



JOHN BALL ZOO MASTER PLAN



FINAL REPORT



AND



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Planning Process

This final report for the John Ball Zoo Master Plan represents the culmination of a 5-month collaborative planning process. The comprehensive effort began in July 2014 with an analysis of the existing Zoo campus with a special focus on identifying the critical programmatic and operational needs as well as land available for development. The initial process recognized a solid foundation of diverse animal exhibits and operational framework that exists today as a result of the implementation of modest yet highly valuable campus wide projects over the last 15 years. This implementation

began with the Cook Mokomboso Valley Chimpanzee habitat in 2001 and will culminate in the Spring of 2015 with the unveiling of the new Crawford Tigers of the Realm Phase 2. Based on the priorities identified by the planning participants including exhibits and attractions, infrastructure systems, and operational facilities, several concepts were tested for consideration within the physical plan. Integration with strategic objectives then helped to shape the overall direction of the plan.

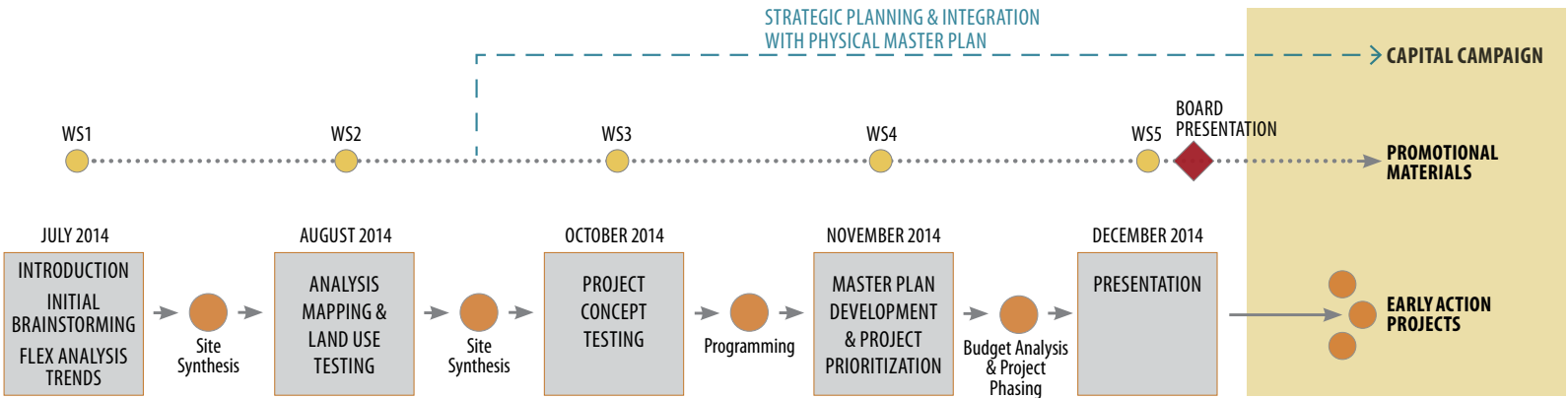


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Introduction

Over the last 15 years, the John Ball Zoo has implemented several projects aimed at improving exhibits, attractions, operations, and revenue growth. From 2001 through today Cook Mokomboso Valley Chimpanzee habitat, Bissell Lions of Lake Manyara, Idema Forest Realm, Bissell Tree House, Meijer Grizzly Bear, Gift Shop and Entry Gate have been completed, as well as numerous other smaller renovations both inside the Zoo and throughout the adjacent park. The combination of these projects has reinvigorated older exhibits, helped the Zoo expand their animal collection, and generated new sources of revenue throughout the Zoo. This strong resulting framework will act as the basis for a new focus and direction of the physical and strategic master plan for the next 15 years.

When diagramming and analyzing the projects implemented over the last 15 years, it's apparent that the pattern of development occurred mostly on the Zoo's peripheral (see *Existing Zoo: 15 Years of Project Implementation* diagram). While these projects are individually valuable to the visitors, there's a need to better integrate these and other new projects into a stronger campus wide plan which focuses on re-establishing and re-activating the Zoo's core zone while infilling additional animal exhibits and activity hubs on underutilized land. The new campus wide plan will also address visitor and vehicular circulation issues creating efficiencies and enhancing the overall experience throughout the zoo.



Aerial Photo

Master Plan Drivers

- 1. **Natural Site Criteria** – Understand the topography, geology, hydrology and vegetation to determine potential land areas suitable for expansion.
- 2. **Adjacent Site Criteria** – Analyze the site edges, zones of expansion, circulation routes, and site access points to understand areas in need of improvement and better integration with the operations of the zoo. These modifications are the result of safety, efficiency, and operational concerns.
- 3. **Collections Criteria** – Establish themes and a site that is well organized from an animal standpoint. Provide opportunities for education programs focusing on both animal and botanical sciences.
- 4. **Visitor Elements** – Reorganize the entry and arrival sequence making safety the priority. Consider visitor patterns, stay times, and other needs as a basis for reorganization. Provide comfort stations, opportunities for shows, rides, and special events as well as programs to enhance the visitor experience.
- 5. **Education** – Incorporate a dedicated education building which will house both the Conservation Education Center and Zoo education programs.
- 6. **Interpretive** – Define an exhibit message for the visitors.
- 7. **Operations** – Consider maintenance, infrastructure, and utility services while developing the master plan. Account for the Zoo's growing visitor attendance with adequate parking lots and access.
- 8. **Financial** – Strategize methods of increasing revenue and promoting successful funding campaigns.



Existing Zoo: 15 Years of Project Implementation

Analysis Summary and Planning Overview

THE BALANCED APPROACH

During the initial phase of the planning process, the team evaluated the existing conditions of the Zoo and identified several opportunities and constraints throughout the campus. This data coupled with the Zoo’s programmatic needs was organized into the three categories of Infrastructure, Exhibits and Attractions, and Strategic. This organization ensures that the priorities, and ultimately the projects resulting from the plan, are tied to a balanced implementation approach.

EXHIBITS AND ATTRACTIONS

1 Stingray Pool Expansion

Test opportunities for renovating and providing a permanent home for this once temporary exhibit. Provide upgrades to the life support system and exhibit pool as well as enhance the visitor experience. Test options for increasing the size of the pool and integrating an indoor / outdoor pool with the ability to control this connection. Engage the adjacent plaza space and create a zone of high activity.

2 Entry Valley

As a first impression for arriving guests, the Entry Valley and its exhibits lack a focus and wow factor. The significant elevation changes pose a challenge of how to get visitors up to the café and the heart of the Zoo without installing a series of ramps which consume valuable space. Test opportunities for an ADA accessible pathway which takes visitors from the main entry gate up to the café and heart of the Zoo. Stitch in larger North American species exhibits along the way and present an opportunity for larger animals to transfer between exhibit spaces. Eliminate the service road and utilize additional space for program implementation. Test consolidating pathways up by the café and the heart of the Zoo to create a central hub for which all path segments will lead back to.

3 Forest Realm Expansion

The upper forest plateau has demonstrated itself as an asset by allowing for exhibit expansion in a deeply immersive area of the Zoo. This continued expansion will focus on implementing a series of exhibits throughout the rest of the plateau. Creating additional habitats, expanding food service and visitor amenities, and completing the pedestrian loop with a dramatic walking path down the forested hillside to the main plaza of the Zoo will reinforce the Forest Realm as a highly active zone and visitor hub.

4 Primate Overlook Trail

Utilize the existing wooded hillside to expand and install new arboreal exhibits. Test cantilevering visitor boardwalks to help define exhibit spaces while incorporating a series of primate treetop trails to link these exhibits. Develop a synergy between the primate zone and Kid’s Discovery Zone.

5 Tropics Building Renovations

Renovations are required to increase the quality of the indoor environment for both animals and visitors. Test the opportunity for an overhaul of the existing Tropics Building. Explore incorporating an indoor / outdoor exhibit space which will act as the home for the new Komodo Dragon exhibit.

6 Western Valley

Test opportunities of relocating primate exhibits to open air mesh structures located on the downhill side of the Forest Realm Boardwalk. Reroute the visitor pathway to accommodate ADA access up to Forest Realm exhibits.

7 Africa / South Expansion

Test the possibility for future expansion along the plateau bordering the southern side end of the Zoo. Provide connections to the main visitor pathway via Cook Mokomboso Valley Chimpanzee and Bissell Lions of Lake Manyara exhibits.

STRATEGIC

1 Conservation Education Center

Test location for an education building adjacent to the existing pond to support expansion of the Grand Rapids Public School’s (GRPS) Zoo School program. Consider staff parking requirements as well as the interface between the school, adjacent zoo entry zone and pond. Program for educational opportunities using the existing pond and animal exhibits within the school.

2 Kid’s Discovery Zone

Develop a synergy between Primate Overlook Trail and Kid’s Discovery Zone. Test location for a carousel in place of the Whistle Stop Café. Test new locations for upgraded Whistle Stop Café and new bird and bug building.

3 Playground & Picnic Area

Test locations for playground and picnic area outside of the Zoo

boundary but within the park. Consider rerouting vehicular circulation for safety. Maintain separation between visitors and cars.

4 Central Café

Test opportunities for expansion and overhaul of existing café building and food service.

5 Adventure Course

Test locations on surrounding hillsides for a zipline or ropes course.

INFRASTRUCTURE

1 New Staff & Winter Holding / Parking

Test opportunities for locating a staff and winter holding building on the Zoo’s peripheral adjacent to the existing hospital. Utilize existing service access road infrastructure. Test locations for a new staff and support parking lot in close proximity to the Zoo’s main service zone.

2 Visitor Parking Renovations

Reconfiguring the parking layout to accompany a more efficient design will not only have positive effects on the visitors but also on the maintenance staff of the Zoo and the park. Test opportunities for

increasing public safety. Test opportunities for creating parking and vehicular circulation efficiencies. Implement stormwater management practices and revitalize the vegetation in the areas adjacent to the parking lot.

