



WILLOWBROOK WILDLIFE CENTER MASTER PLAN

**February 18, 2011
FINAL REPORT**

Forest Preserve District of DuPage County
35580 Naperville Road
Wheaton, IL 60189

Willowbrook Wildlife Center
A facility of FPDDC
525 S. Park Boulevard
Glen Ellyn, IL 60137

Wight & Company



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ACKNOWLEDGEMENTS

This report, and its vision of the future for Willowbrook Wildlife Center, is the result of the initiative, support, effort and thoughtful consideration of many members of Willowbrook’s broad community.

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Mary Ellen Weller	Forest Preserve District of DuPage County
Sandy Fejt	Forest Preserve District of DuPage County
Jessica Ortega	Forest Preserve District of DuPage County
Andy Joseph	Wight & Company
Sarah Sutherlin	Wight & Company
Jason Dwyer	Wight & Company
Paul Bluestone	Bluestone Associates

SPECIAL CONTRIBUTORS

Certain individuals contributed planning ideas based on special knowledge of the mission and operations of the Willowbrook Wildlife Center:
Marcy Rogge for her historical knowledge of the Center’s operation
Jack MacRae for his insights into the visitor experience
Dr. Jen Nevis for her knowledge of proper animal-care facilities
WWC Staff in general for their willingness to accommodate the planning committee and answer occasional impromptu operational questions
The interested folks of DuPage County who took time to complete surveys and attend open houses to consider ideas and give opinions



This diagram illustrates the working relationship of the planning team that collaborated over a year’s time in 2010. As consultants to the planning committee, Wight & Company and Bluestone Associates wish to express their appreciation for the opportunity to assist in developing the plan.

INTRODUCTION

Willowbrook Wildlife Center

With few peers across the United States, the Willowbrook Wildlife Center has served the important community role of **native wildlife rehabilitation** for over 50 years. The 50-acre property is also a quiet nature preserve in the midst of the busy residential community of Glen Ellyn, Illinois, comprised of prairie, savanna, woodland and wetland environments.

Master Plan

This document contains the Master Plan for the development, over time, of the physical facilities at the **Willowbrook Wildlife Center**, a property of the Forest Preserve District of DuPage County in Illinois.



Development of the Plan was commissioned in 2009, with the belief that the facilities no longer properly serve the mission and goals of the Preserve, and that any improvements to be considered should be in accordance with an overall Master Plan for the property. Wight & Company was selected to conduct a planning process and provide consulting on planning and design.

The plan proposes improvements to animal care buildings, the visitor center, trails, the wetlands, stream and pond, and the exhibits that present and interpret living local fauna and other educational content. Acknowledging that the cost of implementing the proposed improvements exceeds available funding, a phased implementation is suggested, with budget recommendations for several phasing options.

Report

This document (Master Plan) compiles a broad array of material to inform the reader about the Plan, and is organized into sections covering **current conditions**, **goals** for the facilities plan, **the Plan** in various diagrammatic forms, its **sustainability** prospects and **budget** recommendations.

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Executive Summary

BACKGROUND

Since 1992, various studies have examined aspects of the facility's needs. The District's direction for the current planning process has been to incorporate all of the previous thinking, to consider all aspects of the preserve's mission and develop a comprehensive vision for all of the natural and man-made resources into one long-range plan. Some of the basic parameters that define the capacity levels of the Center follow:

Animal Care:

In addition to offering a quiet walk in nature and an opportunity to visit native wildlife close-up, Willowbrook provides care and treatment for increasing numbers of sick, injured and orphaned animals each year.

- 7,900 animals were admitted for care in 2009.
- up from 4,000 in 2005
- **8,000 admittances per year** is seen as a effective maximum in terms of staff capability, but the physical facilities do not allow that level to be managed effectively.

Visitorship: While it varies seasonally, during the daily 9-5 hours, one might find three or four bussed school groups in attendance, or possibly 100 people (parents with children) following a special nature program. In general, the overall facility should be designed to comfortably **accommodate 100 people at any given time**, with higher levels on occasion.

