Wayfinding Evaluation Project

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# Table of Contents

**Executive Summary** .......................................................................................................................... 3

**Overview** ........................................................................................................................................... 4

  - The Original Wayfinding System ........................................................................................................ 4
  - The New Wayfinding System ................................................................................................................ 5
  - Purpose of Evaluation ............................................................................................................................ 6

**Impact of the Literature Review** ....................................................................................................... 8

  - Maps ....................................................................................................................................................... 8
  - Signs ........................................................................................................................................................ 8
  - Previous evaluations studies .................................................................................................................. 9

**Contextual Factors** .............................................................................................................................. 10

**Methodology** ....................................................................................................................................... 11

**Findings** ............................................................................................................................................... 14

  - **Part 1: Analysis of Wayfinding Experience Based on Zoo Familiarity** ........................................... 15
    - Wayfinding Experience in Zoo Members Versus Non-Members ......................................................... 15
  - **Part 2: Analysis of the Usage of Wayfinding Tools** ........................................................................ 17
    - General Usage of the Wayfinding Tools ............................................................................................... 17
    - How Distinct Groups Used Wayfinding Tools ..................................................................................... 18
    - General Conclusions about the Usage of Navigational Tools ............................................................. 19
    - Wayfinding Use and it’s Affect Upon Various Groupings .................................................................. 20
    - Summary of the effects of wayfinding tools and experience on groups .......................................... 22
  - **Part 3: Wayfinding Experiences and Visitor Contributions** ............................................................. 23
    - Geographical Location of Hard-To-Find Animals ................................................................................. 23
    - Visitor Input Regarding the Hand-Held Map ....................................................................................... 25
    - Visitor Input Regarding the Signage System ....................................................................................... 27

**Recommendations** .............................................................................................................................. 29

**Conclusion** ........................................................................................................................................... 31

**References** .......................................................................................................................................... 32

**Appendix 1: Evaluation Instrument** .................................................................................................... 33
Executive Summary

To improve visitor satisfaction at the San Diego Zoo, the wayfinding system should effectively assist visitors’ navigation of the large 100-acre landscape. An external consultant, tasked with developing an Interpretation Master Plan, found that the directional signage and the Zoo map for the original wayfinding system contributed to confusion and presented challenges to the visitor in finding his/her way around the Zoo.

In response to these findings, the Zoo developed and implemented a new wayfinding system in 2009. This system includes new Zoo zones, main streets, trails, and directional signage that link everything together on the map and throughout the Zoo.

The evaluators were tasked with assessing whether the new wayfinding system successfully helps visitors find their way around the Zoo and whether there are ways to improve the new system. The evaluators developed a three-page survey, which was filled out by 316 visitors at the exit of the Zoo. The majority of the respondents were not Zoo members (70%) and over half of the respondents were first-time visitors (54%).

Findings

After analyzing the data based on the four main evaluation questions, the evaluators found the following significant results:

- 294 (95%) visitors felt they found their way around either fairly well or very well.
- 254 (81%) visitors got lost only once, if at all, while at the Zoo.
- 226 (72%) visitors did not have trouble finding anything specific.
  - Out of 87 respondents who detailed what they had trouble finding at the Zoo, 14 had trouble finding the Elephant Odyssey.
- In looking at the use of wayfinding tools, the most commonly used tool was the handheld map, followed by the location poles, and the other four tools. The least used tool was the zone map.
- The most frequent suggestion for the map was to include suggested routes to see certain animals, while the most frequent suggestion for the signs was to have arrows that are clearer in the direction they point.

Recommendations

The evaluation team recommends to avoid signage pollution (instead of adding more signs, consider moving the signs to areas that are more visible), consider transition zones in the form of floor directories, educate visitors about the signage that exists, provide optional itineraries, highlight new and advertised exhibits, and continue to obtain input on the wayfinding system.
Overview

The San Diego Zoo recently redesigned their wayfinding system (hand-held maps and signs), to help visitors find their way around easier, and therefore, improve visitor satisfaction. The evaluators were tasked with assessing whether the new wayfinding system effectively helps visitors find their way around the Zoo and whether there are ways to improve the new system. This evaluation is especially timely due to the proposed installation of a similar system at the Zoo’s sister campus, the Wild Animal Park.

Background

The San Diego Zoo is a world-renowned facility that houses over 4,000 animals from more than 800 species, while also containing more than 700,000 exotic plants. The Zoo is situated on a 100-acre plot just north of downtown San Diego in Balboa Park. It is part of a nonprofit organization, the Zoological Society of San Diego, which includes the Wild Animal Park and the San Diego Zoo’s Institute for Conservation Research.

The San Diego Zoo is not limited to animal and plant exhibits, it also provides many services to its visitors – including tours, shows, camps, educational experiences, and activities for all ages. The Zoo’s mission is “conservation, education, and recreation organization dedicated to the reproduction, protection, and exhibition of animals, plants, and their habitats” (sandiegozoo.org).

Over five million visitors explore the vast terrain of the San Diego Zoo each year. The Zoo has the largest Zoological membership association in the world. There are currently 265,000 member households, which means approximately 600,000 adults and children have memberships. The Zoo also provides complimentary admission to educational programs in San Diego.

The Zoo staff prides itself in having good customer relations and providing an outstanding guest experience. In 2007, the San Diego Zoo hired an external consultant to develop an interpretation master plan, which was meant to improve the guest experience. The consultant determined that one of the main problems Zoo visitors confront is wayfinding. The consultant suggested that enhancing the wayfinding system is the necessary first step in improving the overall guest experience since finding exhibits is prerequisite to experiencing exhibits and the messages they contain.

The Original Wayfinding System

Without an exceptional map and directional signage, navigating through the San Diego Zoo can be a very frustrating experience. Unlike most amusement parks, the Zoo is not a big, flat, open area. Rather, it has an extensive tree canopy cover, which blocks visitors from looking around to get their bearings. Many individuals take the Skyride to get a better perspective of the Zoo, but
the tree canopy limits the view of many exhibits below. Furthermore, the Zoo’s terrain includes canyons with steep grades and confusing pathways.

The original wayfinding system at the Zoo had a multitude of problems. Debra Erickson, the Associate Director of Communications and Interpretation at the Zoo, explained that many individuals would be standing and looking at a map of the Zoo and they could not locate their current position. Both the directional signage and the zoo map contributed to confusion and presented challenges to the visitor in finding his/her way around the Zoo.

The New Wayfinding System

The Zoo developed and implemented a new wayfinding system in 2009. This system includes new Zoo zones, main streets, trails, and directional signage that link everything together on the map and throughout the Zoo.