3 Park Entry

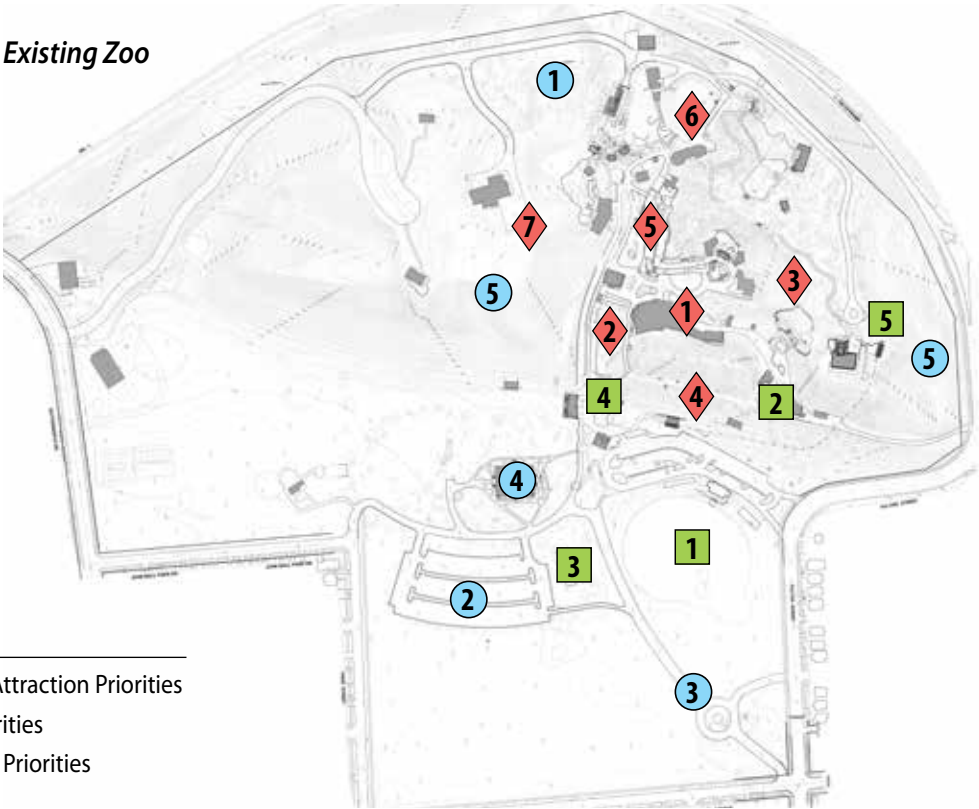
Test opportunities to separate pedestrian and vehicular circulation from the park entrance off of Fulton Street. Establish dedicated sidewalks and entry roads to divide circulation. Upgrade pedestrian entry gardens.

4 Administration Building

Test opportunities for locating a new administration building near the Zoo entry plaza. Consolidate back of house requirements to share with gift shop.

5 Service Roads

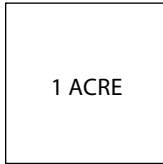
Analyze hillside elevations and test routing of service roads from the site’s upper plateaus down to the heart of the Zoo and the adjacent park. The installation of these service roads will help consolidate vehicular circulation throughout the zoo.



LEGEND

- ◆ Exhibits and Attraction Priorities
- Strategic Priorities
- Infrastructure Priorities

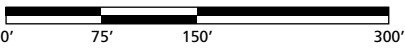
Illustrative Site Plan



LEGEND

- Visitor Services Building
- Exhibit Building
- Holding Building
- Administration / Support Building
- Animal Exhibit
- Water
- Visitor Path
- Service Path / Parking
- Zoo Perimeter Road
- Buffer Vegetation
- Picnic Area

Enlarged Zoo Site Plan



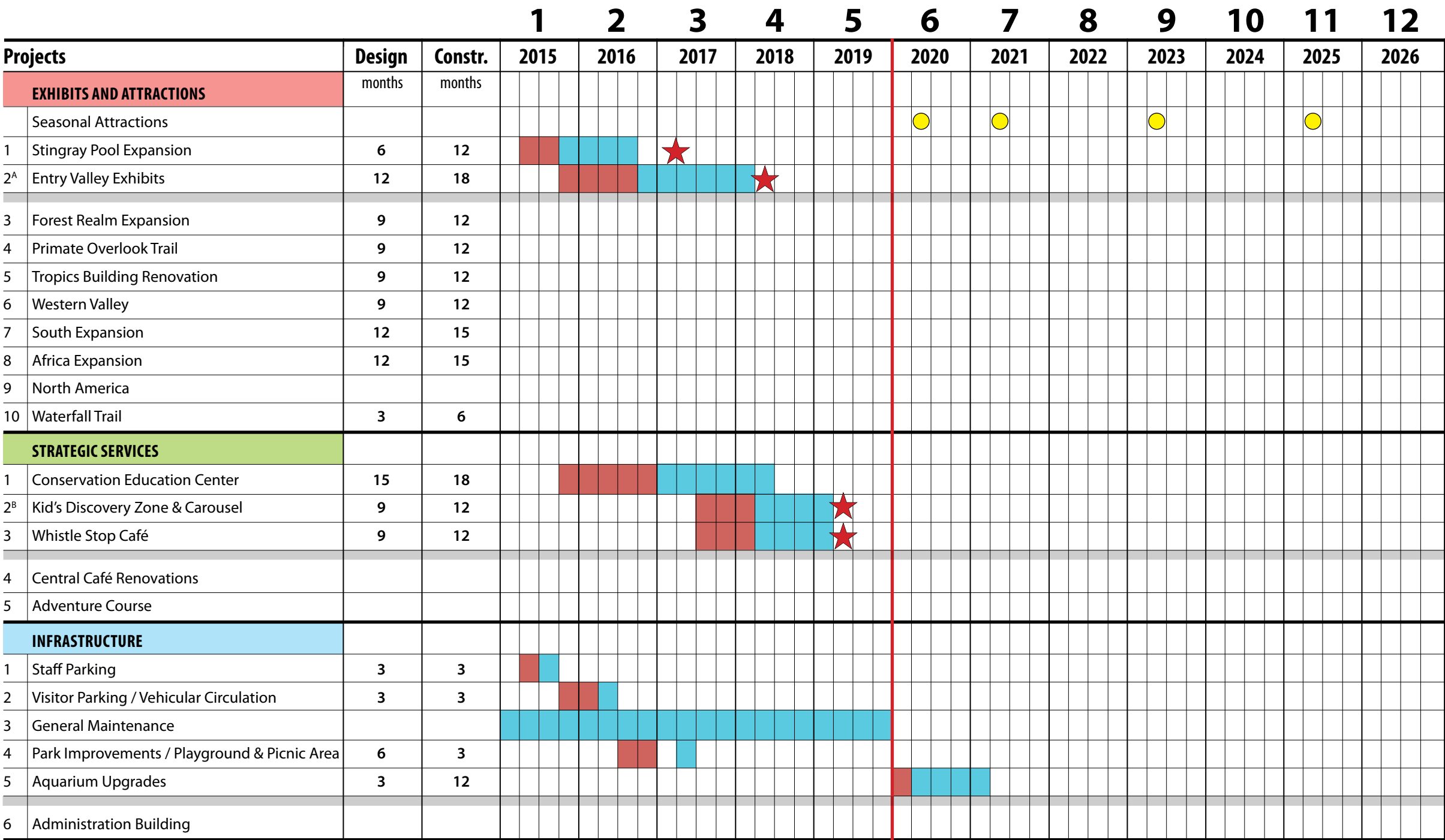
- LEGEND
- Visitor Services Building
 - Exhibit Building
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 - Administration / Support Building
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 - Water
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 - Service Path / Parking
 - Zoo Perimeter Road
 - Buffer Vegetation



Enlarged Park Site Plan



Implementation Schedule



■ START-UP / DESIGN / ENGINEERING

■ PERMIT / BID / BUILD

★ MAJOR ATTRACTION OPENINGS

● SEASONAL ATTRACTIONS

Key Openings		
YEAR	PROJECT	PUBLIC OPENING
2015	TIGER PHASE II	SPRING
2017	STINGRAY EXPANSION	SPRING
2018	ENTRY VALLEY EXHIBITS	SPRING
2019	KID'S DISCOVERY ZONE PHASE I	SPRING
	WHISTLE STOP CAFÉ	SPRING
2020	SEASONAL ATTRACTION	SPRING

Notes

A

Entry Valley Exhibits assumed scope to include:

• Two Bear habitats and animal crossing

• Bear Holding Building

• New path from Gift to Central Concession Building

• Upgrades to existing Eagle Exhibit

• Expanded Outdoor Dining Area

B

Kid's Discovery Zone & Carousel assumed scope to include:

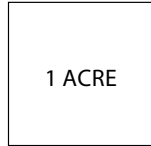
• Budgie Exhibit

• Bug Building

• Waterplay area and Bog Exhibit

• Carousel

Project Zones Plan



Entry Valley Exhibits and North America

This 46,000 Sq/Ft valley is the critical link from the main entry gate and entry plaza to the heart of the zoo. The goal is to construct a new guest pathway that maintains a slope that is equal to or less than 5% and connects these two elements within the zoo. In addition to the pathway, new entry exhibits will be constructed taking advantage of existing landform and providing a new and exciting first impression for visitors entering the zoo.

By expanding the North American collection into the entry valley, visitors can anticipate being greeted with a highly active black bear exhibit upon arrival to the Zoo. A bear crossing bridge will not only allow for flexible use of exhibit space but it will also provide visitors with a new perspective of the animals as they walk under this iconic and physical gateway into the Zoo.

The implementation of the new pathway and entry exhibits require the removal of the existing service road along the southern edge of the valley. Access to the heart of the zoo and concession building will be rerouted from the hospital and adjacent service area or from the western valley service spine.

PROGRAM	
Black Bear Habitat A	3,500 SF
Black Bear Habitat B	4,800 SF
Black Bear Holding Building	1,400 SF
Deck Overlook	1,000 SF
View Shelter	530 SF
Encounter	150 SF
North American Habitat A	1,650 SF
North American Habitat B	500 SF
Cougar Habitat	2,900 SF
Cougar Holding Building	650 SF
Boardwalk	2,400 SF





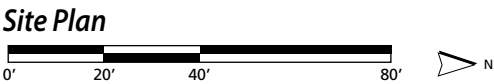
Entry Trail and Black Bear Habitat



Primate Overlook Trail

This long and linear wooded hillside totaling approximately 48,000 Sq/Ft is vital to maintaining a consistent loop of visitor circulation from the heart of the Zoo out to the kid's discovery area and back. Implementing a series of cantilevering boardwalks allows for deviation from the existing hillside and helps to define a series of exhibit spaces on both the east and west sides of the path. By connecting these spaces with an arboreal primate trail system, animals are able to move to and from exhibits through the existing tree canopy at will which results in a highly active corridor for animals and visitors alike. Animals within this area will also be viewable from the funicular and by ropes course participants.

PROGRAM			
Aviary	2,700 SF	Small Primate Holding Building	430 SF
Aviary View Shelter	450 SF	Lemur Habitat	2,900 SF
Aviary Holding	500 SF	Primate Flex 1	1,400 SF
Boardwalk	4,400 SF	Primate Flex 2	1,500 SF
		Primate Flex 3	1,000 SF
		Primate Viewing / Holding	1,000 SF





Lemur Habitat and Primate Trails

Stingray Pool Expansion

The renovation and expansion of the existing stingray pool will address numerous issues associated with this popular aging exhibit. By implementing a larger indoor / outdoor pool we are enhancing the experiences of both the animals and the visitors. Larger meandering pools provide ample room for various swimming patterns while the indoor / outdoor concept allows visitors to touch and feed the stingrays during all of the Zoo's operable months. The building addition houses a number of key elements for the exhibit: an upgraded life support system in a dedicated indoor space, on site off exhibit holding, keeper office space and access to a service corridor.