Goals and Objectives: Lengthy consideration has been given to the appropriate goals and objectives that the Plan is intended to serve. These are cataloged within this report, and embrace numerous initiatives stemming from the Mission of the District and of Willowbrook. They relate to *improving the facilities for animal care, preserving the unique qualities of today's Center, improving the educational experience for visitors, making the Center more sustainable by lowering environmental impacts, and addressing safety and efficiency of operations.*

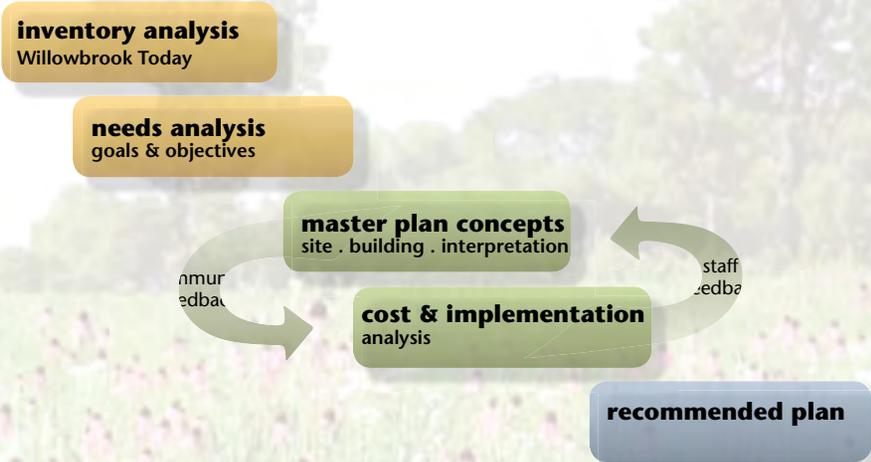


PROCESS

The planning process defined in concert with the District staff was meant to encourage input from each of the important centers of interest. Each of the following groups had opportunities to provide information, ideas and opinions that have guided the process and resulted in the Plan proposed here.

PLANNING PROCESS INPUT	
Willowbrook Wildlife Center staff	information on operational functions and work flow; information on animal exhibits and visitor programs; ideas and commentary about objectives and plan concepts
Staff Veterinarian	information on operational functions and work flow in the clinic and rehab center; ideas and commentary on plan concepts
District Land Management director & staff	information on operational functions and workflow
District Education director & staff	information on the visitor experience; information on educational programming needs
District Planning director & staff	information on the mission and operation of FPDDC as a whole; ideas and commentary about goals and plan concepts
District Natural Resources director & staff	information on existing natural resource management activities and the future restoration potential of the site
Interested public through open invitation	survey response on current-day usage of facilities and desires for future accommodations; open-house and write-in commentary on plan concepts
District Board of Commissioners	commentary on goals and objectives; commentary on plan concepts and phasing

The general flow of the planning process is represented in the diagram at right. Recommendations in the report are based on collecting information about existing conditions, thorough analysis and discussion of needs, an open development of concepts for improvement, analysis of costs and the impact of phasing the proposed work.





SYNOPSIS & RECOMMENDATION

As architects and planners engaged by the District, Wight & Company has been given adequate opportunity to study and understand the current buildings, grounds and operations of the Center. As detailed throughout this report, we believe that:

1. The **current facilities create restrictions** on the Center's ability to fully meet its mission.
2. Some **current facilities are substandard** in terms of operational efficiency, energy consumption & durability.
3. In addition to rectifying facility shortcomings, the **proposed improvements raise the level of quality** for experiences and services to the public.
4. In many ways, the **same investment** in upgrades that alleviates shortcomings also offers the **opportunity to raise those quality levels**.
5. Improvements proposed in this report will **extend the active lifespan** of the facilities 30 years or more.

This report outlines the findings and conclusions of the study, and proposes a development plan that can be implemented in parts or all at once. Highlights of the proposed Master Plan are described on the opposite page.