Zones

The designers of the new wayfinding system decided to “chunk” the map into different zones in order to make reading and understanding the entire system faster and easier. The Zoo curators found “like-areas” to combine into zones and came up with 10 zones: Lost Forest, Africa Rocks, Polar Rim, Asian Passage, Urban Jungle, Outback, Elephant Odyssey, Panda Canyon, Discovery Outpost, and the Badlands. Each zone has its own color on the map and the animals are listed according to their zone. The zones were designed to help visitor’s quickly scan the map to figure out where they are and how to get to the next area of interest. The map is much simpler, containing only the zones, streets, trails, and a few icons (i.e., restrooms, restaurants, shopping). Splitting the Zoo up into zones was not the only “fix” for the wayfinding system; in fact, the wayfinding system developers created a system of streets, trails, and directional signs to help improve the navigation around the Zoo without having a map in hand.

Streets

One of the main goals of the new wayfinding system was that the Zoo employees would be able to give someone directions to an area of the Zoo in one sentence. In order to accomplish this goal, the wayfinding system developers created four main streets that serve as landmarks – a place for visitors to return to if they get lost. The four main streets are Front Street (stretches across the front of the Zoo – from the Children’s Zoo to Elephant Odyssey), Center Street (from Koalas to Pandas), Park Way (connects Front Street to the Polar Rim and Elephant Odyssey), and Easy Street (which has no exhibits on it, but acts like a street by providing access to all of the other trails).

Trails

There are many pathways around the Zoo that branch off of the four main streets. These pathways were turned into “trails” and were designed based on the National Park System’s
trails. They have a trail head sign at the entrance of each trail, which includes a visual of the entire trail, information about how long it takes to get to the main animals, what the terrain is like, and how to access one of the four main streets. There are also trail markers along the trail that have icons for the closest animal exhibit, arrows, grade of terrain, and the name of the trail. The trail markers help remind visitors which trail they are on as they make their way throughout the Zoo.

**Directional Signage**

There are a variety of signs throughout the Zoo that help visitors connect the map, streets, and trails, while also maintaining consistency for the wayfinding system (Table 1). The tall map location poles have a large red circle with a number on the very top. This number corresponds to the visitor’s map and is an easy “you are here” way to help the visitors know exactly where they are by quickly scanning their maps. The map location poles have a hierarchy of pointer signs – the main streets are at the top, then the attractions, zones, and other information (such as exit or busses) are listed below that. There are also line of sight poles for the main streets. These poles are color-coded and have the name of the street printed largely for easy reading. Along with the trail markers and heading signs mentioned in the trails subheading, there are also large map signs, which are bigger versions of the visitor’s maps.

**Purpose of Evaluation**

The San Diego Zoo plans to implement this new wayfinding system at the Wild Animal Park. Therefore, a collection of Zoo stakeholders would like to know if the new system is working and how it could be improved before the Wild Animal Park implementation.

The primary purpose of this evaluation is to determine whether individuals can find their way around the Zoo using the new wayfinding system. The new wayfinding system refers to the six types of wayfinding tools as well as directions provided by Zoo staff.

The secondary purpose of this evaluation is to determine how the Zoo staff members can improve the wayfinding system. Our key stakeholder, Debra Erickson, the Associate Director of Communications and Interpretation at the Zoo, would like to know if there are missing signs, if the map needs to be tweaked to improve navigation, and any other ways the Zoo staff can adjust the new wayfinding system to further improve the guest experience.
### Table 1: San Diego Zoo Wayfinding Tools (Signs)

<table>
<thead>
<tr>
<th>Sign type</th>
<th>Sign Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Map Location Pole</td>
<td>Helps individuals quickly locate where they are using their map. The red circle with a number at the top of the pole corresponds to a red circle with the same number on the hand-held map.</td>
<td></td>
</tr>
<tr>
<td>Street Sign</td>
<td>These poles are located along each of the four main streets.</td>
<td></td>
</tr>
<tr>
<td>Trailhead Sign</td>
<td>The trailhead signs (and trail markers) were based on the National Park sign system. These signs are located at the entrance to each trail and provide a map of the entire trail.</td>
<td></td>
</tr>
<tr>
<td>Trail Markers</td>
<td>Trail markers have the name of the trail as well as icons for animal exhibits, the closest street, and grade of terrain.</td>
<td></td>
</tr>
<tr>
<td>Zone Maps</td>
<td>These are large, life-size versions of the hand-held map. These maps also have a “you-are-here” locator icon.</td>
<td></td>
</tr>
</tbody>
</table>
Impact of the Literature Review

The literature informed the evaluation in several ways, including how wayfinding is defined, how visitors use wayfinding tools, and whether wayfinding tools effectively help individuals find their way around.

Wayfinding

According to Golledge (1999), wayfinding is the process of following a route from its origin to the destination. Raubal, Egenhofer, Pfoser, & Tryfona (1997) stated more generally that the main purpose of wayfinding is to find one’s way from one place to another. There are many tools that can help facilitate wayfinding, including hand-held maps, larger stationary or wall maps, directional signs, floor directories, and informational desks and kiosks (Bitgood, 1989). These tools help provide a feeling of security and give visitors a choice of options (Bechtel & Churchman, 2002). In particular, maps and signs, as well as visitor circulation, all play an important role in wayfinding.

Maps

The two types of maps most commonly used in Zoos are the handheld visitor maps and the large “you-are-here” maps. According to Ransley (1988), hand-held maps are a significant part of any wayfinding system and most visitors expect them when they enter a site. In fact, the hand-held map is the most-used device for wayfinding (Bitgood, 1982). Bitgood and Richardson (1986) conducted a study at the Birmingham Zoo and found that 77% of visitors who received hand-held maps were observed using them. They also found that the visitors who were given hand-held maps viewed a larger percentage of the exhibit areas, 86%, compared to the visitors that did not receive a map, 78%.

Hand-held maps provide an overall view of the park and ongoing wayfinding assistance, while also including important park details, such as exhibit/show times, park hours, suggested circulation routes, and regulations. It is very important to keep maps simple, yet also give enough information so that the visitor can find where he or she is at any given moment (Levine, 1982). Ransley (1988) found that effective hand-held maps were sufficiently sized and featured a three-dimensional perspective, easily recognized routes, identifiable landmarks, location of visitor amenities, and additional information about the site (regulations, hours, etc...).

You-are-here maps are on-site maps that help visitors correlate their hand-held maps with the signage around the park (Ransley, 1988). These maps are typically placed at key intersections and help visitors confirm their location and determine where to go next (which direction to take). An important feature of you-are-here maps is the inclusion of numerous orientation cues, which provide many points of correspondence between the map and surrounding environment and help individuals quickly locate where they are in relation to key areas/landmarks at the site (Ransley, 1988). Levine’s (1982) study on you-are-here maps found that viewers must have two
pieces of information to be able to relate the map to the environment. One piece of information should be the “you-are-here” symbol, while the other piece(s) can be signs/labels on the map or distinctive landmarks. Levine also suggests that you-are-here maps parallel the surrounding environment (i.e., looking up a map from the you-are-here symbol should relate to the idea of looking forward, while looking below the symbol correlates with looking backwards).