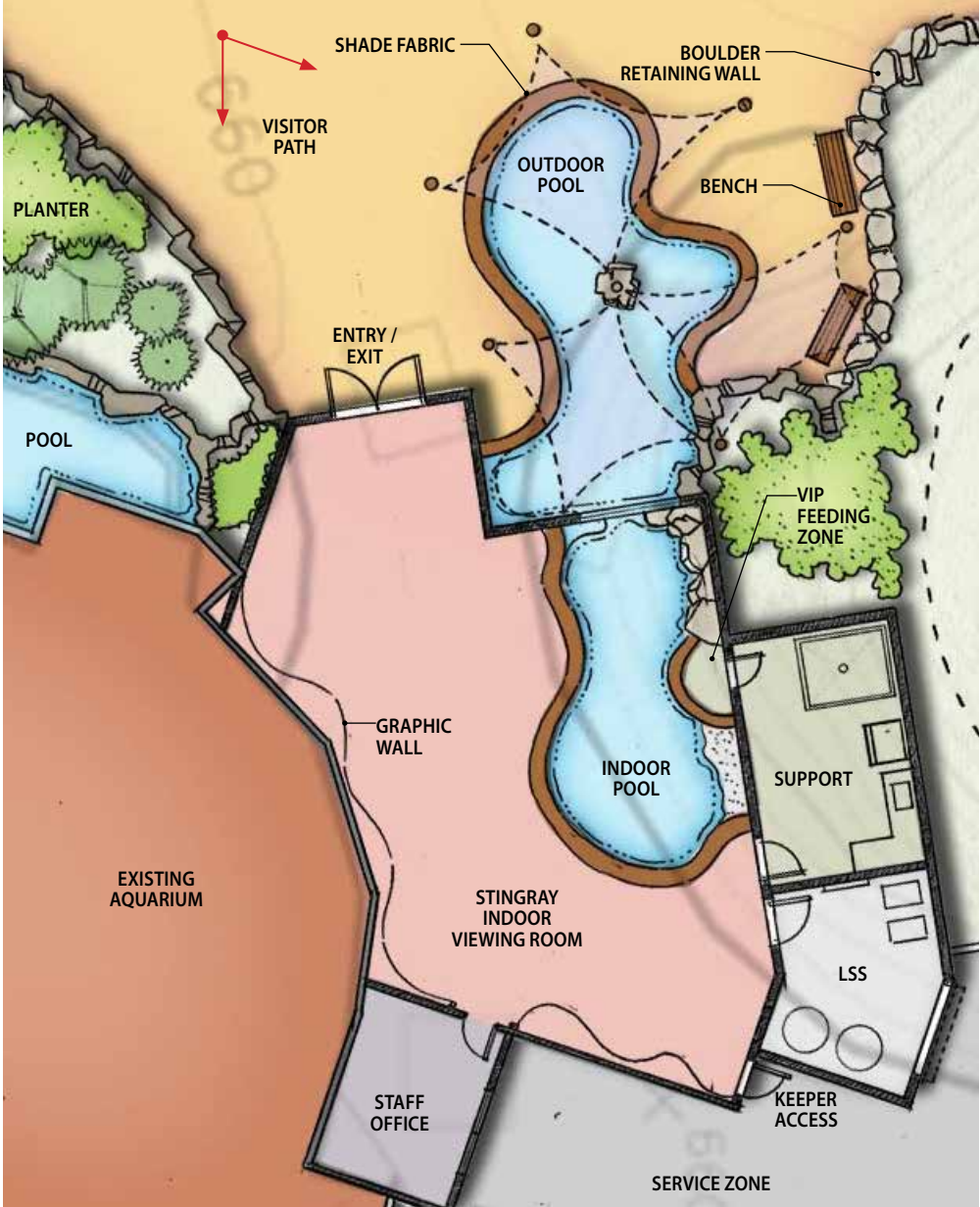
Equipped with a controllable divide, the large stingray pool will straddle the building edge with approximately 40% indoor and 60% outdoor water surface area. The outdoor portion will be equipped with tensile fabric shade structures for comfort of both the animals and visitors. The meandering pool edge maximizes the amount of frontage and capacity for visitors interacting with the stingrays. A hand washing station will be located both inside and outside of the exhibit building for visitor sanitation.



Site Plan
0' 15' 30' 60' N



Outdoor Stingray Pool



Stingray Pool Enlarged Site Plan



PROGRAM	
Indoor Pool	5,400 GAL
Outdoor Pool	7,700 GAL
Indoor Viewing Room	1,850 SF
Staff Office	200 SF
Animal Holding	300 SF
LSS	250 SF

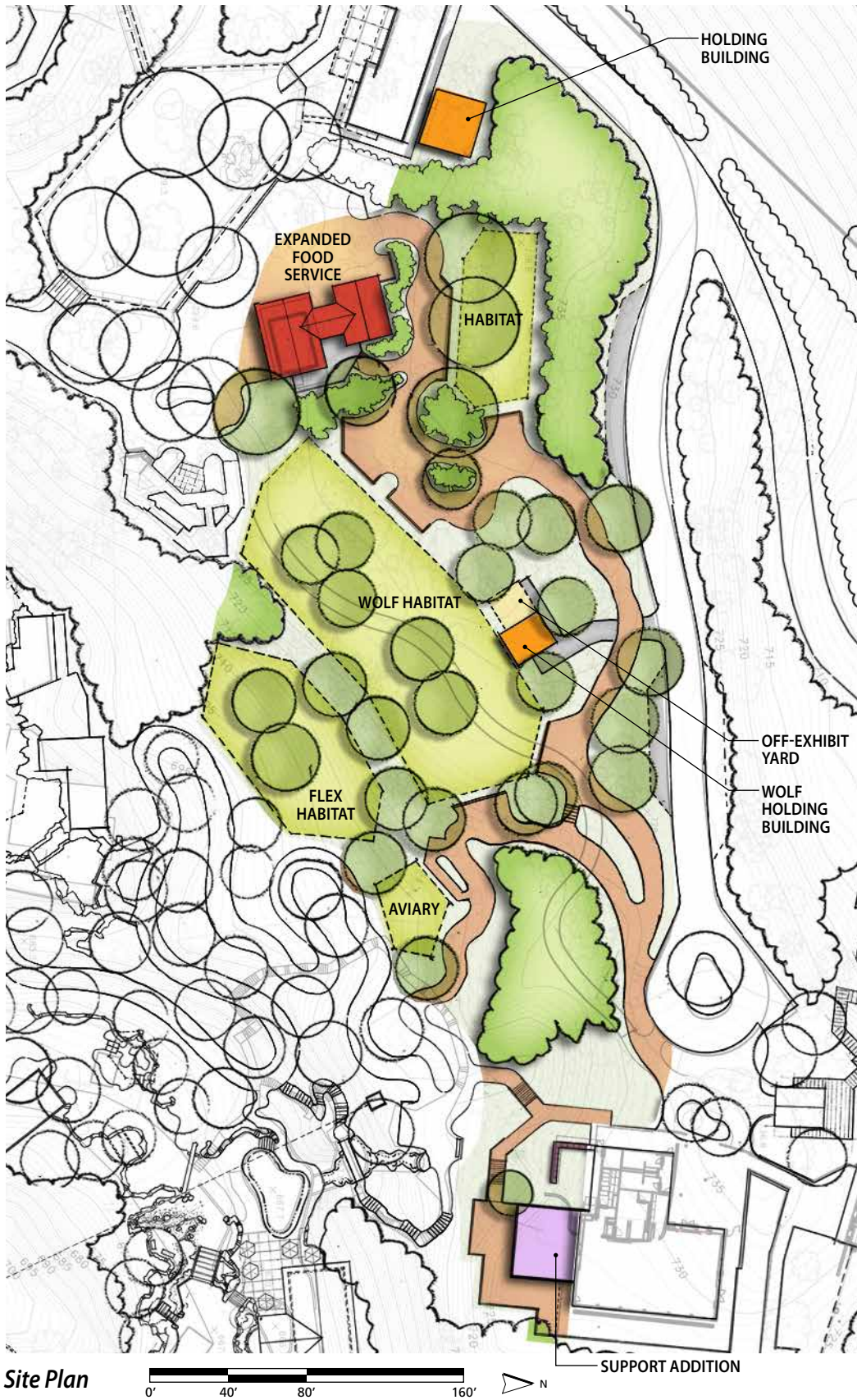
Forest Realm Expansion

The opening of the Crawford Tigers of the Realm in the spring of 2015 will mark the completion of the first phase of design and construction for the forest realm exhibits located on the Zoo's north western plateau. This new immersive exhibit zone brings visitors through the forest and engages them with numerous opportunities for play and animal viewing. The expansion of the forest realm will accomplish a series of goals.

Numerous predator exhibits will be implemented along the main pathway utilizing the natural qualities of the existing forest to create deeply immersive experiences for both the animals and visitors. Expanding the Zoo's current species list and continuing to diversify, the concept tests adding a canine species such as wolf to the forest realm.

The existing food service and restroom area will be expanded in order to accommodate the Zoo's growing attendance and establish a central hub of activity for the upper forest realm. Adjacent to the treetop outpost, the expanded snack and restroom area will provide parents with ample room to sit and enjoy the forest and exhibits as children play.

The forest realm expansion will work in tandem with the waterfall trail to complete a pedestrian loop. Visitors will be able to follow the waterfall trail down to the kid's discovery zone and ultimately back to the central café.



PROGRAM	
Habitat	3,200 SF
Holding Building	750 SF
Wolf Habitat	13,000 SF
Wolf Holding Building	400 SF
Wolf Off-Exhibit Yard	400 SF
Flex Habitat	5,500 SF
Aviary	1,100 SF
Support Addition	1,200 SF
Food Service	1,000 SF

