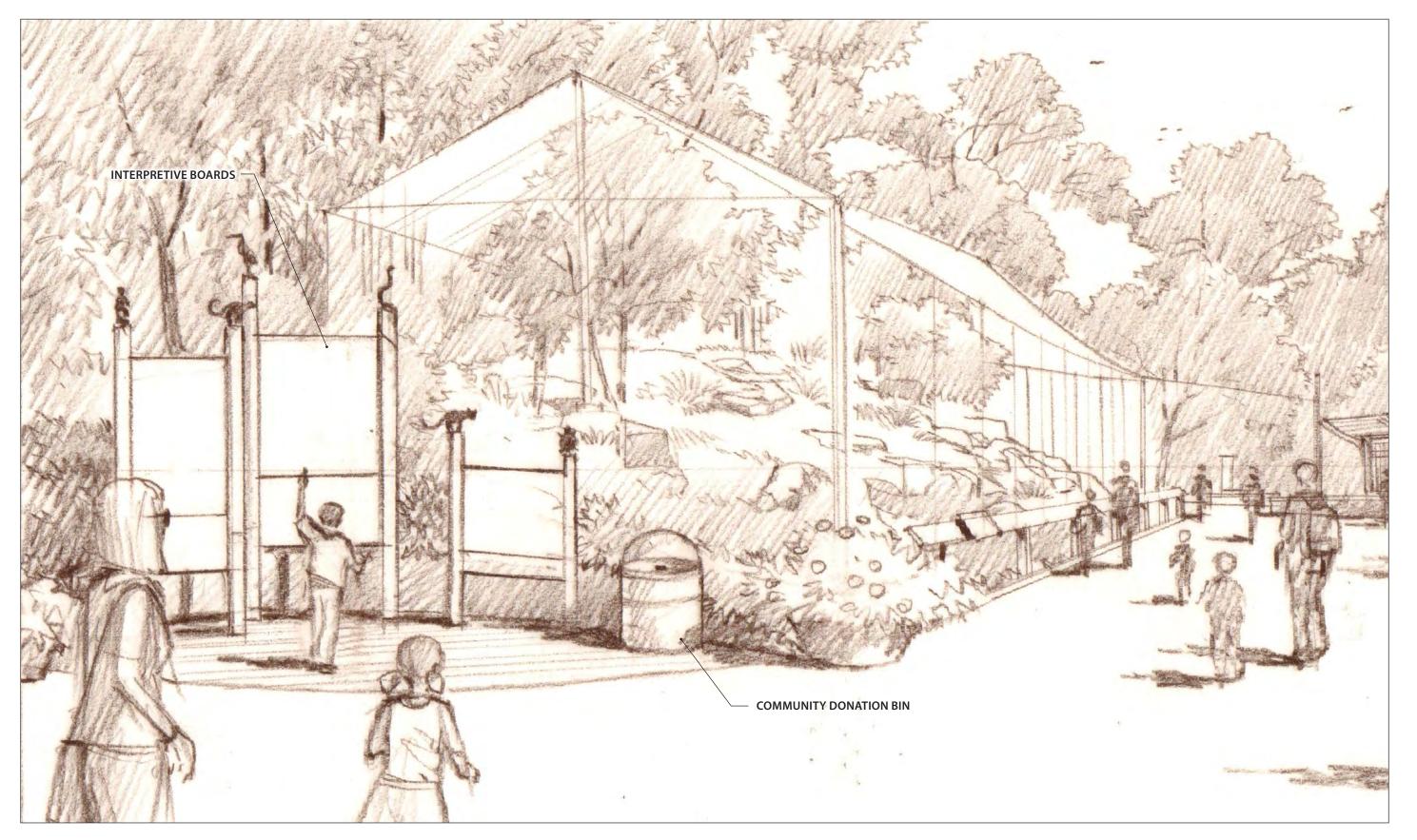
ENTRY PLAZA EXPANSION





ENTRY

INTERPRETIVE ENHANCEMENTS





BEE ZONE



GOAT GATEWAY









SHORT-TERM UPGRADE BREAKDOWN

18-24 MONTHS

The goal is to create a "menu" of ideas that can be implemented in the next 18 to 24 months for a small investment and time commitment. It is critical for the Brandywine Zoo to create an "early win" that will generate excitement and buzz with patrons, Zoo staff, and the community. This excitement will help provide momentum for larger growth as outlined in the Master Plan.

PROJECT CATEGORIES:

(A) Animal Exhibits

(B) Kids Activities

C Food and Guest Comfort

POTENTIAL INVESTMENT COSTS:

- Minimal
- \$10,000 +/-
- \$10,000 \$50,000
- > \$50,000

GOALS:

- 1. Improve existing areas
- 2. Provide a new activity for guests
- 3. Create a short-term bridge to future, larger projects

(A) ANIMAL EXHIBITS

PRAIRIE DOG MAZE

Change existing area around "historic walls" into a prairie dog exhibit. Walls can look like an old farm building or farm structures that have been abandoned and the prairie dogs have made it their home. Construct new barriers in front of the walls for viewing.

- Increases stay time
- Opportunity for Sponsorship
- Cost: > \$50,000
- Location: Existing Red Panda, Swift Fox, and Serval Habitats will need relocation

AVIARY

Extend mesh enclosure over the wooden boardwalk so guests can walk through the "duck" exhibit. Explore if more animals can be added to the enclosure.

- Increases stay time
- Opportunity for Sponsorship
- Cost: > \$50,000
- · Location: Existing Duck Exhibit

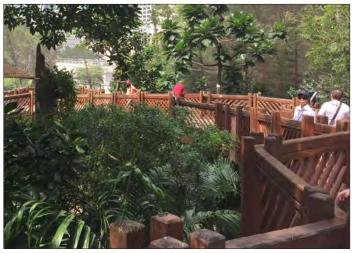
ANIMAL FEEDING AND DEMONSTRATIONS

Provide group feeding opportunities wherever possible. Schedule regular feedings during the day, weekdays included. Feedings may be a paid experience. Encourage staff to also have "pop-up" interactions with guests.

- Increases repeat & scheduled visits
- Cost: Minimal
- Location: Throughout zoo



















SHORT-TERM UPGRADES

18-24 MONTHS

B KIDS ACTIVITIES

OBSTACLE COURSE PLAY AREA

Create a fun, new play area with elevated bridges, netting, spiderweb netting, small slides. Take advantage of the existing land form to make this an exciting experience for children ages 3-6 +/-.

Increases stay time

• Opportunity for Sponsorship

• Cost: > \$50,000

• Location: Near existing amphitheater

PHOTO OPPORTUNITY

Select eight to ten locations for children and adults with a photoopportunity station. Themes should be fun, educational, can be animal-themed, and should reference the Brandywine Zoo. A great and easy way to generate social media presence at little cost.