Improve, Expand, Enhance

West Section: Improvements proposed for the more active West Section (also where most of the current deficiencies exist) include: improvement and expansion of the existing building; demolition of the old wood-frame house currently used as offices; expanded visitor parking; and reconfiguration and replacement of the outdoor animal exhibits and trail.

East Section: Improvements to the East Section restore the wetland along Glen Crest Creek and create a few new exhibits that extend the visitor experience for those who would like to explore further.

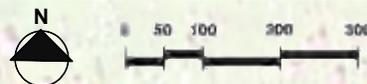
Throughout: A special stewardship over the rainwater and runoff generated by the site features rainwater reuse and a stream system to convey rainwater to the creek while educating visitors about the importance of that vital resource.

Phasing and Budget Recommendation

This report suggests a logical sequencing of the plan's distinct physical parts that addresses the most pressing needs at the first stage without hindering the possibility of further construction and enhancements later. In today's (2011) construction market, an initial phase that addresses the most pressing needs can be achieved at a cost of between \$10.5 and \$13.8 million. Many further project components are defined, bringing the total budget range recommendation to between \$16.9 and \$21.1 million.

Highlights of the Plan

- Expanded **parking**, with improved traffic flow and separation of delivery and access vehicles from visitors
- Separate pedestrian access trails extend to community **entry nodes**
- Expanded and upgraded Animal **Rehabilitation Clinic** building, reusing the existing building
- New **Visitor Center** addition housing educational areas and replacement staff offices
- Removal of obsolete wood-frame house (currently staff offices)
- Reconfiguration of outdoor **animal exhibits** and trails, extending some exhibits into the East Section
- New active creekside natural **play areas** and other trail enhancements
- Expanded **east trails** focused on quiet nature walks along several ecosystems



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SUMMARY OF EXISTING CONDITIONS

Willowbrook Wildlife Center's facilities have evolved since its inception. Starting with existing residential buildings on the site, numerous projects developed with great care over the years have contributed to the character and functionality that we see and experience today. For the visitor, the overall experience of Willowbrook has a unique feeling of being casual yet informative, caring and approachable, and unpretentiously natural. That feeling is one of the many things about Willowbrook valued by its community.

Functionally, after many years of adapting to facility limitations, the buildings and site improvements that make up the facilities pose numerous challenges to offering the highest caliber of service within the Center's mission. The clinic and rehab areas are deteriorating under the demands of a high-level animal care facility, demands that it is not designed to meet. The visitor center, though interesting and informative, falls short of the opportunity to make the knowledge and stories of DuPage wildlife alive and compelling to the community.

An important part of the planning effort is coming to understand the current facilities. Several activities were dedicated to developing that understanding, from the **functional** and **operational** to the **experiential**, and to the **physical** conditions imposed by the facilities today.

Research Activities:

Public Opinion Survey: Summarized on the following page.

Panel Discussions: Conducted at Willowbrook Wildlife Center in fall 2009 with a group of key Center staff and FPDDC planners and administrators. These discussions form the basis of the goals and objectives outlined later in the report. Meeting minutes from these discussions can be found in the Appendix of this document.

Existing Site Survey: A look at features of the overall site, such as utilities, topography, waterways, trail and pavement layouts, educational exhibits, etc. These findings are summarized on following pages.

Existing Building Survey: A look at aspects of individual occupied structures. The following pages (with supporting documents in the Appendix) offer these assessments, which are the background circumstances that inspire objectives for the Master Plan.

Public Opinion Survey

In September 2009, an online survey was introduced, and 160 responses were received. The survey results are in the Appendix for review. Respondents were asked to prioritize various visitor experiences, some of which exist today and some of which do not. A synopsis of survey results indicates that priorities were split on many subjects, but a few points generated high responses indicating a trend among existing visitors' opinions. Some highlights follow:

Important part of visitor experience:

- observing wildlife in naturalistic settings
- educational opportunities, including contact with naturalists, youth and adult programs, approachable information desk
- trails and resting spots along trails
- bicycle access to Willowbrook
- expanded space within the Center for visitors

Unimportant part of visitor experience:

- purchasing food and beverages
- renting meeting rooms
- water-related play area for kids

Visitor experiences with split opinions:

- creative play spaces
- added parking
- reference library
- gift shop

The survey allowed written comments from which the reader can gain a sense of what is really valued by the visiting public. Among those are: continuing to be a place to bring injured and abandoned animals; an opportunity to teach respect for living things; the natural trails, savanna and marsh; access to talk with naturalists about local wildlife.