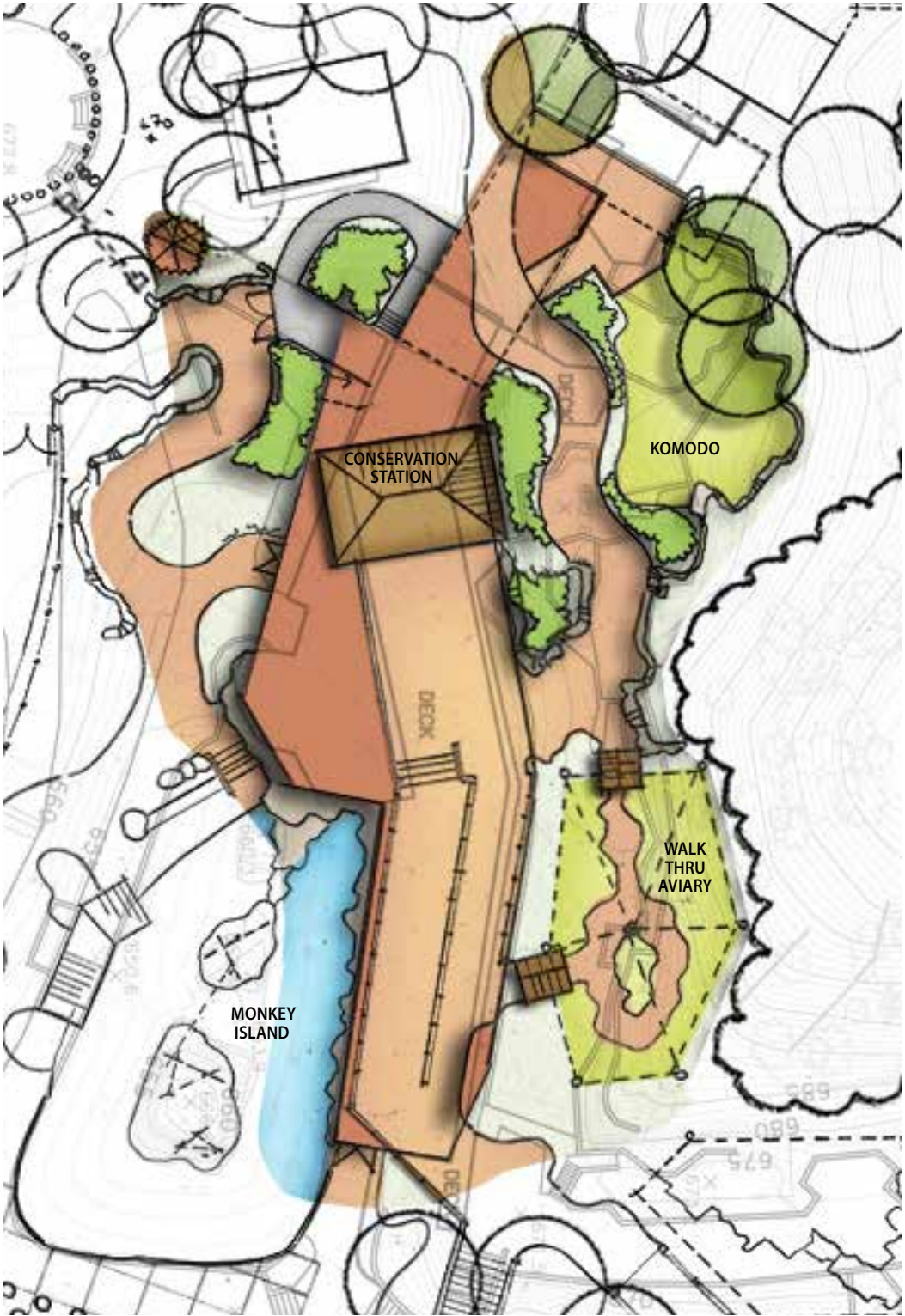
Tropics Building Renovations

Located within the central hub of the zoo, the tropics building is a showcase for a diverse group of reptiles and amphibians along with a variety of small primates and insects. A John Ball Zoo facilities assessment identified a variety of issues related to the extended life span of the building. These issues suggest that renovations and upgrades to the building will be required in order increase its lifespan.

The new concept explores a complete overhaul and renovation to the tropics building which will address and repair numerous issues present within the building's envelope and mechanical systems. The renovation will increase the quality of the indoor environment for the animals and visitors and upgrade the overall experience of the attraction. The renovation brings back and expands the previous Komodo Dragon exhibit into an indoor / outdoor attraction that will be restructured as the main draw within the building.



- PROGRAM
- Building Renovated
 - Two or More Outdoor Habitats



Site Plan

0' 20' 40' 80' N



Western Valley

Once a dead end, the western valley now acts as a prominent corridor of circulation for visitors accessing the upper forest realm. The dense vegetation throughout the valley and along the forested hillside provides a perfect opportunity for a series of immersive exhibits. A realignment of the visitor pathways will create an accessible walking route through the new exhibits.

Opportunities for utilizing the existing hillside as a small primate exhibit have been explored and are a viable option. Transfer chutes will send animals from the holding facilities up to the forest hillside. The animals will be viewable from the lower pathway as well as from the upper boardwalk pathway. Additional exhibit spaces can be established along the serpentine pathway creating a dynamic and highly active exhibit zone.



PROGRAM	
Holding Building	700 SF
Dayroom	320 SF
Primate Habitat #1	1,400 SF
Primate Habitat #2	950 SF
Primate Habitat #3	650 SF
Tree Trails	325 LF

Site Plan
0' 25' 50' 100' N

Kid's Discovery Zone

Located at the end of the Primate Overlook Trail, the Kid's Discovery Zone is being re-established as a secondary hub within the Zoo's main circulation pattern. This new hub will house numerous attractions for children that will help activate the area.

To the east of the Discovery Zone, up close viewing into the primate holding building will begin to create a synergy between the Primate Overlook Trail zone and the Kid's Discovery Zone. The Whistle Stop Café has been relocated in order to expand amenities and provide a better connection to the Zoo's service zone. In its place, a mid-sized carousel will serve as a focal point attraction within this zone while providing a source of additional revenue for the Zoo.

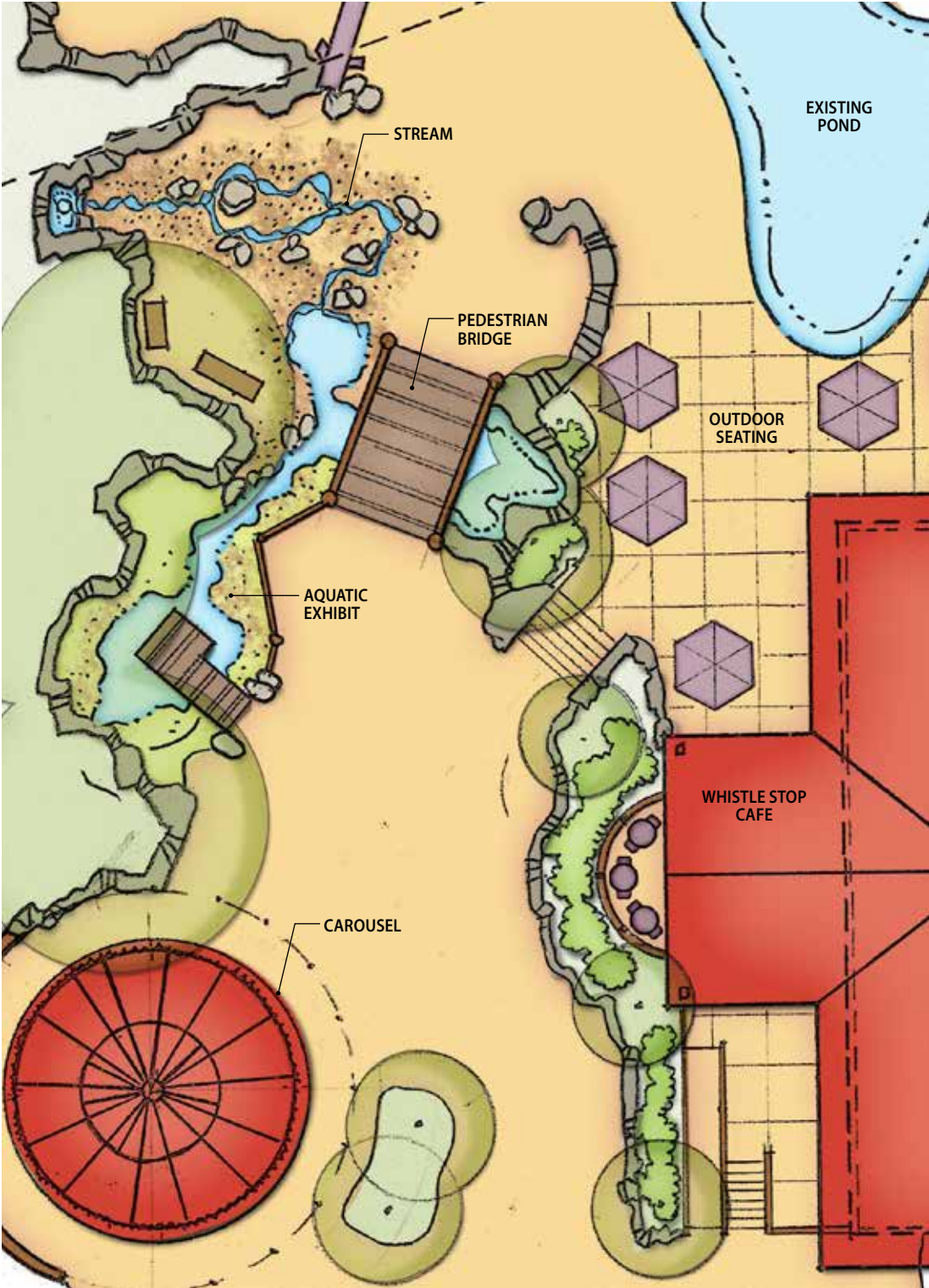
A walk through budgie aviary will be nestled into the hillside adjacent to the zip line. The pathway link from the zip line back to the otter exhibit within the North American zone explores opportunities for additional walk through aviaries as well as a new bird and bug building.



Site Plan
0' 25' 50' 100' N

PROGRAM	
Bird & Bug Building	1,300 SF
Walk Thru Budgie	500 SF
Vestibule 1	50 SF
Vestibule 2	50 SF
Whistle Stop Cafe	2,000 SF
Food	1,120 SF
Men's Restroom	168 SF
Women's Restroom	216 SF
Janitor Closet & Mechanical	98 SF





Kid's Discovery Zone Site Plan Enlargement





Whistle Stop Cafe Plaza

South Expansion

Bordering the southern edge of the Zoo, this forested plateau is a prime location for a significant expansion to the Zoo. Land use studies have proven ample room for a variety of exhibits both small and large. Visitor connections to the south expansion can be made by way of the existing African Exhibits, bringing people up the hill then offering a short path system that brings visitors through a series of exhibits.



PROGRAM	
Habitat A	12,000 SF
Habitat B	4,500 SF
Habitat C	3,000 SF
Habitat D	1,500 SF
Holding Building A	1,800 SF
Holding Building B	1,000 SF
View Shelter	460 SF
Concessions	600 SF



Africa Expansion

Utilizing the same forested plateau as the South Expansion, the African Expansion will add a new predator layer to the African experience at the Zoo. The western portion of the expansion is suitable for a wild dog exhibit. By taking advantage of the existing elevation changes, highly naturalistic rockwork barriers can be installed, creating a seamless backdrop between the exhibit space and the forest beyond.



PROGRAM	
Habitat A	3,300 SF
Habitat B	2,900 SF
Habitat C	1,500 SF
Habitat D	650 SF
Habitat A Holding Building	750 SF
Habitat D Holding Building	220 SF
View Shelter A	450 SF
View Shelter B	450 SF



Conservation Education Center

A key element in the Zoo’s list of master plan drivers is to incorporate education with a dedicated building to house the Conservation Education Center programs. Located in the northwest section of the park, the education building utilizes the existing pond as both a scenic overlook and an opportunity for educational purposes. The reconstructed banks of the pond will provide natural wetland habitats that can act as a learning subject for students.

The positioning of the education building allows for convenient bus and parent drop off from the south side as well as dedicated teacher / staff parking from the north side. Being in close proximity to the Zoo’s main entry, the education building works in conjunction with the entry plaza to create a welcoming Zoo entry and define circulation for a variety of visitors.

The southwest quadrant of the building is programmed as an outdoor plaza space, taking full advantage of the cooling outdoor micro-climate created by the building itself.