• Immediate marketing boost via social media

Opportunity for Sponsorship

• Cost: \$10,000 +/- or less

• Location: Throughout Zoo

















SHORT-TERM UPGRADES

18-24 MONTHS

© FOOD & GUEST COMFORT

FOOD TRUCK OR CARTS

Bring in various food trucks in combination with larger "pop-up" experiences at the Zoo. Can be regularly scheduled or on varying days to attract visitors during the week.

Increases stay time

Opportunity for Sponsorship

Cost: Minimal

Location: Inside or outside Zoo

SMOKED BBQ DAYS

May through September, designate one day a week for an outdoor BBQ near the Zoo entrance. The smell of cooking food will work its way though the park and entice new visitors to the Zoo. Can be part of larger "pop-up" events and promotions.

Easy set-up and easy take-down

Opportunity for Sponsorship

Cost: Minimal

• Location: Inside Zoo near entrance







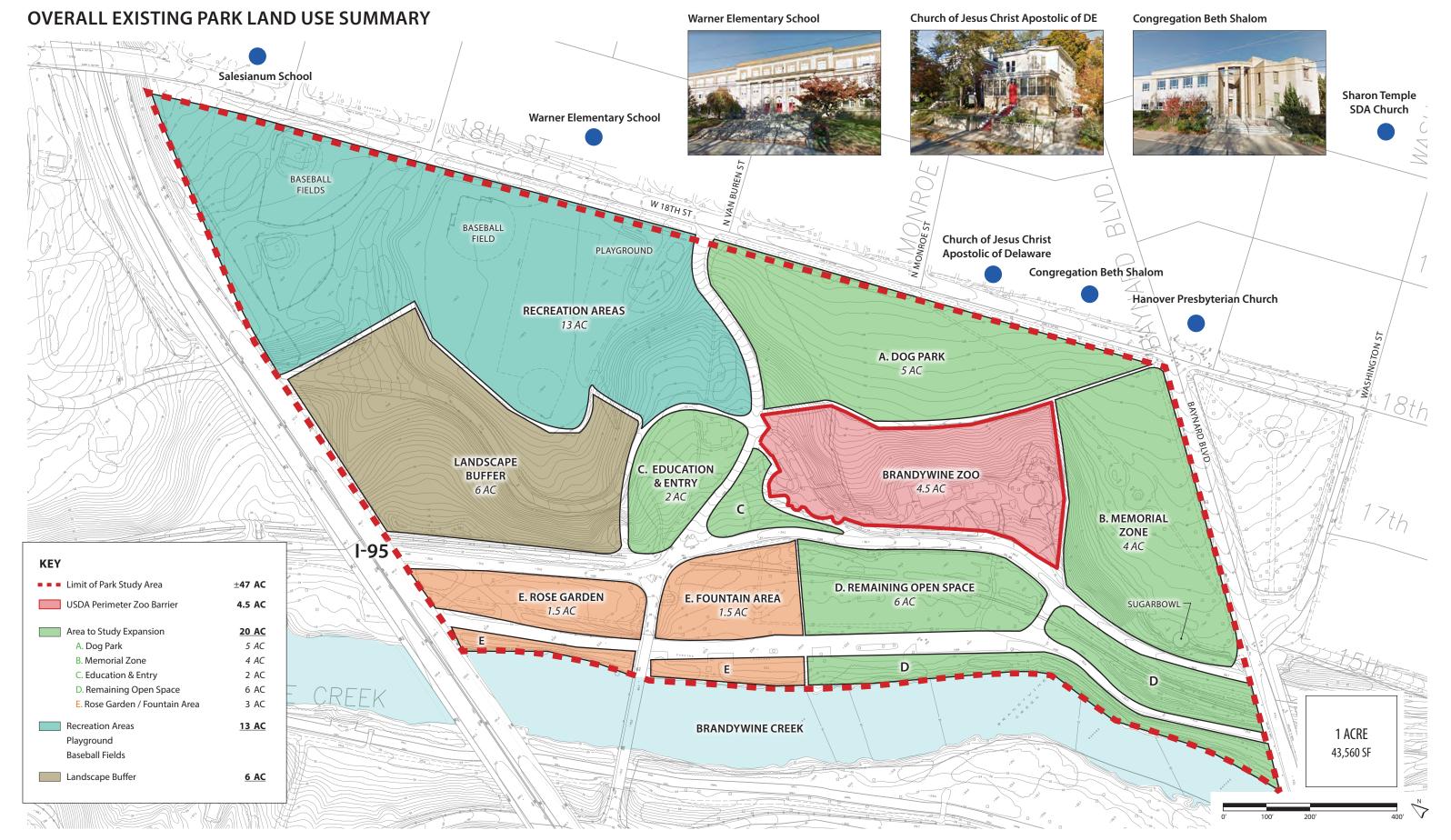






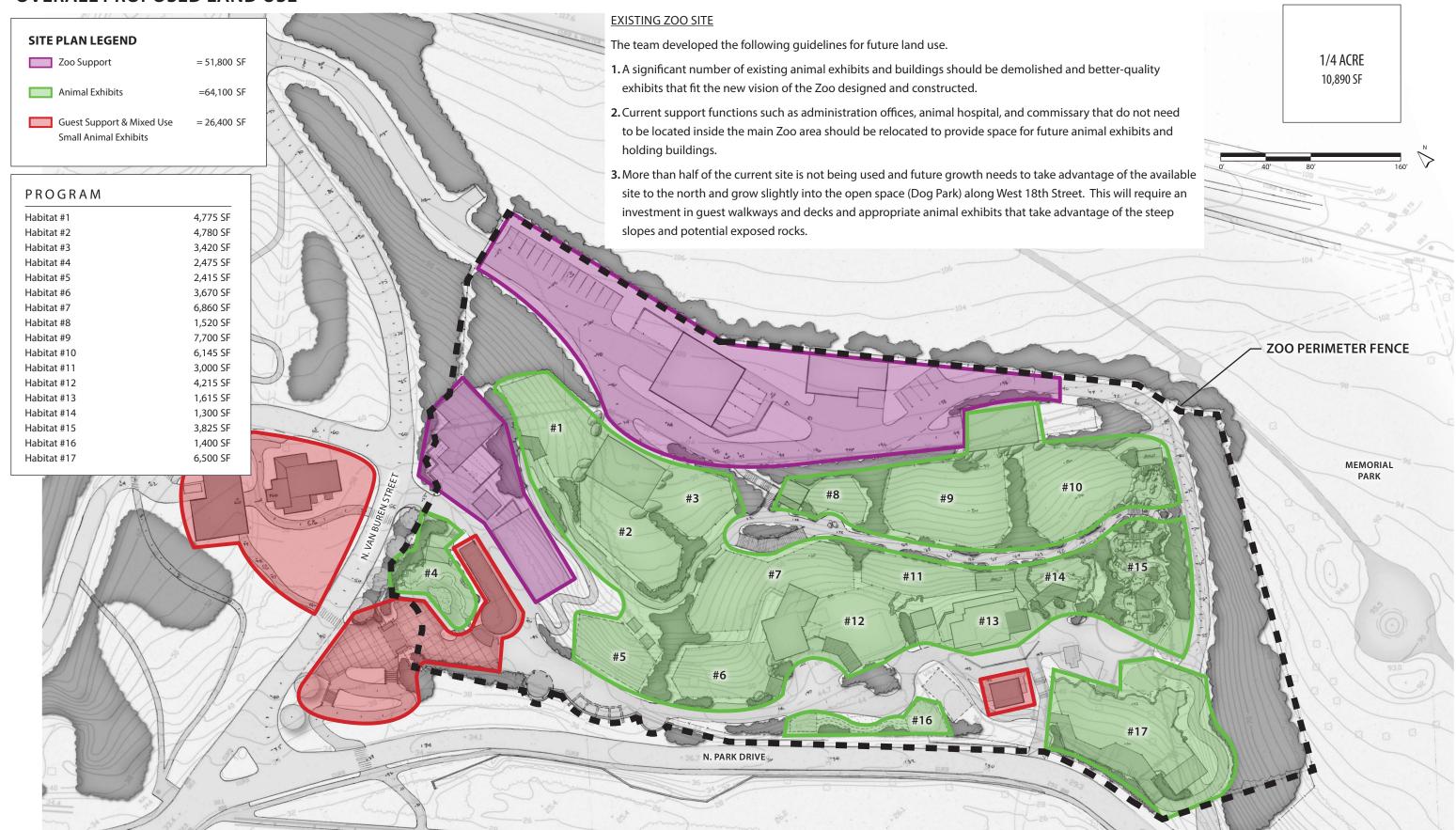
ADDITIONAL SUGGESTIONS:

- Llama Yard Deck Feedings
- Eco-exploration backpack tours
- Train loop in the park
- Small climbing wall
- Temporary Farmyard Encounter Zone
- "Quick-Fixes" at existing
 Zoo features





OVERALL PROPOSED LAND USE



PROPOSED SPECIES

#	CURRENT	PROPOSED	THEME	CONSERVATION STATUS	TEMP CUT-OFF (°F)	EXHIBIT SQ.FT	COMMENTS
1	New	Colobus Crested Porcupine	Africa	SSP SSP	60 55	4,775	Active primate housed in small groups. Training opp. World's largest porcupine species. Potential feeding opportunity.
2	New	Spotted Hyena	Africa	SSP	35	4,780	Unique animal in this area. Visitor connection to the Lion King. Training opportunity. BTS opportunity.
3	New	Red River Hog Bat Eared Fox	Africa	SSP	55	3,420	Active attractive species. Visitor interaction opportunity. Active unique species.
4	New (entry)	Ducks (short term) Flamingos (long term) Sloth Pudu	S. America	SSP SSP SSP	10 50 50	2,475	Mixed species with high visitor recognition. Feeding opportunity for the guests. Visitor favorite. Potential guest interaction. World's smallest deer species.
5	Condor	Condor	S. America	SSP	NA	2,415	Popular with the visitors due to large size.
6	Bobcat/Porcupine	Jaguar	S. America	SSP	35	3,670	Powerful carnivore and one of the few cats that will swim. BTS opportunity.
7	New	Sloth bear	Asia	SSP	40	6,860	Unusual, shaggy bear with elongated muzzle. Excellent enrichment opportunities. BTS opportunity.
8	New	Red panda Goral White-naped crane	Asia	SSP SSP SSP	NA NA NA	1,520	Current visitor favorite. Design exhibit for breeding. Small, goat-like, cold tolerant, active species. Active species that mixes well with pandas and goral.
9	New	Markhor	Asia	SSP	NA	7,700	Active mountain dweller. Can rotate with snow leopard for increased activity. BTS opportunity.
10	New	Snow Leopard	Asia	SSP	NA	6,145	One of the world's most beautiful cats. Can rotate with markhor for increased activity. BTS opportunity.
11	New	Siamang Binturong	Asia	SSP SSP	NA NA	3,000	Very vocal and active species. High visitor interest. Training demos.
12	Historic Cages	Maned wolf Giant anteater Capybara	S. America	SSP SSP SSP	40 32 20	4,215	Striking species. Training and BTS opportunities Unusual species. Unique to the area. Feeding and BTS opportunities. Visitor favorite, active swimmer. Interaction and BTS opportunities.
13	Admin	Reptiles	Mixed		NA	1,615	Indoor space. Wide diversity of birds, mammals reptiles possible. Komodo dragons in the outdoor space. BTS opportunity.
14	Townhouses	Otter Eagle Raven	N. America	SSP NA	NA NA NA	1,300	Unique acrylic slide through the pool. Training and BTS opportunity National bird and recovery story. Active and vocal.
15	Otter & Eagle	Lynx Porcupine Wolverine	N. America	SSP SSP SSP	NA NA NA	3,825	Ghost of the forest. Replace bobcat. Training and BTS opportunity. Visitor favorite. Largest land weasel. X-men connection. Training and BTS opportunity.
16a	New may or may not be connected to 16b	Red panda Callitrichid	S. America	SSP	50	1,400	Pandas could be housed here if the historic cages are taken down before a new panda exhibit is built. Various tamarins and marmosets will be housed here. Training opportunities.
16b	New may or may not be connected to 16a	Red panda Callitrichid	S. America	SSP	50		Pandas could be housed here if the historic cages are taken down before a new panda exhibit is built. Various tamarins and marmosets will be housed here. There will be an up charge for these interactions.
17	Llama	Ring tail lemur Red ruff lemur Crowned lemur Radiated tortoise Birds	Madagascar	SSP SSP SSP SSP & SAFE	45 40 50 60	6,500	Popular. More terrestrial. small group of 3-5. Interaction opportunity Popular. More arboreal. small group of 3-5. Interaction opportunity Rare species. Sexually dimorphic. Housed in pairs. Interaction opp. One of the world's rarest and most beautiful tortoises. Glass fronted viewing into exhibit on top of holding – party space?
18	Goats	Food concession					Move concessions out of the proposed tropical building and add a small seating area.

SELECTION CRITERIA

The team spent significant amount of time discussing the appropriate animal mix for the Zoo. The list of animals developed had to satisfy four criteria.

SPACE AND TOPOGRAPHY

With the limited amount of overall exhibit space available and steep terrain the animals selected are small to medium in size. They will naturally do well on slopes and exposed rock ledges.

CONSERVATION STATUS

The team looked at the conservation status of each of the animals and most of the animals are included in the AZA Species Survival Program (SSP).

CLIMATE

The Zoo is open year round so it is important that the animals selected do well year round and can spend significant amount of time outside.