**Signs**

Unlike board maps, which are mainly used for conceptual orientation, directional signs are mainly used for wayfinding (Bitgood, 1982). Directional signs are essential for visitors, especially those who have difficulty reading maps or prefer to wander around the site. Directional signs should be located throughout the site, especially at intersections and areas where large groups of people gather. Ransley (1988) explains that the more complex that site design is the more directional signs are needed to prevent confusion and frustration among the visitors.

**Previous evaluations studies**

Although there is relatively scant research regarding Zoos, there is one study that we can turn to regarding orientation and circulation. In a study on wayfinding at the Minnesota History Center (Haywood & Anderson, 1996), evaluators chose to look at two different types of orientation devices that included directional signage and floor directories.

The object of the study was to discover whether new wayfinding tools helped increase visitors’ knowledge and viewings of key areas within the museum, especially the exhibits on the third floor. Data were collected during a baseline period, once again after the addition of the directional signage, and then a third time after the addition of a floor directory. Interviews were conducted at the exit ($n=585$) and on the third floor ($n=581$) near several different exhibits. In addition, observations ($n=832$) were conducted as visitors entered the building. The final results showed improvement in that the floor directories resulted in visitors making fewer stops at decision points, spending less time looking for things, were less likely to use the map and were less likely to ask for directions. Directional signage and maps also helped visitors locate key exhibits more easily. Problem areas after the evaluation were that one-third of visitors still asked for directions from volunteers and, given that 90% of visitors claimed to rely on signage to locate exhibits, only 50% of the visitors that reached the third floor indicated that the signs were helpful to them.

Other notable results were that the visitors’ desire for more wayfinding assistance dropped from 48% to 39% after the first intervention (directional signage) and then dropped down to 19% after the second intervention (floor directory). Lastly, the number of people taking maps increased after the interventions, however, the number of people actually using them, decreased by the end of the study.
Contextual Factors

There are several factors that could potentially impact this evaluation project. These factors relate to time, instrumentation, sampling and interpretation constraints.

**Time:** The entire evaluation project took place over a 10-week period. This included the development of the evaluation plan, design and pilot testing of the instruments, data collection, data analysis, and recommendations in the form of a final report. This left very little time for designing and fine-tuning the instruments as well as data collection. The limited time frame resulted in less time for pilot testing and refining the survey, as well as a smaller sample size.

**Comparison of Pre-Post Wayfinding:** Evaluation planning from the outset of the wayfinding system was kept to a minimum due to budgetary constraints. As a result, there were very few indicators that can be measured in terms of comparing visitor satisfaction before and after the new wayfinding system.

**Generalization of the Evaluation Results:** Since one of the primary goals is to inform the potential of a similar wayfinding system in a sister facility (Wild Animal Park), it must be kept in mind that these two parks are different in terms of their geographical layout, their encounters or attractions and their overall “personality.” As a result, the recommendations may not be directly transferable and there may be a strategic desire to maintain a different appeal at each park.

**Sample:** The sample was not a random sample due to time constraints. The evaluators collected responses from individuals leaving the Zoo on a specific day for a six-hour time period. This convenience sample limits the generalizability of the evaluation results because the sample was not balanced with regard to visitor attributes (age, membership, previous knowledge of the Zoo, etc...) and the summer crowd responses may vary significantly from Fall or Spring visitors.
Methodology

Study Design

The evaluators used the impact evaluation approach to create a study that would provide evidence of whether the wayfinding system was successful and to help key stakeholders make informed decisions about replication of a program. Assessing the impact of a program is important for determining whether the program has met the needs of the participants and to identify any unintended outcomes of a program. By assessing the extent to which the needs of the Zoo visitors have been met, Zoo officials have an opportunity to fine tune the system and they can better justify the creation of a similar wayfinding system at another theme park location (Owen, 2007).

In order to evaluate the impact of the new wayfinding system, the evaluators designed a survey that addressed the four main evaluation questions:

- Did visitors come into the Zoo with existing skill/knowledge that impacted their wayfinding experience?
- Did visitors lose their way while at the Zoo?
- Did visitors use the wayfinding tools?
- Did visitors have any ideas about ways to improve the new wayfinding system?

The evaluators collected 316 survey responses at the exit of the Zoo. The visitors that took the survey were given a small gift (magnet or luggage tag) once they turned in a complete survey. The majority of the survey respondents were first-time visitors and were not members of the Zoo. The following sub-sections provide an in-depth look at the evaluation instrument and survey respondents.

Evaluation Instrument

The evaluators designed a paper-based exit survey to collect information from visitors about their experiences finding their way around the Zoo. Based upon suggestions from the faculty advisor and key stakeholder, the survey went through many redesigns before it was ready for pilot testing.

Pilot Testing

On Wednesday, July 22, 2009, the evaluators pilot-tested the survey at the San Diego Zoo. The evaluators approached individuals near the entrance and exit and asked them to spend a few moments filling out a survey. The evaluators stood nearby the respondents to answer any questions and determine how long it took to complete the survey. A few follow-up questions were asked to ensure that the survey was comprehensible and the respondents received a small gift (Panda Bear magnet or Zoo or Wild Animal Park luggage tag) for their participation.
After obtaining surveys from a convenience sample of 12 individuals, the evaluators decided to make the following adjustments to the survey:

- Reduce the number of questions to shorten the time needed to complete the survey.
- Reduce the text in as many questions as possible (a few questions had too many words).
- Delete the question asking about when, where, and why visitors got lost at the Zoo because these questions were answered by other questions in the survey (what did you have trouble finding, what would you like changed on the maps/signs).
- Delete the question about the “effectiveness” of the wayfinding tools. The evaluators determined that “effectiveness” is a very broad term and respondents had a difficult time answering these questions.
- Rephrase the question about rating their overall wayfinding ability in on a scale of 1-10. The 10-point scale made it difficult for individuals to differentiate between points.
- Add a question about pre-planning to determine whether individuals that spent some time planning their day once they entered had a better time finding their way around the Zoo.

The evaluators made the changes to the survey and sent it to their faculty advisor and the key stakeholder for final approval. Once the new survey was approved, data was collected on Saturday, July 25, 2009, at the San Diego Zoo. The visitors could choose to take the survey while standing near the survey table or take the survey, which was on a clipboard, find a seat and fill it out, and return the survey. All individuals that filled out the surveys were given a small gift: Panda bear magnet, San Diego Zoo unicorn luggage tag, or Wild Animal Park tiger luggage tag.

**Final Instrument**

The survey was split into three pages (printed single-sided). The survey contained 11 questions, which were mainly multiple-choice with three response options. The evaluation instrument (Appendix 1) was designed to cover the main evaluation questions:

- What were the general characteristics of Zoo visitors?
- Did the visitor use the new wayfinding system?
- How often were wayfinding tools used at the Zoo?
- Did various groups rely on the wayfinding tools differently?
- Did the guest come into the Zoo with existing skill/knowledge that impacted their wayfinding experience?
- Were certain groups more likely to perceive themselves as being lost?
- How often did people ask for directions and what were the outcomes?
- How did people perceive their overall wayfinding ability?
- Did visitors have any ideas about ways to improve the new wayfinding system?
Subjects

The evaluation survey participants were visitors that were exiting the Zoo when the evaluators were handing out surveys. The evaluators did not approach individuals to fill out the surveys. Instead, it was up to each individual to approach the survey table and pick up a survey to complete. The individuals filling out the survey had to be at least 16 years of age. The evaluators collected 316 surveys.