Site Plan
0' 40' 80' 160' N

PROGRAM – FUNCTIONAL AREAS BY THE PRIMARY DESIGN PURPOSE

ZOO SCHOOL FUNCTIONS

Offices (including nurses area)	8	150 SF	1,200 SF
Reception Area	1	250 SF	250 SF
Primary Classrooms (2/grade everyday)	6	1,200 SF	7,200 SF
Overflow Classrooms	2	1,200 SF	2,400 SF
Large Group Presentation/Gathering Areas and Space For Eating Lunch	1	2,500 SF	2,500 SF
Storage - tables, chairs, music, outdoor supplies	1	500 SF	500 SF

ZOO EDUCATION DEPARTMENT FUNCTIONS

Office Spaces (net allowance)	1	1,300 SF	1,300 SF
Classrooms	4	1,200 SF	4,800 SF
Reception Area	1	250 SF	250 SF
Storage - class supplies, biofacts	2	200 SF	400 SF
Staff Support Areas	1	400 SF	400 SF
Work/Supply Room	1	350 SF	350 SF
Break Room	1	400 SF	400 SF

SHARED FUNCTIONS

Restrooms – Staff, Guest and Student (net allowance)			2,750 SF
Kitchen (warming)	1	250 SF	250 SF
Kitchen (catering)	1	800 SF	800 SF
In-class Animal Space	1	400 SF	400 SF
Program Animal Housing	1	2,500 SF	2,500 SF
Elevator/Lobby	2	200 SF	400 SF
Stairwells (2 per floor)	4	200 SF	800 SF
Data Hub	1	200 SF	200 SF
Mechanical/Electrical (1 per level)	2	500 SF	1000 SF

TOTAL GROSS			31,050 SF
Gross Factor at 25%			25%

TOTAL NET - 2-stories			38,813 SF
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Park Entry

Visitors will be welcomed at the corner of Fulton and Valley with colorful botanical displays, quiet seating areas, decorative fountain, bike trail and pedestrian paths. The dramatic landscaping will create a signature entry piece for both vehicular traffic and pedestrians.

During the inventory and analysis phase of the master plan, it became apparent that the park and entry to the zoo could be made a much safer area if the pedestrian circulation was kept separate from the vehicular circulation. This corner entry garden begins to define that separation by re-routing the vehicular road and promoting pedestrian circulation only from the corner of Fulton and Valley up through the park to the main zoo entrance only crossing over the main entry road once. The renovated park entry and garden not only better the circulation and safety for pedestrians and vehicles but also helps further the initiative to beautify the surrounding park space.



Site Plan



Park Entry

Visitor Parking Renovations – Preferred Plan

As the popularity of the Zoo increases, so does the need for appropriate parking infrastructure. The existing paved parking lot has proven to be undersized for Zoo and park visitors during high volume days. While the overflow lawn parking helps handle the added volume it could be more efficient if properly planned. The proposed plan re-evaluates the park and Zoo's parking needs and provides a solution which aims to accompany the high volume of visitors efficiently, reduce maintenance and safety concerns, and beautify the surrounding park.

The parking lot is widened towards Park Street and expanded slightly to the east to partially occupy the zone that was once utilized for overflow parking. By eliminating lawn parking, maintenance operations are minimized as well as the damaging impacts to the lawn within the park. With the use of landforms and vegetation, the visual impact of the parking lot will be softened and hidden from view from the adjacent neighborhood.

EXISTING PARKING		PROPOSED PARKING	
ZONE	SPACES	ZONE	SPACES
Main Parking Lot	248	West Parking Lot	371
Pond Parking Lot	108	East Parking Lot	308
Total Spaces	356	Total Spaces	679

PARKING ASSESSMENT

- 1) Design day = 1% of annual attendance
- 2) Design day = 5,000 or more
- 3) Parking demand = design day x 80% / 3.5 Per car / 1.5 to 1.75 Turnover

ANNUAL ATTENDANCE	DESIGN DAY	PARKING DEMAND*
450,000	4,500	580 to 680 Spaces
500,000	5,000	650 to 750 Spaces
550,000	5,500	720 to 820 Spaces
600,000	6,000	770 to 900 Spaces

* Paved parking spaces, overflow parking spaces, and street parking

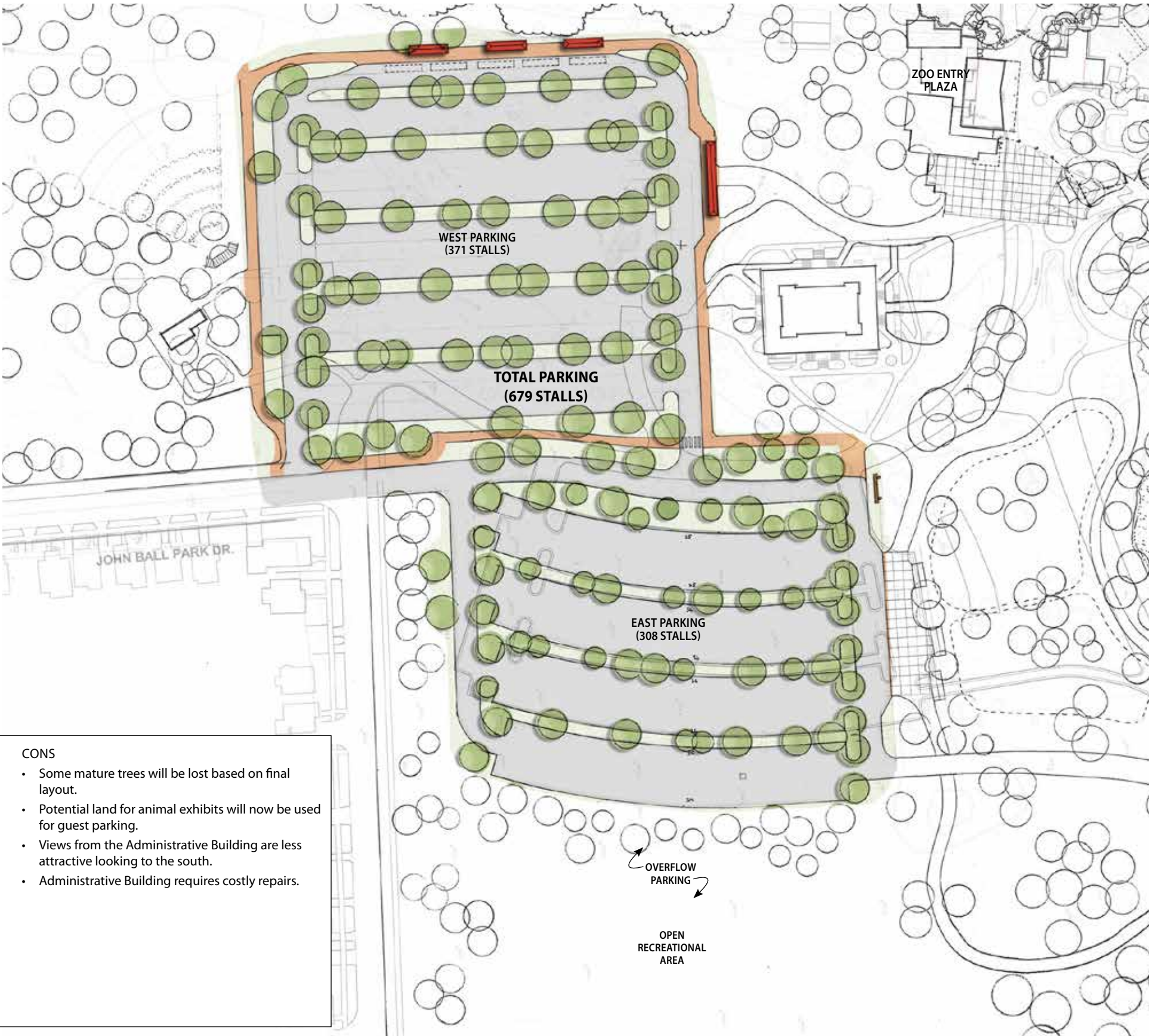
PROS

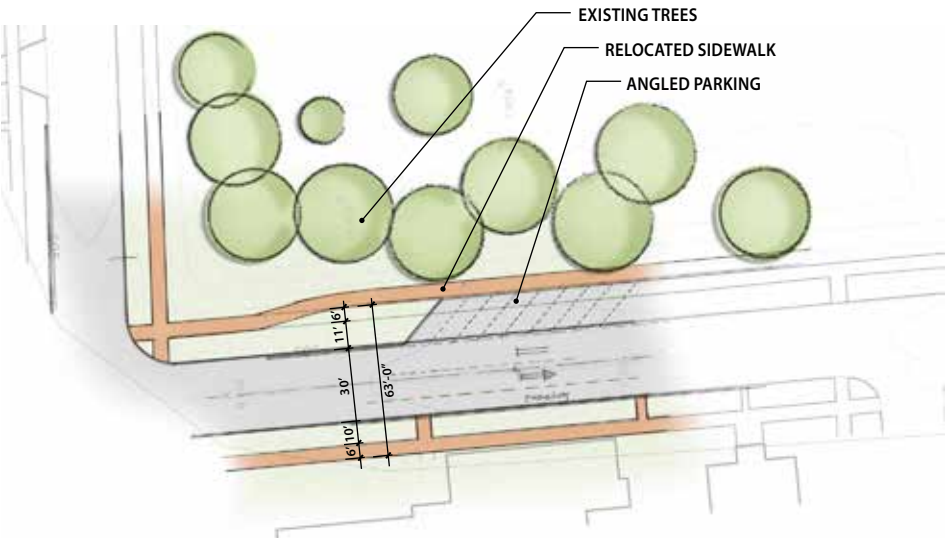
- Efficiently increases paved parking capacity by 91%.
- Existing parking lot upgraded. Will revise existing utilities and save trees.
- Recreational area is not impacted and overflow parking can stay as is.
- New parking area (West Lot) brings guests close to the Zoo Entry Plaza.
- Two good entry points from existing roads.
- Good location for guests using the picnic area and attending a concert.
- Historic Administrative Building can stay.
- Mature trees protected at south side of pond.
- Guests will have direct access to walkways leading to Zoo Plaza.

CONS

- Some mature trees will be lost based on final layout.
- Potential land for animal exhibits will now be used for guest parking.
- Views from the Administrative Building are less attractive looking to the south.
- Administrative Building requires costly repairs.

Site Plan





Angled Parking Option



- | PROS | CONS |
|--|---|
| <ul style="list-style-type: none">Decreases the amount of parking space that needs to be added.Pull forward back in method is safer for unloading vehicles and pulling out. | <ul style="list-style-type: none">Will impact mature trees along Valley Ave. and Park St.Safety issue backing out of spaces into oncoming traffic.Safety issue unloading kids adjacent to busy street.Pull forward back in method has issues with flow of traffic.Guests have to walk further to get to Entry Plaza and park amenities. |



Bio-Swale Examples

Photo & Design by Meliora Design

Photo & Design by Meliora Design

Visitor Parking Renovations (Options)



Parking - Scheme 1



PROS

- Existing parking lot upgraded. Will revise existing utilities and save trees.
- Recreational area is not impacted and overflow parking can stay as is.
- New parking area (West Lot) brings guests close to the Zoo Entry Plaza.
- Two good entry points from existing roads.
- Good location for guests using the picnic area and attending a concert.
- Eliminates costly repair of Administrative Building.
- Mature trees protected at south side of pond.
- Guests will have direct access to walkways leading to Zoo Plaza.

CONS

- Some mature trees will be lost based on final layout.
- Potential land for animal exhibits will now be used for guest parking.
- Administrative Building is demolished and offices / staff need to be relocated or new building(s) need to be constructed.
- Cost to construct new pavilion / rental space.



Parking - Scheme 2



PROS

- Dedicated drop-off roundabout.
- Retains land for potential animal exhibits.
- Two good entry points from existing roads.
- Historic Administrative Building can stay.
- Guests will have direct access to walkways leading to Zoo Plaza.
- Space west of existing parking remains open for recreational use.