APPEAL AND ACTIVITY LEVEL

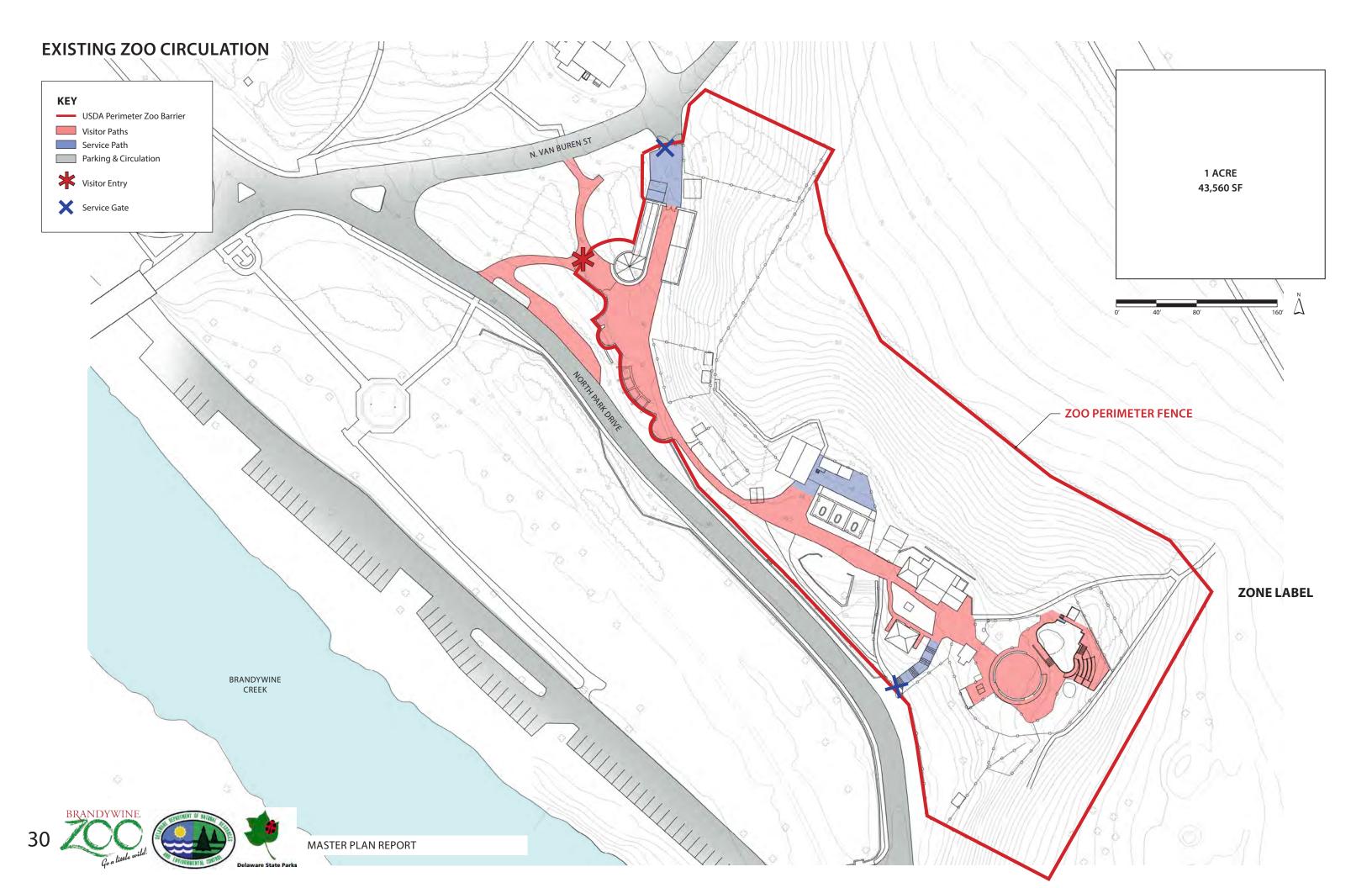
The team selected animals that will appeal to the Zoo visitors on many levels and can be trained by staff in-front of the Zoo visitors.

Other animals to think about (need input from Zoo):

- Rock Hyrax
- Meerkat
- Prairie Dog
- Snow Monkey
- Peccary
- Arctic Fox
- Other







CIRCULATION SUMMARY

The team studied several options relocating existing streets to increase the size of the Zoo and improve overall guest safety using the park and the Zoo. The two options below should be considered in the future:

Park Circulation Option #1: Relocate North Park Drive east of North Van Buren Street to the Sugar Bowl to the south. The new realigned road is proposed approximately where the abandoned railroad tracks are located. The Zoo would gain close to 1.5ac of quality land along the south side of the property. Guests will still have to cross North Park Drive to get to the Zoo entrance, but the new road can be designed with pedestrian crossing lights to improve guest safety.

Park Circulation Option #2: Relocate North Van Buren Street to the west of the existing education building. The road realignment is proposed to start at the intersection of North Park Drive and North Van Buren Street and extend for approximately 560'. By shifting this section of North Van Buren Street the Zoo property is much better connected, it has gained quality space for future development, and a dangerous crossing has been eliminated.

GUEST CIRCULATION

The team developed the following guidelines for future guest circulation.

- The current east/west spine needs to be changed to a loop path.
 The new portion of the path can be located on the north or the south side of the exiting spine.
- 2. The guest flow will not depend on elevators, escalators, or steps to deal with the existing grade difference on the site. Maximum grade for any guest path will not exceed 8% slope.
- 3. As much as possible, service circulation should not depend on guest walkways to access holding buildings, animal exhibits, or service zones.

SERVICE CIRCULATION

The team developed the following guidelines for future service circulation.

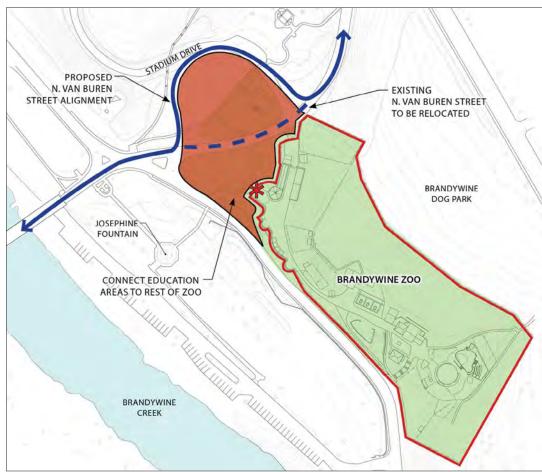
- 1. Provide direct access to exhibits, holding buildings, and service zones without using guest walkways.
- 2. Explore an option to construct a service spine along the east and north edge of the Zoo, starting by the entrance into the existing guest parking area and then heading to the north and connecting to North Van Buren Street.
- 3. Service roads need to be paved and minimum 12' to 14' wide.