Willowbrook Wildlife Center Master Planning Public Opinion Survey

The Forest Preserve District of DuPage County is embarking on a master planning process for Willowbrook Wildlife Center in Glen Ellyn, IL. The Forest Preserve District has operated Willowbrook as a wildlife rehabilitation and education center since 1956. In 1981 the Center's operations were expanded to include live animal exhibits to support the education mission of the Center. Over the past 28 years Willowbrook's programs and services have continued to grow in diversity and demand while the physical structures have remained basically unchanged.

The master planning process for Willowbrook will kick-off in the fall of 2009. We would like your input to help us prioritize the scope of visitor services and amenities for the site. Please take a few minutes to give us your thoughts.

Thank you for your time and input. [160 Total responses as of 2 Oct 2009](#)

- Please provide the zip code for your home address: Zip code: **50 unique zip codes**
- How many persons are in your household? **Average 3.45 persons**
- Please indicate the number of persons in your household in each age category:

31 Under 5	26 15 – 19 years	72 55 – 64 years
22 5 – 9 years	66 20 – 34 years	42 65 and over
27 10 – 14 years	149 35 – 54 years	
- Approximately how many times do you or a member of your family visit Willowbrook each year?

Warm Weather Months (Apr – Sep) 89 responses <input type="checkbox"/> 0 Times 8/9% <input type="checkbox"/> 1-3 Times 46/52% <input type="checkbox"/> 4-6 Times 14/16% <input type="checkbox"/> More than 6 times 21/23%	Cold Weather Months (Oct – Mar) 76 responses <input type="checkbox"/> 0 Times 16/21% <input type="checkbox"/> 1-3 Times 41/53% <input type="checkbox"/> 4-6 Times 7/9% <input type="checkbox"/> More than 6 times 12/17%
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- How many times have arrived at Willowbrook by car, and had difficulty finding a parking place?
77
- How did you first discover Willowbrook? [Comments on attached spreadsheet.](#)



EXISTING SITE SUMMARY

A thorough understanding of the natural and cultural features of Willowbrook Wildlife Center is essential to the development of the master plan. Through observation, research, and dialogue with staff, pertinent information was obtained and is summarized in the following series of diagrammatic maps. The diagrams communicate relationships between program elements and existing features. Understanding these relationships will help inform the process and strategies to meet programming requirements, outdoor space layout, vehicular and pedestrian circulation, and future needs of Willowbrook Wildlife Center.

**Willowbrook Today -
Overall Site Plan**





Willowbrook Throughout History

Aerial photographs to the right depict the development patterns of present-day Willowbrook Wildlife Center. Of particular interest is the earliest aerial photograph from 1939, which shows the property entirely under agricultural production with a small stream running through the site. This type of land use, especially during the early part of the century, was indicative of wetland or swampland having been drained for agricultural purposes. Over time the small stream was channelized and piped while the property quickly vegetated with canopy species, particularly fast-growing species that are mostly invasive and non-native.