CONS

- Administrative Building requires costly repairs.
- Might impact open recreational area based on how far to the east the parking will extend.
- Reduces potential for overflow parking.
- Orientation is more difficult for guests to get from vehicles to sidewalk.
- Cost of all new curbs, paving and most likely storm system.
- More difficult to save existing trees.

New Staff & Winter Holding / Parking

In order to satisfy the operational needs of the Zoo, the implementation of a new staff building along with winter holding is essential for successful execution of daily maintenance activities at the Zoo. Located adjacent to the existing hospital, the new staff and holding support building utilizes the existing elevation changes to create a two story structure with access from grade to both the first and second floors. The animal winter holding can not only accommodate climate sensitive species but it can also be the central location for animal breeding in the Zoo.

The current lack of staff parking creates inefficiencies throughout the campus. Parking lots that would otherwise be solely dedicated to visitors are currently accommodating both visitors and staff. With the addition of a new surface parking lot containing 94 dedicated staff parking spaces, this back of house service area is now equipped to handle the parking needs for a majority of the Zoo staff in one consolidated location.



PROGRAM	
Staff Support Building	2,400 SF
Animal Support and Breeding Building	2,400 SF
Off Exhibit Holding	1,800 SF
Parking	94 Spaces

Administration Building

The new administration building, nestled next to the existing gift shop, not only provides the Zoo staff with an upgraded office facility but it also works in tandem with the new education building to help redefine the entry plaza to the Zoo. The new administration building's location allows it to double as the main admissions office for visitors purchasing tickets. The simple circulation pattern around the building allows for direct one way flow from the ticketing window to the entry gate.

The service areas behind the administration, gift shop and black bear holding buildings can be consolidated into one zone providing efficiencies for maintenance and management. Optional connections may be made to the existing gift shop.

PROGRAM

Offices for Inst. Adv. & Admin Services (Finance, HR, IT)	10	175 SF	1,750 SF
Open Offices	10	80 SF	800 SF
Staff Support Area	1	400 SF	400 SF
Meeting Rooms - sizes undetermined	2	250 SF	500 SF
Board Room	1	400 SF	400 SF
Small Kitchen	1	250 SF	250 SF
Reception Area	1	250 SF	250 SF
Supply Rooms	1	350 SF	350 SF
Break Room	1	400 SF	400 SF
Ticketing (cash room, 6 windows, first aid, security)	1	1,000 SF	1,000 SF
Restrooms - Staff (fixture - 4M & 4F)	1	300 SF	300 SF
Mechanical/Electrical	1	500 SF	500 SF
TOTAL NET			6,900 SF
<i>Gross Factor at 25%</i>			25%
TOTAL GROSS			8,625 SF



Site Plan
0' 25' 50' 100' N



Waterfall Trail

Visitors experiencing the upper forest plateau and the forest realm expansion will now have an alternative route back to the heart of the zoo that doesn't require the use of the funicular or back tracking through the forest. This route will establish yet another continuous path of travel to and from the Zoo's central hub and café strengthening the overall circulation pattern throughout the zoo.



PROGRAM	
Habitat A	850 SF
Habitat B	630 SF
Pathway	950 LF



Central Cafe Renovations

The strategic concept of creating a destination food facility will not only help reinvigorate the Zoo's central hub but also upgrade the quality of food served and increase the potential revenue generated. Renovations to the existing food service building will include an expansion which allows guests to order and dine indoors, upgrades to the kitchen which will allow for an increase in menu options and food quality, and a new level of exhibit synergy which will allow visitors to dine while overlooking the animals in adjacent exhibits. The central café will also offer quicker grab and go products for visitors looking for refreshment. Positioned in the heart of the zoo, the central café renovation will help redefine the Zoo's core zone and keep the space activated throughout the day.

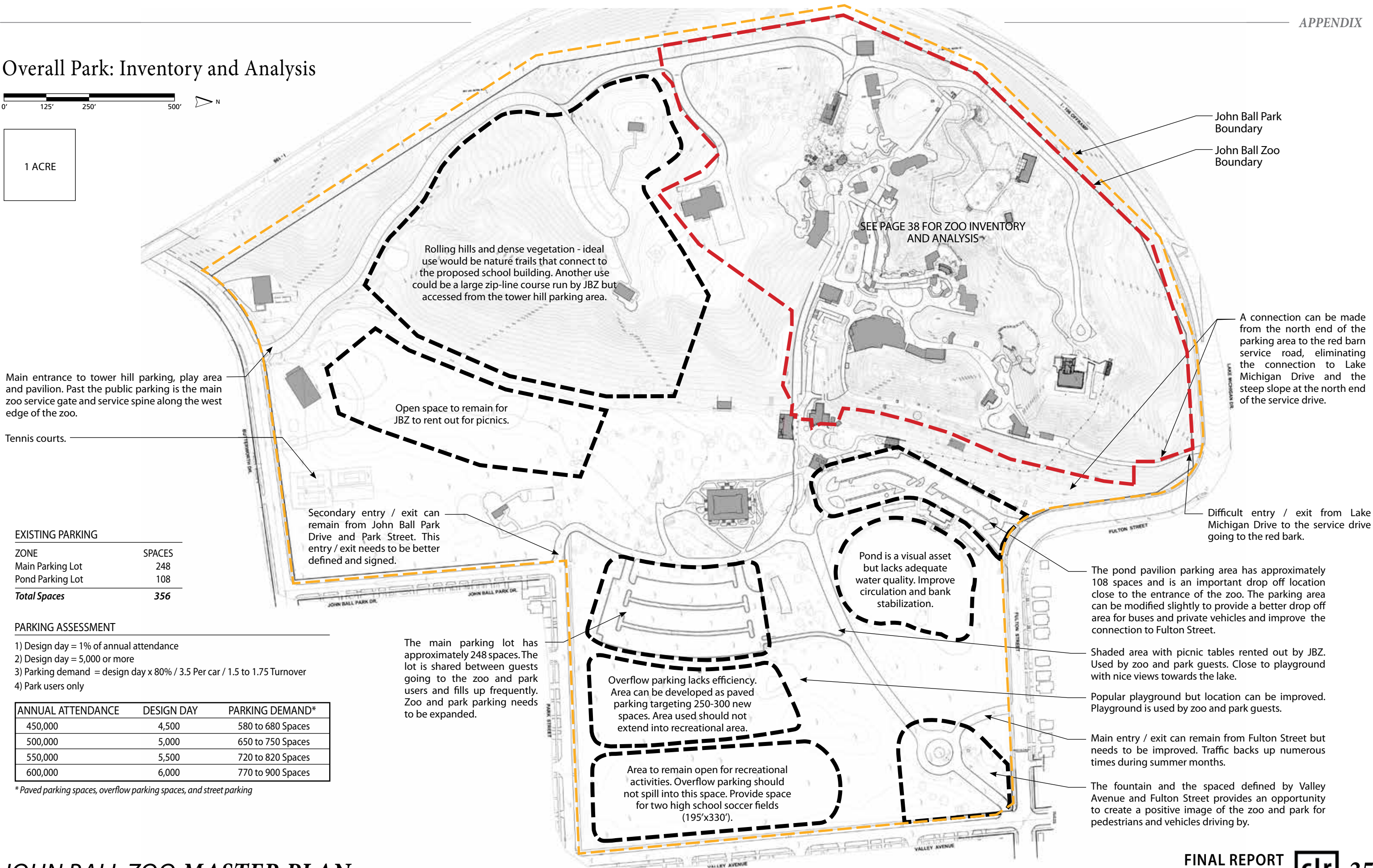
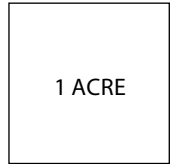


PROGRAM	
Cafe Expansion	600 SF
Dining Deck	2,400 SF
Service Zone	650 SF



APPENDIX

Overall Park: Inventory and Analysis



EXISTING PARKING

ZONE	SPACES
Main Parking Lot	248
Pond Parking Lot	108
Total Spaces	356

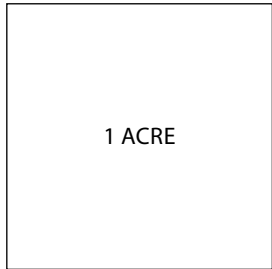
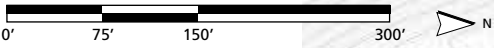
PARKING ASSESSMENT

- 1) Design day = 1% of annual attendance
- 2) Design day = 5,000 or more
- 3) Parking demand = design day x 80% / 3.5 Per car / 1.5 to 1.75 Turnover
- 4) Park users only

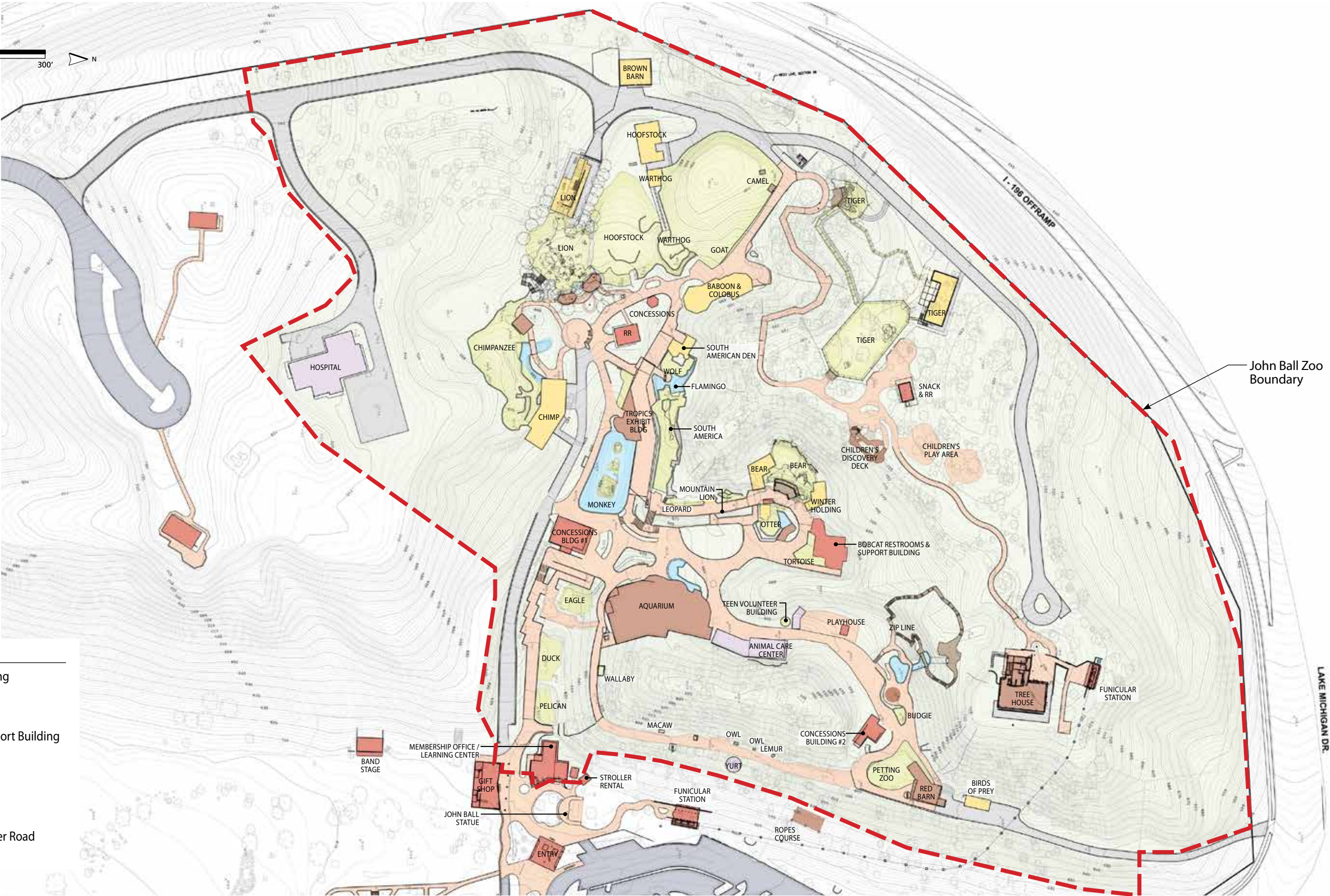
ANNUAL ATTENDANCE	DESIGN DAY	PARKING DEMAND*
450,000	4,500	580 to 680 Spaces
500,000	5,000	650 to 750 Spaces
550,000	5,500	720 to 820 Spaces
600,000	6,000	770 to 900 Spaces