PARK CIRCULATION OPTION #1



*See Illustrative Site Plan Expansion Option A on page 34

PARK CIRCULATION OPTION #2



*See Illustrative Site Plan Expansion Options B & C on pages 35-36







OVERALL PROPOSED CIRCULATION & GUEST SUPPORT



PARKING STUDY

GUEST PARKING

Approximately 80 parking spaces along the Brandywine River are available for regular park users and Zoo guests. There is a great demand for additional 100 paved spaces just to meet basic demand during the spring, summer, and fall. This can be accomplished by expanding guest parking to the east towards Baynard Blvd. and redoing existing parking areas with a more efficient layout. Overflow parking can also be created in the area to meet the demand during extra busy days and during special events. Existing and new parking areas need overhead lights and security cameras, vegetation needs to be pruned back and walkways replaced with a circulation system that separates different user groups and provides an easy and safe access to the Zoo main entrance.

STAFF PARKING

Additional 20 to 25 parking spaces for Zoo vehicles and staff should be created so spaces intended for guests are not occupied by the Zoo. The new staff spaces should be located in the Zoo support zone and constructed as part of each infrastructure or support project.

DROP OFF AND SCHOOL GROUPS

A clear circulation plan needs to be created when school buses are dropping kids off for "a day at the Zoo", dropping off or picking up kids as part of summer programs, or when parents in private vehicles are dropping off and picking up.

1. This plan proposes to use the new parking along Brandywine River for school buses to drop off and pick up. The kids will then walk to the Zoo entrance and meet a representative from the Zoo before heading into the Zoo or other areas of the park.

2. For drop off and pick up related to the education programs both buses and private vehicles would use Stadium Drive or the realigned North Van Buren Street for drop off and pick up.

	ZONE	AREA	EXISTING	PROPOSED	COMMENTS	_		
	1	West of Van Buren St. Bridge	24	24	Shared			
	2	East of Van Buren St. Bridge	124	124	Shared			
	3	East of Entry into Parking	0	75	Shared		1 ACRE	
	4	Overflow Parking	0	48	Shared		43,560 SF	
		TOTAL PROPOSED SHARED G	UEST PARKING	271				
N a see a se	5	Staff Parking by Education	11	11	Not Shared			
The state of the s	6	Staff Parking West of Hospital	0	13	Not Shared	0′ 80′	160′	320′
to	7	Staff Parking East of Hospital	0	5	Not Shared			
at s to		TOTAL PROPOSED DEDICATED	STAFF PARKING	29				
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ILLUSTRATIVE SITE PLAN - EXPANSION OPTION A



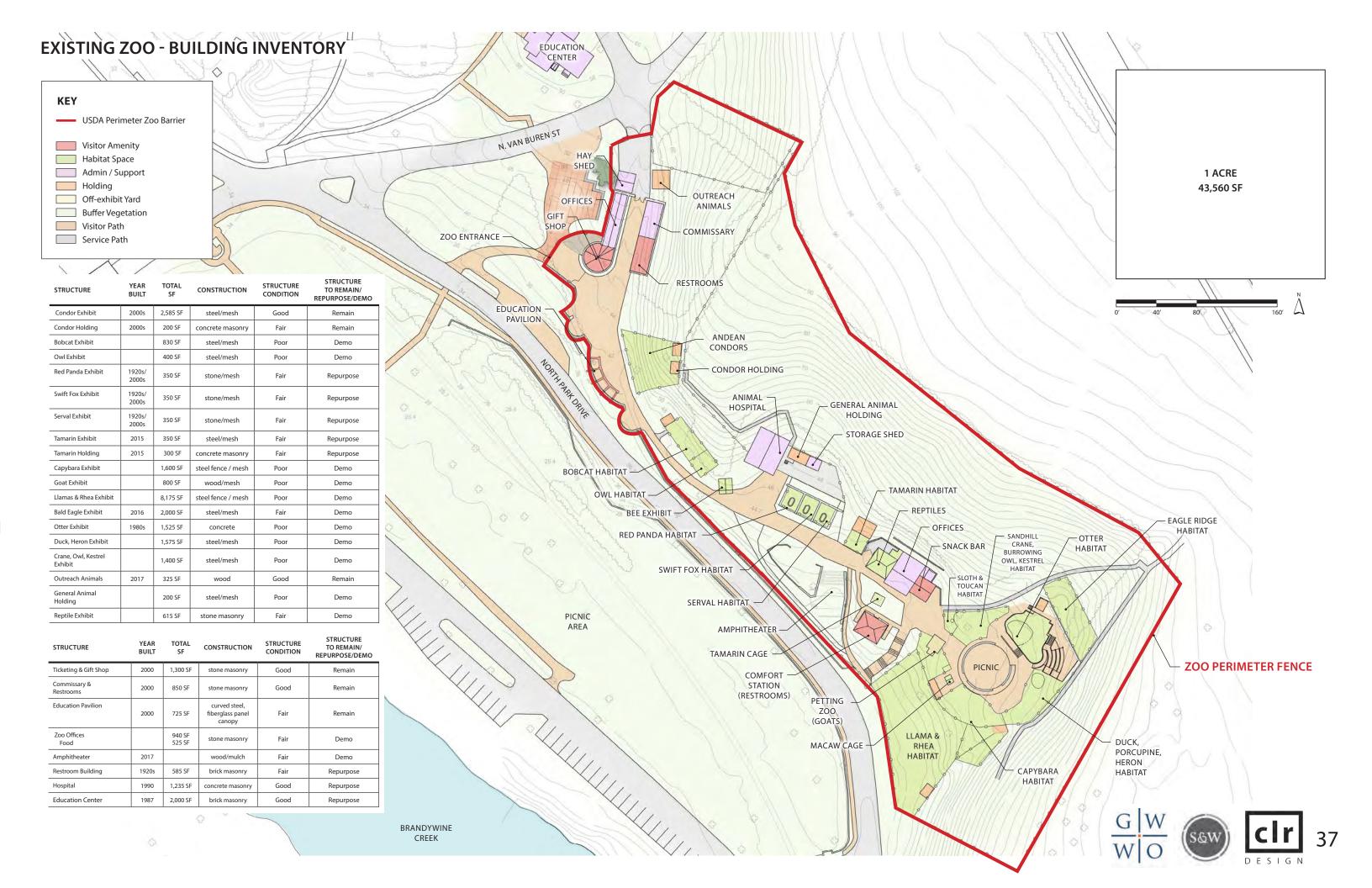
ILLUSTRATIVE SITE PLAN - EXPANSION OPTION B