The majority of the survey respondents were not members of the San Diego Zoo. In fact, Of the 316 visitors that filled out surveys, only 95, 30%, were Zoo members. Out of the 95 Zoo members, more than half (59) frequently visited the Zoo, while only nine of the Zoo members were visiting for the first time (Table 2).

Table 2: Frequency of visits by Zoo members

<table>
<thead>
<tr>
<th></th>
<th># of members</th>
<th>% of members</th>
</tr>
</thead>
<tbody>
<tr>
<td>I visit often</td>
<td>59</td>
<td>62%</td>
</tr>
<tr>
<td>It’s been a long time since my last visit</td>
<td>27</td>
<td>28%</td>
</tr>
<tr>
<td>This is my first visit</td>
<td>9</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>100%</td>
</tr>
</tbody>
</table>

On the other hand, the majority of the visitors that were not members of the Zoo were visiting the Zoo for the first time. Out of the 221 visitors that were not members of the San Diego Zoo, 119 were visiting the Zoo for the first time (Table 3).

Table 3: Frequency of visits by non-members

<table>
<thead>
<tr>
<th></th>
<th># of non-members</th>
<th>% of non-members</th>
</tr>
</thead>
<tbody>
<tr>
<td>I visit often</td>
<td>14</td>
<td>6%</td>
</tr>
<tr>
<td>It’s been a long time since my last visit</td>
<td>88</td>
<td>40%</td>
</tr>
<tr>
<td>This is my first visit</td>
<td>119</td>
<td>54%</td>
</tr>
<tr>
<td>Total</td>
<td>221</td>
<td>100%</td>
</tr>
</tbody>
</table>
Findings

As stated in the previous section of this report, this study was based on four main evaluation questions:

- Did visitors come into the Zoo with existing skill/knowledge that impacted their wayfinding experience?
- Did visitors lose their way while at the Zoo?
- Did visitors use the wayfinding tools?
- Did visitors have any ideas about ways to improve the new wayfinding system?

In this section we take an in-depth look at the visitor’s experience at the Zoo and compare that with their overall wayfinding experience.

Results of the evaluation were split into the following three sections:

**Part 1: Analysis of Wayfinding Experience Based on Zoo Familiarity** – information about the survey respondents’ prior knowledge of the Zoo and their overall wayfinding experience.

**Part 2: Analysis of the Usage of Wayfinding Tools** - an analysis of the wayfinding tools.

**Part 3 : Wayfinding Experiences and Visitor Contributions** – a compilation of the survey respondents’ suggestions for improving the wayfinding system.
Part 1: Analysis of Wayfinding Experience Based on Zoo Familiarity

Wayfinding Experience in Zoo Members Versus Non-Members

While the majority of visitors found their way around the Zoo at least fairly well, Zoo members (Figure 1) had an easier time finding their way around the Zoo than non-members (Figure 2). In fact, when the survey respondents were asked to rate how well they found their way around the Zoo, 75% of the Zoo members selected “very well,” 24% selected “fairly well,” and only 1% individual selected “not very well.” On the other hand, 57% of the non-members rated their overall wayfinding experience “very well,” while 36% selected “fairly well,” and the remaining 7% of individuals did not have a good wayfinding experience at the Zoo.

Overall (Figure 3), however, 294, 95%, of the 309 respondents selected that they found their way around the Zoo either fairly well or very well. Meanwhile, only 15, 5%, of the respondents did not have a very good wayfinding experience. It should be noted that the ability to navigate well through the Zoo is based upon the perceptions of the individual and not upon an objective criterion.

We now turn to three additional comparisons between Zoo Members and non-members (Figure 4 – next page). Zoo members did not lose their way as often nor did they have as much trouble finding things at the Zoo. In fact, only 32% of the Zoo members lost their way, while more than half of the non-members became lost, 51%, during their visit. Only 20% of the Zoo members had trouble finding something and 37% asked a Zoo employee for help to find something one or more times. Meanwhile, 31% of the non-members had trouble finding something and 53% asked a Zoo employee for help finding something at least once.
Figure 4: Comparison of Zoo Members & Non-Members

<table>
<thead>
<tr>
<th></th>
<th>Zoo Members</th>
<th>Non-Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>91</td>
<td>218</td>
</tr>
<tr>
<td>% of Each Group of Visitors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Became Lost</td>
<td>32</td>
<td>51</td>
</tr>
<tr>
<td>Trouble Finding Something</td>
<td>20</td>
<td>31</td>
</tr>
<tr>
<td>Asked for Directions</td>
<td>37</td>
<td>53</td>
</tr>
</tbody>
</table>
Part 2: Analysis of the Usage of Wayfinding Tools

An important aspect of this study was to determine which wayfinding system elements visitors used to navigate through the Zoo. There were six navigational tools listed on the survey: the hand-held map, map location poles, street signs, zone maps, trailhead signs, and trail markers. Visitors were asked to indicate how frequently they relied upon each by responding to a rating scale that included choices of frequently, a few times, or never.

General Usage of the Wayfinding Tools

Table 4 presents a summary of wayfinding tool use. Elements are presented in decreasing frequency of use. The handheld map, therefore, was the most often used element, followed by the map location poles, the streets signs and then the remaining three tools. Out of the 316 visitors, 59% used the hand-held map frequently.

Table 4: Wayfinding Tool Usage Among All Visitors

<table>
<thead>
<tr>
<th>Tool</th>
<th>Frequent Use</th>
<th>Occasional Use</th>
<th>Never Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handheld Map</td>
<td>59%</td>
<td>32%</td>
<td>8%</td>
</tr>
<tr>
<td>Map Location Pole</td>
<td>37%</td>
<td>46%</td>
<td>16%</td>
</tr>
<tr>
<td>Street Sign</td>
<td>31%</td>
<td>48%</td>
<td>22%</td>
</tr>
<tr>
<td>Trailhead Sign</td>
<td>30%</td>
<td>42%</td>
<td>28%</td>
</tr>
<tr>
<td>Trailhead Marker</td>
<td>26%</td>
<td>42%</td>
<td>31%</td>
</tr>
<tr>
<td>Zone Map</td>
<td>20%</td>
<td>49%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Regarding those that never used specific wayfinding tools, the hand-held map accounted for eight percent of the visitor population and the percentages increase to 40% when referring to those who never used the zone maps.