1939



1974



1954



1967



1998

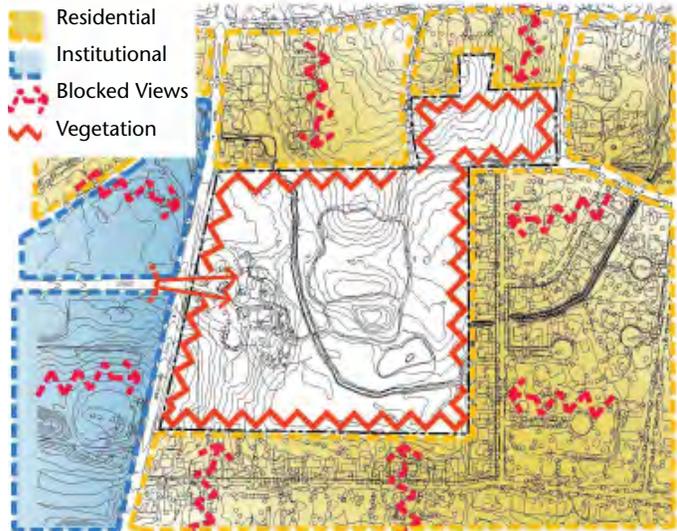


2006



Issues & Goals

Existing Site Analysis



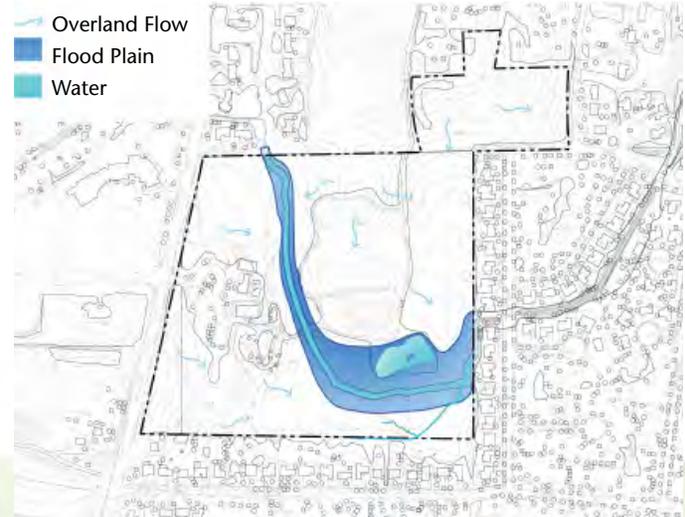
Adjacent land uses and views



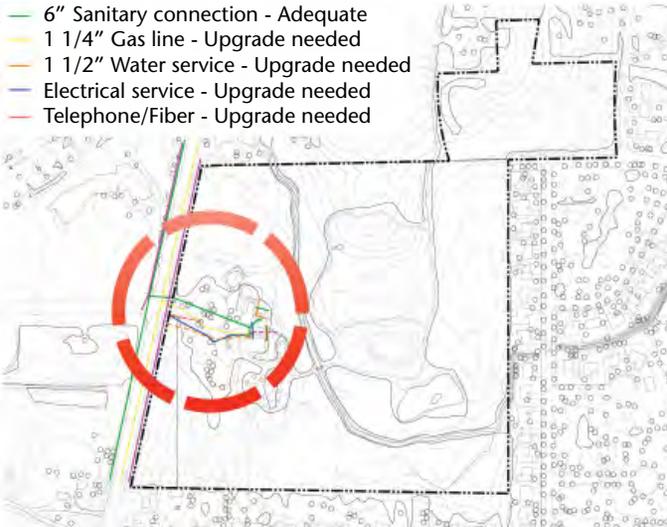
Vegetation



Topography



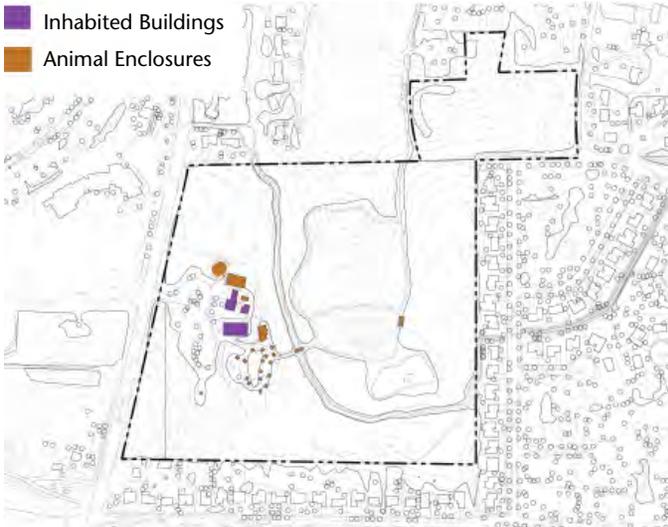
Surface Hydrology



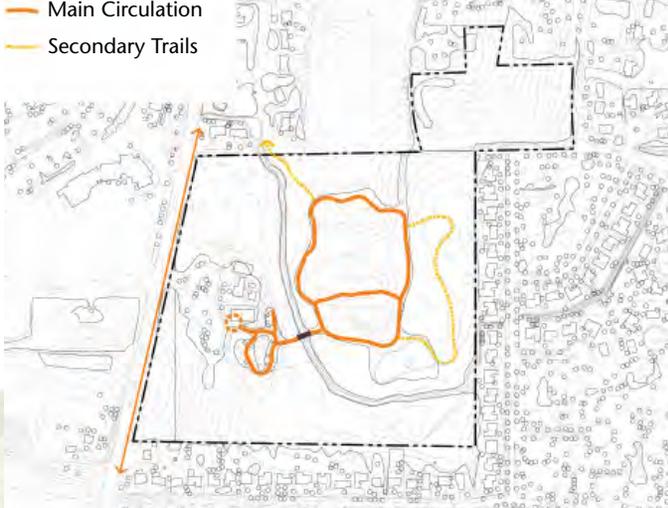
Utilities



Vehicular Site Access



Built Structures



Pedestrian Circulation



EXISTING BUILDINGS SUMMARY

Three primarily human-occupancy buildings have served the growing needs of Willowbrook Wildlife Center for many years, and today in 2011, their adequacy for the Center's purposes has greatly diminished.

These buildings include:

- Main Building (Clinic and Visitor Center)
built in 1981 (30 years old)
- Administration Building
built around 1940 as a residence (70+ years old)
- Rehab Support Building
built around 1980 (30+ years old)

Due to aging and degradation of structures and materials, more stringent modern energy and environmental requirements, and spatial sizes and configurations no longer sufficient for efficient operations, the buildings are no longer adequate for the safety and health of human and animal occupants or for modern expectations in communicating the Center's mission and educating the public of DuPage County.

The Appendix contains a detailed assessment report, some points of which are summarized here to illustrate the character and degree of the inadequacy of these structures.

Main Building (Clinic and Visitor Center), built in 1981 (30 years old)

This building was well-constructed in the early 1980s, and its basic structure and exterior envelope still appear completely sound. Though these components can continue to have a useful life and should be considered for sustainable reuse, most of the built environment fails to serve the needs of the Center properly.

Some Examples:

- Today's energy-efficiency standards and attention to carbon footprint suggest more advanced construction in terms of insulation, HVAC, etc. Exterior windows are less energy-efficient than today's standards and are reaching the end of their useful lifespan.
- The HVAC system was not designed for today's requirements for ventilation with fresh air. This need is especially important due to the presence of animals and the sanitation requirements of a medical facility.
- The interior construction of primarily standard painted drywall and metal studs is not adequately washable or moisture-resistant for a veterinary rehabilitation clinic. Coupled with the inadequate ventilation and humidity control, the potential for unhealthy environments around these materials is high. Interior ceilings and recessed lighting fixtures all show signs of moisture damage and age degradation.
- The size and functionality of individual rooms within the clinic and rehab areas no longer handle the number of occupants, animals, supplies, or activities that take place there today. In many ways, the functional layout creates chaotic circulation patterns and cross-traffic, which is not conducive to proper treatment of animals under stress or to efficient clinic operations.
- Staff areas used to support public interaction within the visitor area and animal-admissions area are cramped and inappropriate for today's increased workload. Objectives to further increase visitor access and capacity will severely over-tax these areas.





Issues & Goals

Administration Building, built around 1940 as a residence (70+ years old)

This building is a Cape-Cod style wood-frame residence. Architecturally, it is a common example of modest home construction of the time and is not of any historical significance. Today it serves as offices for the administrative staff of the Center. Built as a residence, the building is highly inappropriate both in the safety and energy-efficiency of its construction type, as well as in space provisions for its present use.