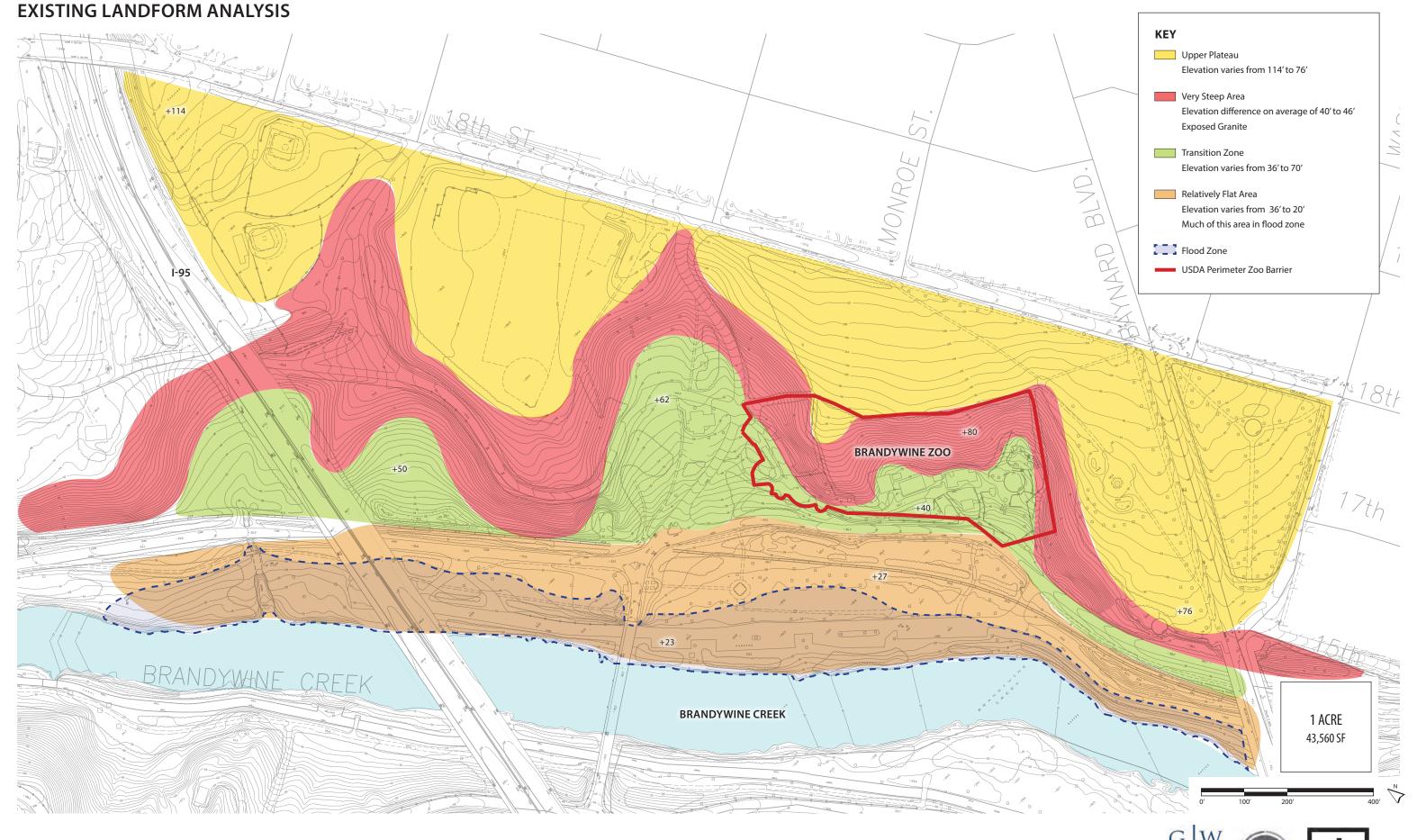


ILLUSTRATIVE SITE PLAN - EXPANSION OPTION C





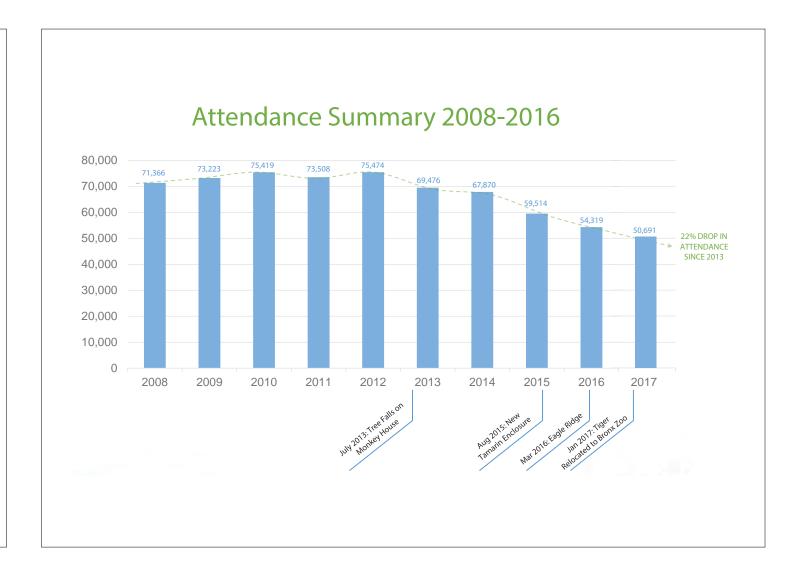


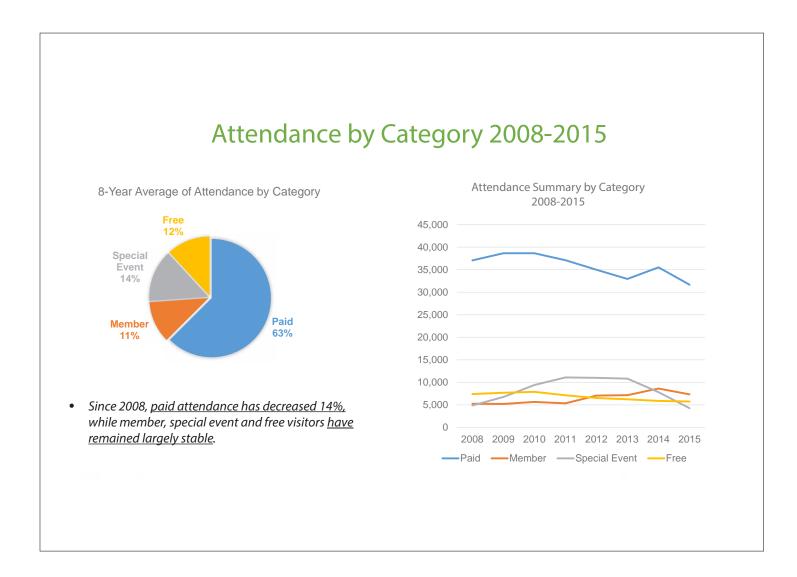


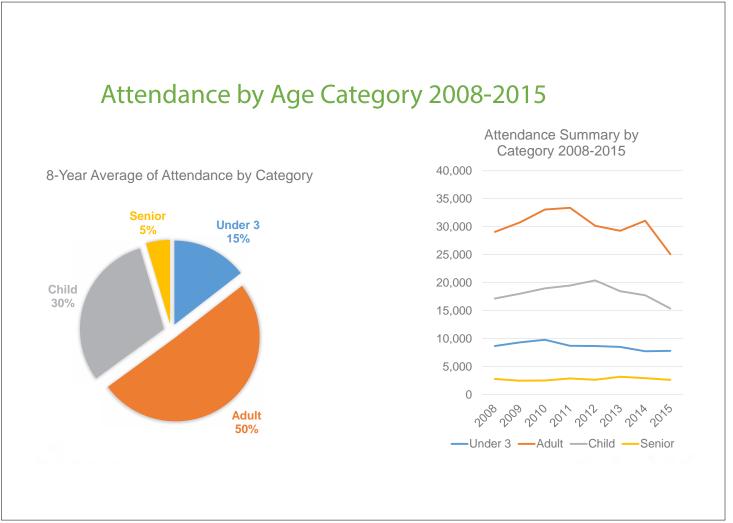


Role of S&W Strategic Business Integration with Master Plan

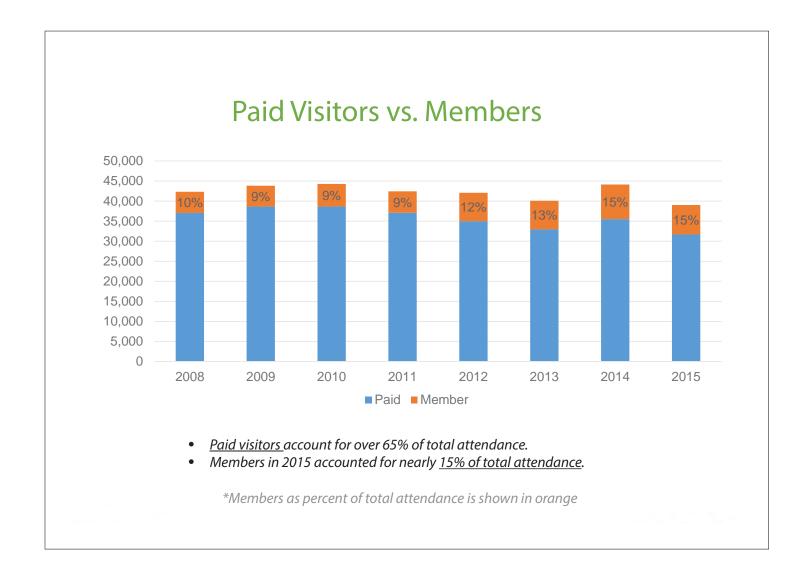
- Assess current attendance and financial baseline.
- Identify strategic business growth opportunities and recommendations.
- Integrate short-, mid- and long-term business, operational and funding opportunities with overall Master Plan.