Trends of Wayfinding Usage Among Experienced and Novice Visitors

This section of the evaluation report investigates whether wayfinding system use varies by level of familiarity with the zoo. It examines which groups are using the tools more often. In the following comparison graphs, returning visitors are those that are returning after “a long time” while regular visitors are those that visit often. The following three sections will be referring to Table 5.
**Wayfinding Usage for First-Time Visitors**

Seventy-three percent of first-time visitors used the hand-held map frequently and, 43%, the map location poles frequently; more so than the other two groups. Roughly one-third frequently used the street signs, 30%, and trailhead signs, 31%, and less than one-fourth relied heavily on trailhead markers, 22%, and zone maps, 21%. Occasional use of tools in this group (Figure 7) is fairly constant, 39-54%, with street signs having the highest degree of occasional usage with the exception of the hand-held map that falls down as low as 24%. Regarding tools that are never used at all, this group was the least likely to claim that it had never used a particular wayfinding tool. Stated differently, first-time visitors were more likely to try using a tool than the other two groups.

| Table 5: Amount of Specific Tool Use Among First-Time, Returning & Regular Visitors |
|---------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| (n=314) | HH Map | Location | Street | TH Sign | TH Marker | Zone Map |
| Frequent Use | | | | | | |
| First-Time (n=127) | 73% | 43% | 30% | 31% | 22% | 21% |
| Returning (n=115) | 65% | 40% | 37% | 34% | 35% | 24% |
| Regular (n=72) | 25% | 24% | 24% | 24% | 20% | 11% |
| Occasional Use | | | | | | |
| First-Time | 24% | 42% | 54% | 16% | 49% | 21% |
| Returning | 30% | 45% | 44% | 22% | 38% | 42% |
| Regular | 51% | 56% | 42% | 28% | 37% | 38% |
| Never Used | | | | | | |
| First-Time | 3% | 15% | 16% | 23% | 29% | 40% |
| Returning | 4% | 15% | 19% | 28% | 27% | 24% |
| Regular | 30% | 21% | 35% | 37% | 44% | 51% |

**Wayfinding Usage for Returning Visitors**

Returning visitors (those who had not been to the zoo “for a long time”) used the hand-held map and map location poles frequently at a rate less often than first-time visitors but they still used them to a much greater degree than regular visitors. An interesting note is that returning visitors were more likely than other groups to rely heavily on the other four navigation tools with frequent use ranging from 37% with street signs down to 24% with the zone maps. Less
than half of this group used navigational tools occasionally but the rate of their use remained fairly constant across all six tools (from 30-45%).

**Wayfinding Usage for Regular Visitors**

The most interesting thing about those that visit the Zoo often was the constancy with which they refer to tools frequently (Figure 6 - ranging from 20-25%) with the exception of the zone map, 11%. In all cases, they are less likely to make frequent use of any tool than the other two groups. With 20-25% referring to various tools frequently, we can say that this group is diverse in the tools that they prefer.

Approximately one-third, 38%, to one-half, 56%, occasionally used the tools, with map location poles representing the highest level of occasional usage and trailhead markers being their last choice. Regular visitors were less likely than any other group to use navigational tools. In fact, the range of visitors that selected “did not use” for a wayfinding tool was from 21% (map location poles) to 51% (zone maps).

**General Conclusions about the Usage of Navigational Tools**

As one might conclude that the more familiar we are with our surroundings, the less likely we are to rely on maps or signage. This pattern of behavior is similar to what we see with regard to the three types of visitors that we have addressed. First-time guests relied more heavily upon the navigational tools in general than both of the other groups.

While first-time visitors had the most frequent use of the handheld map and location poles, returning visitors relied more heavily on the other four tools than did first-time visitors. Regular visitors were less likely to use any of the tools frequently and more likely to refrain from their use completely than the other two groups. A couple of interesting findings with regular visitors was that, regarding frequent use of the navigational tools, about one-fourth relied heavily on each of the tools (with the exception of the zone map), thus making it difficult to determine which tool they preferred the most. It did show, however, that they are the most diverse group with regard to their tool choices. Also, regarding the two tools that new and returning visitors relied upon most often (hand-held map and map location poles), regular visitors were almost equally likely to use these two tools frequently as they were to avoid using them altogether. This is a key difference that appears to come with experience.

**Wayfinding Use and it’s Affect Upon Various Groupings**

We have a fairly good picture of how certain groups of visitors use wayfinding tools. Next, we consider whether wayfinding use may have an effect upon other variables. In particular, this refers to the sense of feeling lost, feeling successful in navigating, deciding whether to ask questions, and determining whether pre-planning is an effective wayfinding strategy.
**Visitors Losing Their Way at the Zoo**

In general (Figure 8), 45% of the respondents became lost at least once, which suggests that there may be a small window of improvement in the navigational experience of Zoo visitors given the Zoo’s challenging terrain and previously anecdotally documented wayfinding challenges.

**Wayfinding and Being Lost**

A general assumption about maps and signs might be that, the more you study and rely on these tools to find your way, the less likely you are to become lost. This is not what was found, however, when groups were compared with regard to their usage of wayfinding tools. For instance, Figure 9 shows that, of the visitors who were lost at least once, 70% used their handheld map frequently while only 50% (Figure 10) of those who were not lost used the handheld map frequently.

While at first glance this seems counterintuitive, it appears to make a great deal of sense. Consider this restatement: the visitors who become lost more often are more likely to refer to their map (or other tools) to regain their bearings. At the same time, the visitors who are familiar with their surroundings will not become lost as often and, subsequently, do not need to turn to navigational tools in order to find their way.

To test this notion, visitor status was compared with being lost. The results support the notion that those who were regular (frequent) visitors of the Zoo were very unlikely to acknowledge being lost during their visit. A good way to think of this is to suggest that frequent use of wayfinding tools does not keep you from getting lost. Rather, frequent use of the tools may indicate that one has lost their way already and is using the wayfinding tools to find his or her way.
Wayfinding with Employee-provided Directions

On the occasion that visitors lose their way, the next logical step for them is to refer to navigational tools. One navigational source that Zoo administrators hope prove successful is their own personnel. One of the stated reasons for developing the new navigational system was to make it easier for Zoo personnel to give directions to visitors who are in need of assistance. In this section, we look at which groups needed directional assistance the most (Figure 11) and whether their inquiries resulted in successful outcomes (Figure 12).

Surprisingly, returning visitors, 24%, were far more likely than first-time visitors, 14%, to ask for direction two or more times. Some interesting notables regarding directional assistance is that first-time and returning visitors were similar as to whether they asked for directions a single time (36% and 41% respectively). Another interesting note is that one-half of first-time visitors never asked for directions whereas approximately one-third, 35%, of returning visitors did not ask for directions.

Fortunately, with the new streets and trails, the majority of the individuals that asked an employee for help found their destination easily. Of the 147 visitors that asked for directions one or more times, 108, 74%, felt that the directions were very helpful and found what they were looking for easily. Meanwhile, 34, 23%, individuals felt that the directions were at least somewhat helpful. The minimal differences between the various groups can be seen in Figure 11, especially with regard to not being able to find their location even after directions.