Some Examples:

- The wood-frame floor construction was designed before 1940 for the structural loads of a residential home. Building code requirements for office space today require higher load factors which likely cannot be met with this structure.
- The concrete-block foundation is cracked and leaking, allowing water to damage stored materials in the basement, and raising the potential for unhealthy environments throughout the building.
- The insulation rating of the exterior walls and roof are far below today's standards for energy-efficiency.
- Former bedrooms are very limiting with regard to furnishing and using as a modern collaborative office environment. Modifying this layout in a wood-frame building, while increasing the load capacity of the structure, is impractical.
- The residential furnace cannot supply the proper level of ventilation with fresh air that is required today for code-compliant office environments.
- The entry and layout of the building do not meet current ADA requirements.



Rehab Support Building, built around 1980 (30+ years old)

This building was originally built as a garage, then expanded and repurposed over time. Today it houses the rehabilitation nursery for birds, maintenance repair shop, cold storage, and mouse production room (for food products). It is a durable utility building, but not adequately ventilated for the animal functions now housed within.

Because of its sound construction, it could withstand remodeling and readily continue to provide space for utility functions of the center.

The Rehab Support Building is also commonly referred to as “the garage” and “the pole building”.



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MISSION

Behind the physical plan presented here is a deep set of convictions about how the public is best served by the Willowbrook Wildlife Center. This conviction has been evident in all the discussions with staff and administration that were part of the needs analysis phase of the planning process. During those discussions, constant reference was made to the mission of the center, and that of the broader Forest Preserve District of DuPage County. Because these Mission Statements form the backdrop for all the facility needs expressed, we refer to them at the beginning of this section of Goals and Objectives.

FPDDC Mission:



The mission of the Forest Preserve District of DuPage County is to acquire and hold lands containing forests, prairies, wetlands, and associated plant communities or lands capable of being restored to such natural conditions for the purpose of protecting and preserving the flora, fauna, and scenic beauty for the education, pleasure, and recreation of its citizens.

(from website 02/04/11, emphasis by Wight)

WWC Mission:



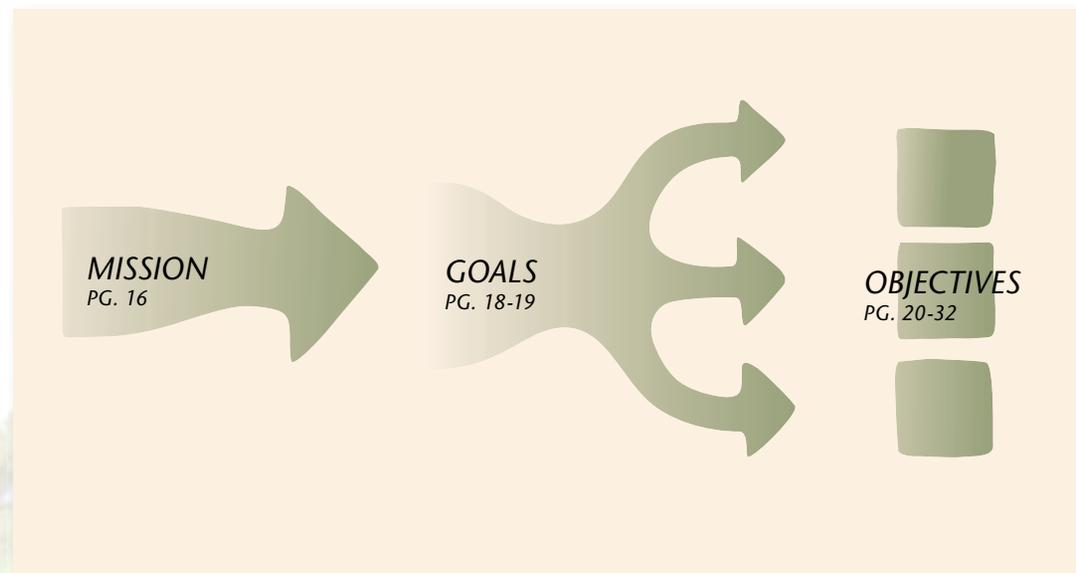
Willowbrook Wildlife Center is an education center and a wildlife rehabilitation facility operated by the Forest Preserve District of DuPage County. Our goal is to provide rehabilitation to native and passing migrant wildlife of DuPage County and education on the biological and ecosystems current and native to this area. We achieve these goals through our rehabilitation facilities and educational staff.