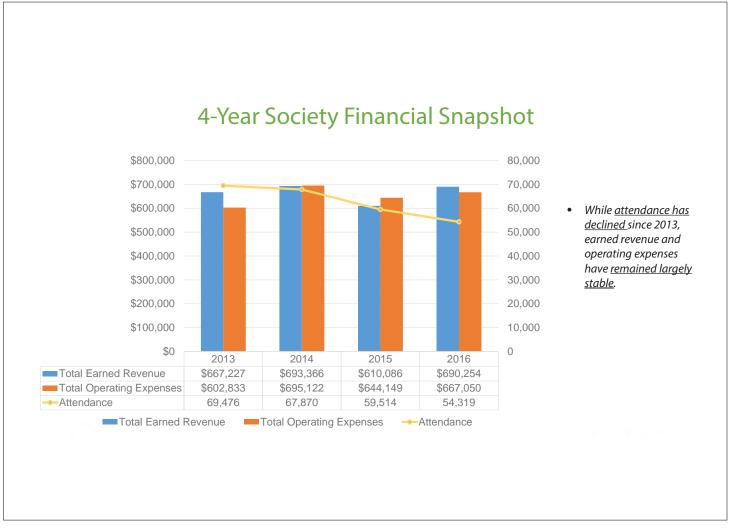




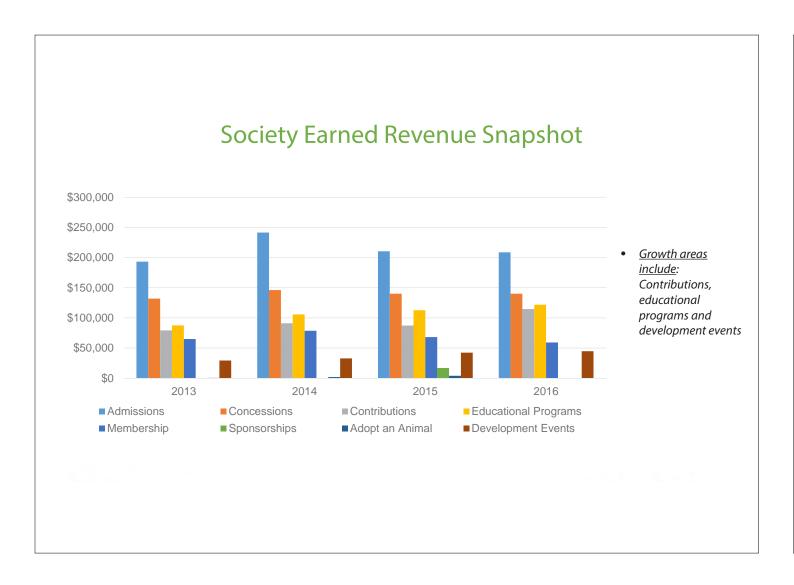


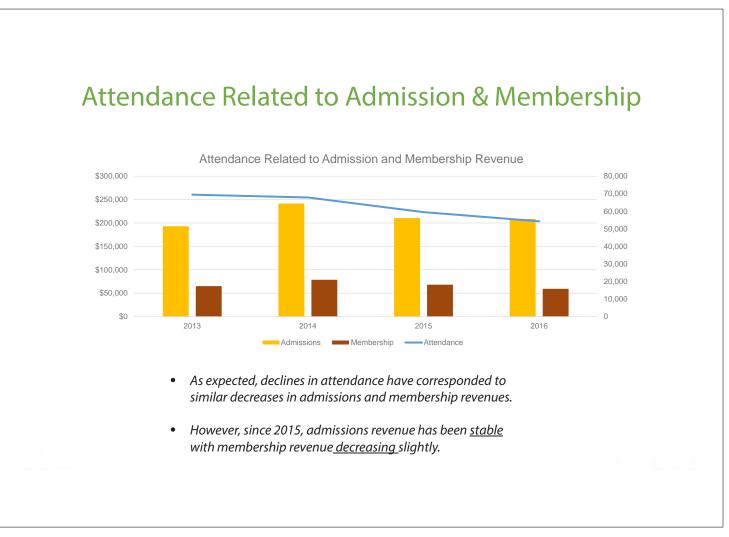


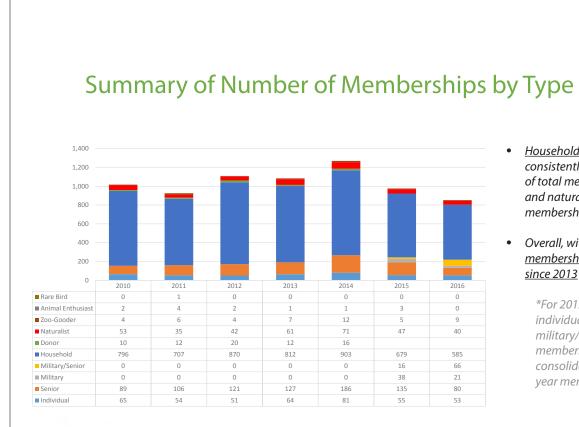




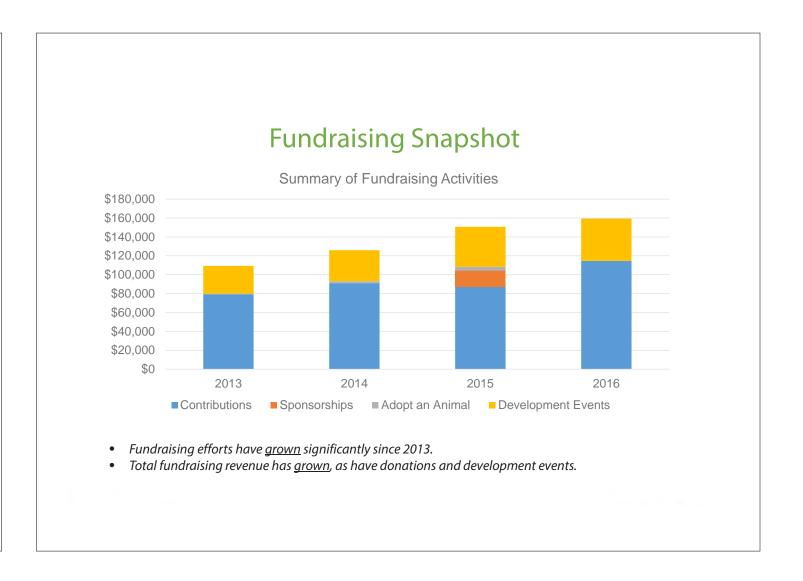


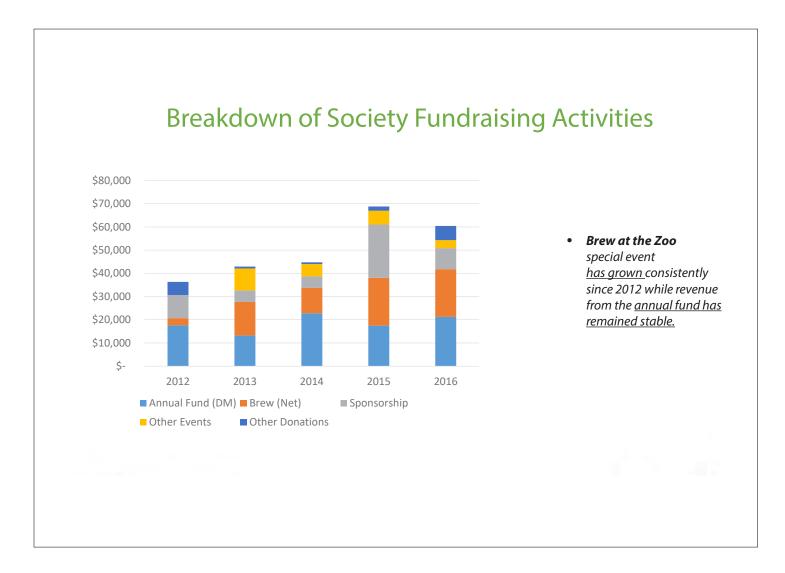


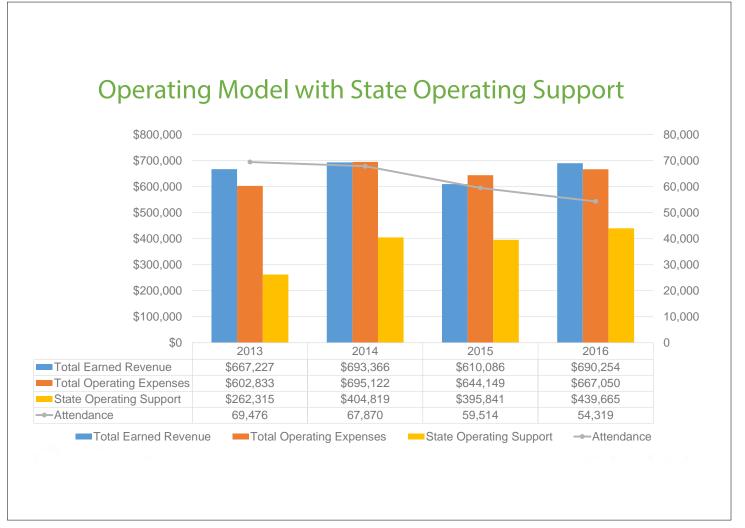




- Household members have consistently comprised the majority of total memberships, with seniors and naturalists as the next largest membership levels.
- Overall, with the exception of 2014, <u>memberships have been decreasing</u> <u>since 2013</u>
 - *For 2015 and 2016 data, individual, senior, military, military/senior and household memberships have been consolidated for single and twoyear memberships









Cost Per Visitor

	2013	2014	2015	2016
Total Attendance	69,476	67,870	59,514	54,319
Adult Admission Price	\$7.00	\$7.00	\$7.00	\$7.00
Society Expenses	\$591,114	\$673,509	\$624,736	\$641,773
Cost Per Visitor (Society Only)	\$8.51	\$9.92	\$10.50	\$11.81
Society & State Operating Expenses (No capital, FTE or State services)	\$1,027,114	\$1,114,509	\$1,111,640	\$1,079,904
Cost Per Visitor (Society & State)	\$14.78	\$16.42	\$18.68	\$19.88

History of Major Capital Projects

2014-2017	Additional Capital Project Investment	\$ 311,000	- DNREC/Parks