* Paved parking spaces, overflow parking spaces, and street parking

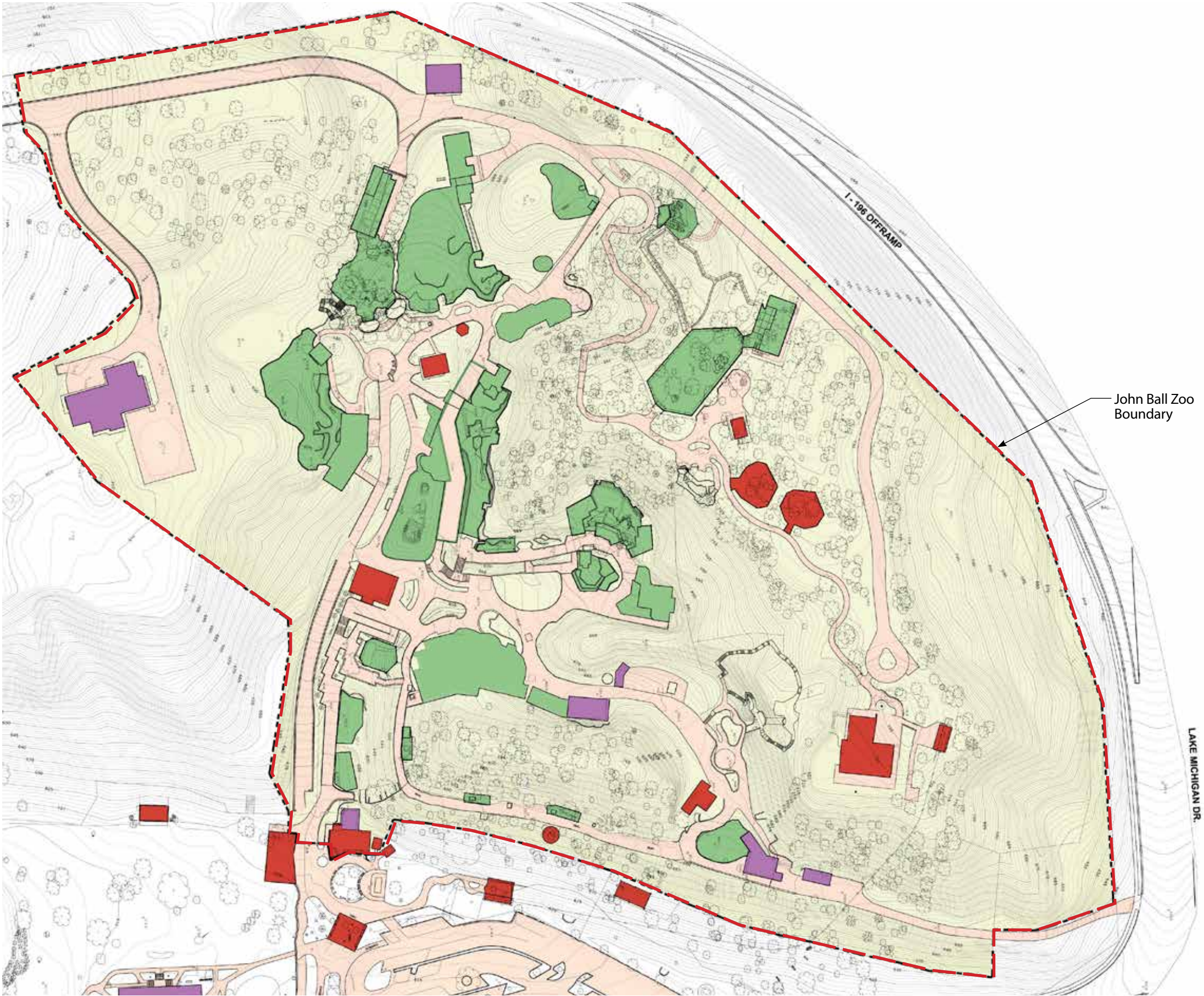
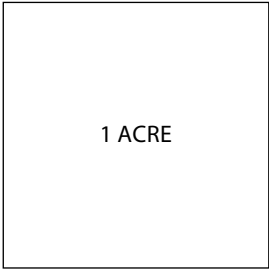
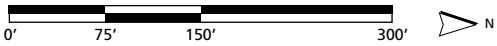
Existing Zoo



- LEGEND
- Visitor Services Building
 - Exhibit Building
 - Holding Building
 - Administration / Support Building
 - Animal Exhibit
 - Water
 - Visitor Path
 - Parking
 - Service / Zoo Perimeter Road
 - Buffer Vegetation



Existing Zoo: Land Use



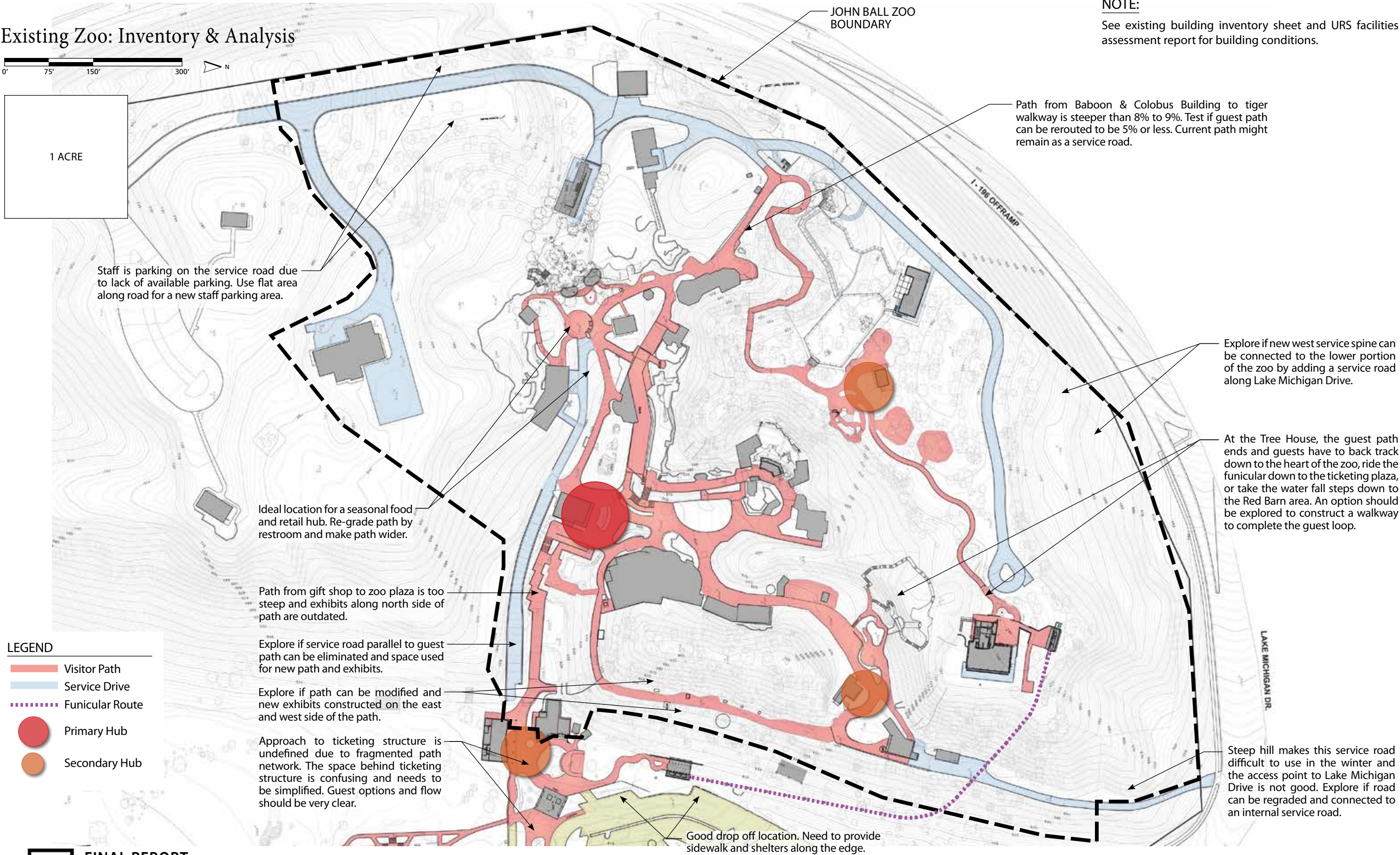
John Ball Zoo
Boundary

LAKE MICHIGAN DR.