A very positive note is that only three to six percent of visitors were unable to find their desired destination after receiving directions from Zoo staff. This suggests that a second intent of the wayfinding system – making all directions possible in a sentence – was effective for improving visitor satisfaction.
**Likelihood of Asking for Directions**

The three groups considered here are those that asked for directions two or more times (first column), followed by those that asked once and then those that never asked for assistance at all. Visitors who asked for directions were not always lost. In fact, a sizable number of guests that asked for directional assistance two or more times, 38%, felt that they did not become lost during their trip.

Among the group of individuals that never asked for help (third column), a combined 37% (32% + 5%) saw themselves as being lost one or more times but never asking for assistance. This data suggests that many guests either did not feel comfortable asking for directions (even though they were lost) or they could not find someone to ask. It also suggests they many people use Zoo staff as a legitimate wayfinding strategy to guide them in the right direction before they have lost their way.

**Using Pre-Planning as a Navigational Tool**

An advanced organizer is a tool that helps one chart a course before wayfinding begins. Here, the assumption was that if people spent more time preparing their path and strategy before embarking, they would find their way more easily and effectively.

Taking Figure 14 into consideration, there appeared to be relatively no difference between the group that spent more time planning versus the group that spent less time with regard to keeping them from losing their way.
Another assumption was that, when comparing how well visitors felt they found their way around the Zoo overall, it was thought that those who spent more time planning would be more likely to believe that they had navigated through the Zoo “very well” or “fairly well” while those who spent less time would indicate “not very well.” This was not the case, however, as the opposite appeared to true (Figure 15). Only a three percent difference separated the two groups with those spending less time actually being more successful with regard to their overall navigating ability (97%).

Summary of the effects of wayfinding tools and experience by group

In what seems to be counterintuitive results, we found that those who are less likely to rely on navigational tool are also less likely to feel as though they are lost. The assumption here is that those who frequently turn to their hand-held map and other tools are doing so because they are not sure of where they are or where they are going. This sense of being unsure about the present location or intended destination is likely what contributes to a sense of feeling lost. Referring to our own experiences, we use maps to plan our route and refer to them when we have lost our way, but maps and signs do not prevent people from getting lost. Wayfinding abilities vary from individual to individual.

Likewise, when referring to how one feels about the way they navigated through the Zoo, we found that people who were less likely to rely on navigational tools were more likely to feel as though they had done “very well.” We liken this to a student who is taking an open-book test. If they were able to confidently answer most of the questions without referring to their resources, then they would feel as though they had done very well on the test.

In a surprising finding, returning visitors were more likely to ask for directions once and almost twice as likely to ask for help two or more times than were first-time visitors. Pursuing this finding further, we found that, among all visitors, 38% of people who felt lost twice and 40% of those who felt lost once never asked for directions at all. This either suggests that many people are not comfortable asking for directions or there weren’t staff members around to ask when they needed help.

Taking additional time to plan their day when they first entered the Zoo did not seem to make much of a difference. In fact, the findings suggested the opposite of what we had expected. That is, those who spent more time planning were slightly more likely to feel lost and they were also more like to question the success of their navigating ability at the end of the day.
Part 3: Wayfinding Experiences and Visitor Contributions

Difficulty Locating Things at the Zoo

Almost three-quarters, 72%, of the survey respondents did not have trouble finding anything specific at the Zoo during their visit. We asked the 87 individuals (28%) that did have trouble to list the thing(s) that proved difficult to locate. It is very important to note that most of the comments did not even pass the threshold of representing one percent of the total survey population. According to the responses (Table 6), the hardest animal to find was the elephant (14), followed by the tiger (10), and then surprisingly penguins (7). It is important to note that the San Diego Zoo does not have any penguins, which demonstrates, in some cases, that the navigation system is not causally related.

Other than the animals, five of the survey respondents had trouble finding the restrooms. In regards to directions, one individual had trouble finding his/her “way out to Easy Street from the Panda Exhibit,” and one individual had trouble finding “down stairs from Easy Street to Park Way.”

Table 6: The hardest animals to find at the Zoo

<table>
<thead>
<tr>
<th>Animal</th>
<th>Number of individuals that had trouble finding the animal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elephants</td>
<td>14</td>
</tr>
<tr>
<td>Tigers</td>
<td>10</td>
</tr>
<tr>
<td>Penguins</td>
<td>7</td>
</tr>
<tr>
<td>Gorillas</td>
<td>6</td>
</tr>
<tr>
<td>Pandas</td>
<td>5</td>
</tr>
<tr>
<td>Giraffes</td>
<td>3</td>
</tr>
<tr>
<td>Rhinos</td>
<td>3</td>
</tr>
</tbody>
</table>

Given the quantity and types of animals that people had trouble finding, it seemed relevant to plot the physical location of these items on the Zoo map (See Figure 16). The large numbers on the Zoo map (next page) represent the number of different respondents that expressed difficulty in finding these creatures.
- Of the animals most often mentioned, tigers (10) and gorillas (6) represent 16 people who had lost their way in the Lost Forest zone.
- Several guests (5) stated that they could not find the panda bears, however, upon overhearing several conversations during the data collection period, it is unclear whether they could not find the exhibit or they simply could not find the pandas in the exhibit.
- The newest section of the Zoo, the Elephant Odyssey, registered 14 respondents who had trouble locating the exhibit.
- Lastly, six people could not find the giraffes (3) and rhinos (3) within the Urban Jungle exhibit zone.

Figure 16: Number of Individuals That Had Trouble Finding a Specific Animal Exhibit

Taking these wayfinding challenges into consideration, it may be helpful to consider the two most often cited animal zones in particular.

The Lost Jungle

The Lost Jungle appears to be the zone with the most densely packed foliage. Among the nine major trails listed on the map, five of these trails are found within the Lost Jungle. These trails are also among the longest and steepest throughout the entire Zoo. These factors are more likely to make finding animals a bit more of a challenge. An interesting note here is that among Zoo visitors who used trailhead signs frequently, 44% stated that they had never become lost as
compared to 55% of the entire subject pool. This may mean that those more adventurous visitors who navigated through the trails were also among the more experienced, making them less likely to lose their way.

**Elephant Odyssey**

Surprisingly, the Elephant Odyssey, the subject of a recent advertising campaign, was the animal zone that had the highest number (14) of visitors that could not locate it. One explanation offered by the evaluation team is that this exhibit is at the farthest Northern part of the Zoo. If visitors did not enter the exhibit via Front Street, they would not likely have seen the exhibit until several hours later via the escalator from the Asian Passage zone or from the terminal end of Park Way. If this is the case, then difficulty in finding the exhibit may better be explained as being among the last exhibits seen during their visit. This would likely not be presented as a problem unless one had expected to see the elephants and had been waiting all day to encounter them. Regarding the data, it is interesting to note that, of the 14 guests who had difficulty finding this exhibit, 11 of them, 79%, were either returning or regular visitors while only 3, 21%, were first-time visitors.