2017	Tiger Demolition & Amphitheater	\$ 114,000	- DNREC/Parks
2016	Eagle Ridge & ADA Ramp	\$ 100,000	- DNREC/Parks
2015	Tamarin Exhibit & Holding Building	\$ 220,000	- DNREC/Parks
	•	,	- DNREC/Parks
2014	Monkey House Demolition	\$ 118,000	- DNREC/Parks
2000	Gift Shop, Commissary, Restroom, Education Pavilion	\$ 1,000,000 (est.)	- DZS



PUBLIC RECEPTION

The Brandywine Zoo and Delaware State Parks are committed to an open dialogue with the local community. On June 14th, 2018, the Delaware State Parks Advisory council hosted an open house at the Brandywine Zoo where the public had the chance to speak with Zoo staff and learn about the the Zoo's plans for the future. The Zoo and the Delaware Zoological Society expressed their shared missions of conservation education and the preservation of species in their natural habitat. 49 members of the community participated in the open house. The plan was also posted online for several weeks so that community members could review and comment on it. In addition, leaders from other institutions in Association of Zoos and Aquariums (AZA) were also solicited for their feedback. Community members were enthusiastic about these plans to build a bright future for the Zoo, the city of Wilmington, and the state of Delaware.

















MASTER PLAN DEVELOPMENT TIMELINE