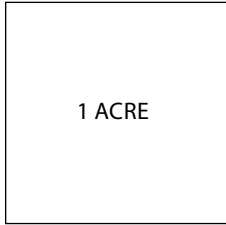
LEGEND

- Animal Exhibit and Holding
- Visitor Services
- Administration & Operations Buildings
- Paths, Roadways & Parking
- Landscape Buffer

Existing Zoo: Inventory & Analysis



Existing Zoo: Zones

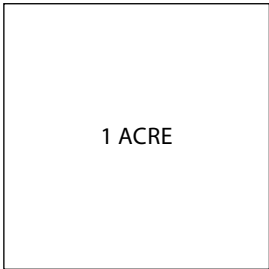


LEGEND

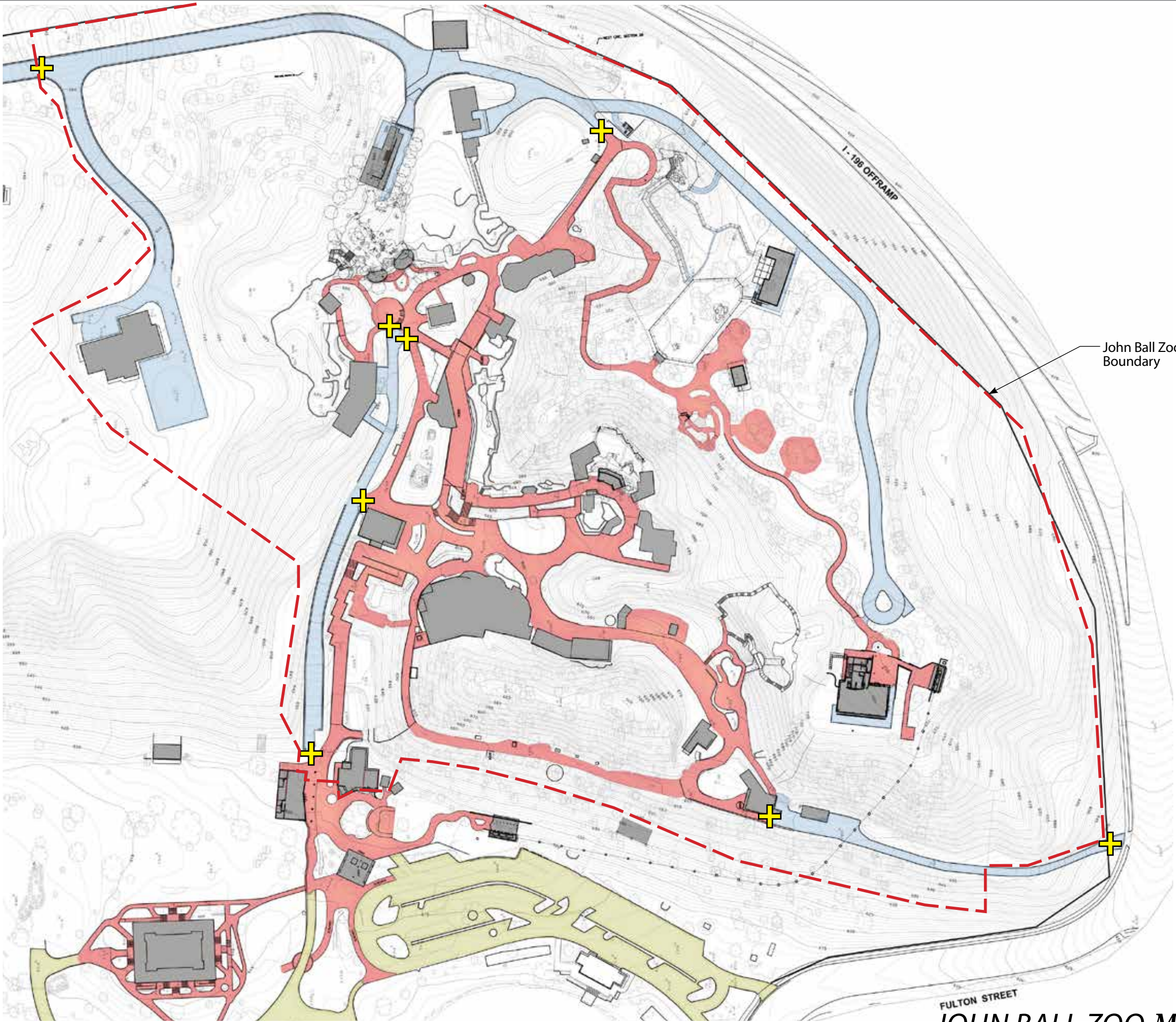
- Infrastructure
- Guest Services
- Attractions
- Parking



Existing Zoo: Circulation

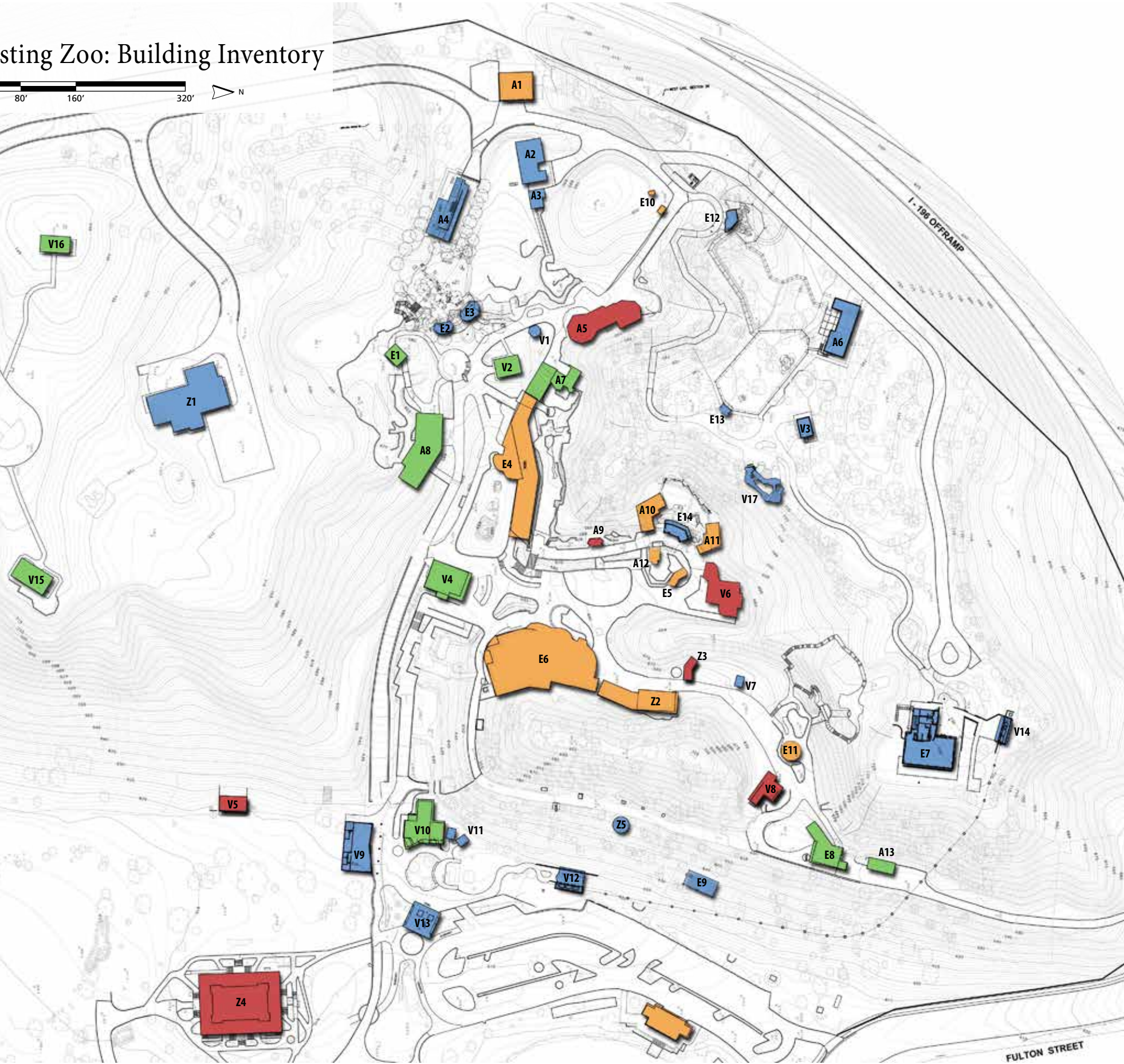


- LEGEND
- Visitor Circulation
 - Service Circulation
 - Visitor Vehicular Circulation
 - Service Gate



John Ball Zoo
Boundary

Existing Zoo: Building Inventory



VISITOR AMENITY BUILDING		COND.	SUIT.	SF	COMMENTS
V1	Concessions	LT	G	230	
V2	Restrooms	I	G	990	
V3	Snack and Restroom	LT	G	500	
V4	Concessions Building #1	I	G	2,675	
V5	Band Shell	TP	N/A	880	
V6	Bobcat Restrooms and Support Building	TP	F	2,570	
V7	Playhouse	LT	G	175	
V8	Concessions Building #2	TP	P	1,180	
V9	Gift Shop	LT	G	2,840	
V10	Membership Office / Learning Center	I	G	2,940	
V11	Stroller Rental	LT	G	380	
V12	Funicular Station	LT	G	1,180	
V13	Entry	LT	G	1,750	
V14	Funicular Station	LT	G	650	
V15	Upper Park Stone Pavilion	I	G	1,650	
V16	Upper Park Restrooms	I	G	1,040	
V17	Tree Deck Overlook	LT	G	2,190	
V18	Lake Pavilion	TP	G	2,200	
V19	Lower Park Restroom	I	G	1,040	

EXHIBIT BUILDING		COND.	SUIT.	SF	COMMENTS
E1	Chimpanzee Viewing	I	G	560	
E2	Lion Viewing #1	LT	G	460	
E3	Lion Viewing #2	LT	G	460	
E4	Tropics Exhibit Building	U	F	7,360	
E5	Otter Viewing	U	G	350	
E6	Aquarium	U	F	12,875	
E7	Tree House	LT	G	4,780	
E8	Red Barn	I	G	2,050	
E9	Ropes Course	LT	G	1,050	
E10	Camel	U	G	150	
E11	Budgie	U	F	400	
E12	Tiger Flex Habitat Viewing	LT	G	580	
E13	Tiger Habitat Viewing	LT	G	150	
E14	Grizzly Bear Viewing	LT	G	745	

ANIMAL HOLDING BUILDING		COND.	SUIT.	SF	COMMENTS
A1	Brown Barn	U	F	2,050	
A2	Hoofstock Holding Building	LT	G	2,160	
A3	Warthog Holding Building	LT	G	550	
A4	Lion Holding Building	LT	G	2,700	
A5	Baboon & Colobus Holding Building	TP	P	3,570	
A6	Tiger Holding Building	LT	G	2,280	
A7	South American Den	I	F	2,000	
A8	Chimpanzee Holding Building	I	G	4,100	
A9	Mountain Lion Holding	TP	P	1,500	
A10	Grizzly Bear Holding	U	F	1,300	
A11	Winter Holding Building	U	F	930	
A12	Otter Holding Building	U	F	340	
A13	Birds of Prey Holding Building	I	F	670	Summer only

ZOO SUPPORT / ADMINISTRATION BUILDING		COND.	SUIT.	SF	COMMENTS
Z1	Hospital	LT	G	6,880	
Z2	Animal Care Center	U	F	4,740	
Z3	Teen Volunteering Building	TP	F	400	
Z4	Administration Building	TP	F	20,800	
Z5	Yurt	LT	G	500	
Z6	Central Services Building	LT	G	4,150	

KEY

COND. = CONDITION

- LT = Building will be useful for long term (20+ yrs)
- I = Building useful for immediate term (10-20 yrs)
- U = With upgrade, building useful (10-20 yrs)
- TP = Top priority - replace or renovate now (<10 yrs)

SUIT. = SUITABILITY

- G = GOOD - building use meets or exceeds today's standards
- F = FAIR - building use could meet today's standard with reasonable improvements
- P = POOR - building use does not meet today's standards

Proposed Zoo: Guest & Service Circulation



- Legend**
- Primary and Secondary Guest Hubs
 - Primary Guest Paths
 - Secondary Guest Paths
 - Primary Guest Services (Ticketing, Gift, Restrooms, Food, Event, etc.)
 - Primary Service Routes
 - Guest Circulation
 - Service Circulation & Parking