**Visitor Input Regarding the Hand-Held Map**

As mentioned earlier, the hand-held map was the most frequently used wayfinding tool among all groups. Of the 316 respondents, 58 Zoo visitors made comments about the map. In this section, we will first consider the replies that deal with changing the map followed by items that guests would like to see added to the map.

**Changes**

Of the 58 people that commented on the map, 22 of these comments dealt with items that already existed in some form but were either unclear or guests were unable to read them. The items are listed in Table 7. If more than one individual suggested the same (or similar) idea, the number of individuals that made this suggestion is included in the parenthesis next to the suggestion.

In terms of percentages, most comments do not even reach the threshold of representing one percent of the survey population. One that does, however, is the suggestion about making the map simpler, less cluttered, or easier to read. As mentioned in the literature review, these comments about striking the balance of providing enough information, yet keeping maps as simple as possible, echo the sentiments of Levine (1982). Another important item to note: four individuals suggested improving the bus stop icons and, in particular, the need to show them more clearly on the map.
Table 7: Changes to the existing hand-held map

<table>
<thead>
<tr>
<th>Clarity &amp; Quality</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Better quality</td>
<td></td>
</tr>
<tr>
<td>Less cluttered – make the map simpler (4)</td>
<td></td>
</tr>
<tr>
<td>More vibrant colors (2)</td>
<td></td>
</tr>
<tr>
<td>More subdued colors</td>
<td></td>
</tr>
<tr>
<td>Colors scheme is too similar; hard to distinguish</td>
<td></td>
</tr>
<tr>
<td>Trail routes in Lost Jungle</td>
<td></td>
</tr>
<tr>
<td>Bird icon blocks view of trails</td>
<td></td>
</tr>
<tr>
<td>Maps smelled bad (2)</td>
<td></td>
</tr>
<tr>
<td>Larger</td>
<td></td>
</tr>
<tr>
<td>Symbol for the moving walkway</td>
<td></td>
</tr>
<tr>
<td>Icon for family restroom/breast feeding area</td>
<td></td>
</tr>
<tr>
<td>Zone names more prevalent</td>
<td></td>
</tr>
<tr>
<td>Larger print on the map</td>
<td></td>
</tr>
<tr>
<td>Bus stop icons (4)</td>
<td></td>
</tr>
</tbody>
</table>

**Additions**

Many of the comments that Zoo visitors provided dealt with information that is not currently on the hand-held map. These comments typically centered upon the notion of enhancing the decision-making abilities of Zoo guests. Upon review, it seemed relevant to divide these into two topical areas. One of these areas was about providing more information about locations within the Zoo while the other dealt with helping visitors with decisions about directions and distance. These comments are listed in Table 8 (next page).
Table 8: Additions to the hand-held map

Informational

- More information about eateries
- Food available at each restaurant
- Show times listed on the maps
- Notes about exhibits that are empty or under repair
- Include all animals on the map
- More information about animals
- Bus routes that tours take
- Checklist for areas that you have already visited

Directional & distance-related

- Indicate uphill and downhill (2)
- Terrain elevation
- Shortcuts
- Walking time per each exhibit (2)
- Provide suggested routes to see certain animals (8)
- Compass arrow pointing North

What seems most interesting here is that people are seeking more information to help them make decisions throughout their visit. For instance, which eatery should I choose? What type of food do they have? Should I go down this trail? How much energy will it require? How far is it? What kinds of animals are down there? The questions are endless and, based upon many of the comments, guests are wanting to see information on the map to help them make those decisions.

A possible explanation here is that guests realize that they are not likely to encounter all that the Zoo has to offer in a single day. As a result, they are open to suggestions. The most prevalent response was the desire to see suggested routes in order to see specific groups of animals. This way, guests can have their journey mapped out for them. They know which way to go and what they will see along the way. This removes the need to make a choice at every intersection.

Visitor Input Regarding the Signage System

Survey respondents were also asked whether they had suggestions for changing the signs. Of the 309 people that responded to this question, 39 visitors, only 13%, selected “yes” and wrote
their comments for changing the signage system. This is a very small percentage of those wanting to see improvements in the signage as it represents approximately one-in-ten visitors. The vast majority of the comments were nonspecific, however, a few gave more detailed responses (Table 9). These comments have been divided up into two categories depending on whether the information provided was general or specific.

Based upon the specific comments, it appears that visitors struggled with where they were geographically located and finding their exact location on the map. For instance, if a guest stands in front of a numbered red location sign, then they can plot their exact location on the map. If they are not near a red location sign, however, they merely have to guess. This also means that they have to guess how far it is to next turn or the next trail. By adding more red location signs, signs that let them know they are entering a different zone, or seeing zone transitions on the ground, they will be able to more precisely plot their location on the map and gain comfort that they are not lost.

Table 9: Comments about the signage system

<table>
<thead>
<tr>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Need more signs (4)</td>
</tr>
<tr>
<td>• Arrows need to be more clear in the way they point (6)</td>
</tr>
<tr>
<td>• Signs need to be more specific</td>
</tr>
<tr>
<td>• Signs should be larger</td>
</tr>
<tr>
<td>• Less street names but more arrows</td>
</tr>
<tr>
<td>• Signs at every intersection</td>
</tr>
<tr>
<td>• More obvious locations for signs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Nursing (breast-feeding) room indicated</td>
</tr>
<tr>
<td>• Clearly identify entrance to all aviaries</td>
</tr>
<tr>
<td>• Exit sign on Park Lane near panda exhibit</td>
</tr>
<tr>
<td>• Monkey trail passes intersections; hard to follow</td>
</tr>
<tr>
<td>• Highlight passage from one zone to the next</td>
</tr>
<tr>
<td>• A red “you are here” sign in sight at all times (2)</td>
</tr>
<tr>
<td>• Color markings on the ground denoting zone borders</td>
</tr>
</tbody>
</table>
Recommendations

Both the qualitative and quantitative data have provided a wealth of information regarding the use of wayfinding tools and the perceptions of visitors regarding their wayfinding experiences. With this in mind, there are a few recommendations that the evaluation team has for the San Diego Zoo regarding their new wayfinding system:

Avoid signage pollution. The reality is that we cannot please everyone. There will always be someone pointing out that a new sign is needed here or there to make the Zoo a better place. In nearly all cases, the signs already exist and people simply do not see them or know how to use the signs appropriately. Questions like this will always arise - how many signs do we need within a 300 foot perimeter of a restroom to alert visitors that a restroom is nearby? The placement of signs is a balancing act between providing people with the information they need and allowing the beauty of the environment to show through. Great caution should be used when considering whether more signs should be added and the primary emphasis should rest on whether a sign might be moved to make it more visible to guests.

Consider transition zones in the form of floor directories. One of the key issues that people have is finding where they are on the map so that they can navigate from their current location to their desired destination. The Zoo has already accomplished this to a great extent with the color-coding system and the map location poles, however, there are additional ways to accomplish this apart from maps and signage. Floor directories appear on the ground and they can help link guest’s current physical location with where they are on the map. Just as there are often dotted lines on maps to delineate two distinct geographical features, color-coded lines can tastefully be painted on paths and main walkways to transition the visitor from one zone to another. This would provide dozens of additional “you are here” references for people without having to modify the map or adding new signage.

Educate visitors about the signage that exists. Similar to what was printed in the June 2009 edition of ZooNooz magazine, provide guests with a brief description of the various signs that exist throughout the facility. This would not only benefit first-time visitors but it would provide information to regular guests who are more likely to turn to the less popular navigational tools such as the trailhead signs and markers. The story about why the Zoo chose to adopt the National Park signage system is interesting and adds an element of adventure to the wayfinding experience, especially for those who are repeat guests. This information can be placed on one of the sixteen map panels (folds) under a heading of “how to get the most from your visit today” or something similar. The zoo might also consider placing an “exhibit” of the sign types near the entrance to familiarize guests with the system and orient them to the different purposes that each sign type serves.

Highlight new and advertised venues. The new Elephant Odyssey exhibit has been the topic of a recent advertising campaign and it is also the most frequently mentioned animal species that could not be found by Zoo visitors. This is probably not a coincidence as many people likely
expected to see these animals (since they had been hearing about the exhibit for several weeks). Whenever a new exhibit opens or there is a special event that has been advertised, consider providing additional temporary signage in the form of pole, bowhead, or teardrop banners, or highlighting it on the map.

**Provide several sample itineraries.** For many people, there are so many decisions to make in a day at the Zoo that they do not know where to begin. Taking into consideration different physical abilities (challenging, moderate activity, or leisurely) and animal zones, plot out two or three sample itineraries for each activity level. Show a path on a *mini-map* and list the types of animals they will see along the way. Take the opportunity to recommend an eatery and refreshment stops as well. These mini-map sample itineraries could release visitors from making so many decisions and simply allow them to embark on a predetermined path to see the types of animals that interest them most within the activity level that suits them best. Mini-maps can be highlighted in the main entrance (among other areas) and provided to guests at a specific location upon request.

**Continue to obtain input on the wayfinding system.** While there is only so much room on the map, consider reserving a small portion, perhaps one-third of one flap, to conduct a small survey about guests’ experiences that day. If the map is not perceived as a good tool for this type of overall guest impression, then perhaps a small insert could be placed inside the map. A few of the questions could relate to wayfinding tools and experiences. This would provide an ongoing influx of information that could eventually highlight trouble areas and provide insights for making changes to the maps and the signage. Direct guests who fill out the survey to drop it in a survey box at a specified easy-to-find location and offer the chance to enter a drawing in which one in every twenty people receive a small gift in the mail. This means that the guests would be required to leave a phone number and there willingness to share information could open the door for a more lengthy telephone interview about their experiences at the Zoo. Another suggestion would be to conduct focus groups or in-depth individual interviews to learn more about the wayfinding system (in particular, why is the Zone map the least used wayfinding tool or why was it hard to find the Elephant Odyssey?). There may also be a benefit in incorporating navigation as part of the regular market research conducted as exit interviews at the exit gate.
Conclusion

The fact that 95% of first-time visitors felt that they found their way around the Zoo “very well” or “fairly well” is astonishing and a testament to how well the wayfinding system is working. It appears that the greatest obstacle for visitor satisfaction in wayfinding may be the level of expectation that they have set for themselves in terms of what they hope to see or accomplish during their visit. If visitors have high expectations of their wayfinding ability in an unfamiliar environment, this can result in a greater dependence on wayfinding tools, resulting in a greater sense of disappointment due to visitors wanting to see more than time and the limitations of their bodies will allow, especially given the steep grades and challenging environment that visitors encounter.

The more that we encounter a physical environment, the more familiar we become with our surroundings and the less likely we are to rely on navigational tools. The first-time visitors relied heavily on the hand-held map, followed by the map location poles, as these are the tools that help them to find their way. Wayfinding through the Zoo is more of a learning process whereby visitors rely on tools and strategies as they increase their degree of familiarity. The key is to ensure that the map and the signage provide as much information as possible without resulting in environmental pollution such that signs are more visible than the beauty of the foliage and the animals that people have come to see.

One of the original assumptions of Zoo administrators was that the quality of an individual’s experience would be diminished if that person had their face buried in a map all day. Great lengths have been pursued to ensure that the hand-held map, the signage and the new color-coded zones direct people to the animals that they want to see. This provides visitors with the information that they need to begin their journey. At this point, however, it becomes their journey.

The expectations of Zoo guests will always play a role in their ultimate level of satisfaction. Attempting to see everything in a single day is a daunting task and it builds expectations that simply cannot be fulfilled. This is confirmed by Zoo members and frequent visitors who are encountering things on their tenth visit that they simply have never seen before. This is the reality of such a large and unique facility like the San Diego Zoo. Therefore, the theme surrounding the use of wayfinding tools is that they are merely the tools to guide guests along the path of their own personal journey. The Zoo would like to show visitors how to get the most from these tools so that their journey surpasses even their own expectations.
References


## Appendix 1: Evaluation Instrument

### Zoo Wayfinding Survey

1. Are you a member of the San Diego Zoo?
   - No
   - Yes

2. Which of the following statements best describes you?
   - This is my first visit
   - It's been a long time since my last visit
   - I visit often

3. How much time did you spend planning your day when you first entered the Zoo?
   - 0-5 minutes
   - 5-10 minutes
   - More than 10 minutes

4. How many times did you get lost today?
   - Never
   - Once
   - 2 or more times

5. Did you have trouble finding anything specific today?
   - No
   - Yes, I had trouble finding: ________________________________
     ____________________________________________________________
### Zoo Wayfinding Survey

6. **How often did you use the following tools to find your way around the Zoo today?**

<table>
<thead>
<tr>
<th>Tool</th>
<th>Never</th>
<th>A few times</th>
<th>Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand-held map</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>Map location poles</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Street signs</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Trailhead signs</td>
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<tr>
<td>Trailhead markers</td>
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<tr>
<td>Zone maps</td>
<td>☐</td>
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</tbody>
</table>
7. How often did you ask a Zoo employee for help to find something?
   - Never (if never, then skip to question 9)
   - Once
   - 2 or more times

8. Did the directions help you?
   - No
   - Somewhat
   - Yes, I found it easily

9. Is there anything you would like to see changed on the hand-held map to help you find your way around?
   - No
   - Yes, I would like the following items added or changed on the map:
     ________________________________________________________________

10. Is there anything you would like to see changed on the signs to help you find your way around?
    - No
    - Yes, I would like the following items added or changed on the signs:
      ________________________________________________________________

11. Overall, how well did you find your way around the Zoo today?
    - Not very well
    - Fairly well
    - Very well

Thank you for taking the time to fill out this survey today.