(from website 02/04/11)

During four different discussion sessions totaling over 12 hours, a wide-ranging array of aspirations were expressed by staff and administration about how and why the facilities could be improved. Some were specific, some were general, but all were important to understand, compare, organize, and then integrate and portray as a coherent set of parameters that the Master Plan would set out to meet.

We have chosen to portray these in the form of interconnected **Goals** and **Objectives** for the facilities. With common agreement on these statements, the planning process moves forward into generating potential ways to modify the facilities to meet the objectives.

If each **objective** is met in the Master Plan, then the **goals** for the facilities will also be met. As you will see, most objectives contribute to more than one goal. To track the interconnections between each objective and the goals, *watch the icons as you read*, that illustrate which goals are served by each objective.





GOALS



1: To improve facilities for the *rehabilitation* and *restoration* of animals and animal species

The Willowbrook Wildlife Center facility serves many functions, but its unique role is that of animal rehabilitation. The current space is inefficient and inadequate for the number of animals that are treated, around 8,000 yearly. The center participates in larger scale species recovery projects as well. These efforts should be showcased in tasteful ways so that the public understands the function of the center.



2: To *preserve* the Center's informal and intimate atmosphere while upgrading the facility

Both the Willowbrook staff and the general public value the informal and approachable atmosphere of the current Wildlife Center. During the master plan and facility design processes, it is important to maintain the elements that make Willowbrook special, such as the close interaction of staff and public and the intimate, friendly feel of the facilities and exhibits.



3: To improve the ability of the facilities to *educate* the public about native species, animal habitats, and the interconnectivity of natural systems

Willowbrook, as part of the FPDDC, serves to educate the public about important issues concerning nature. The exhibits are an important part of the Center and can educate the public about what an animal species' natural habitat is. Staff are passionate about the interconnectivity of natural systems - that people should not only preserve nature but are actually part of nature.



4: To make the facility more *sustainable*

Additions and renovations to the site and building should be built with the latest in green design and technology in mind. Since part of the FPDDC’s mission is to preserve and protect wildlife and the environment, the building should be a part of this effort. Through educational signage, the facility could also be an education model of green design for the community of DuPage County.



5: To improve *safety* and *efficiency* of the work environment for Willowbrook staff

In many operational areas, Willowbrook Wildlife Center staff is adapting to facilities not designed for their current use, which is detrimental to both efficiency and safety of the staff. A key goal of the master planning exercise is to look at strategies that could improve the quality of life for those who work at WWC.



OBJECTIVES

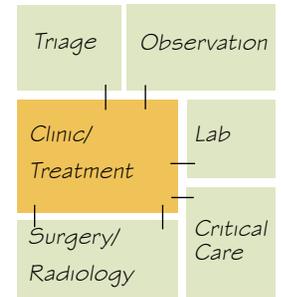
Different from the Goals on previous pages, the Objectives below are practical expressions of design and planning parameters. As noted before, if each objective is met, the goals for the facilities will also be met. To track the interconnections between each objective and the goals, *watch the icons as you read*, that illustrate which goals are served by each objective.

1. Create an efficient and sanitary clinic area within one suite



In order to more efficiently and effectively rehabilitate injured animals, the layout of the clinic/rehab area should be revised. The current layout is ill-suited for today's operation, which has changed and grown since the facility was originally built. Housing all clinic rooms within one suite would result in a more efficient and sanitary operation. This minimizes the amount of cross-traffic the veterinarian has to deal with, and keeps all supplies within a centralized location where they are needed. This suite would consist of a central clinic and smaller rooms including a triage transfer room, an observation/euthanasia room, a surgery room, and a lab all accessible from the clinic.

Refer to the Building Space Program in the appendix for more detail on space provisions needed for this objective.



2. Create an efficient and sanitary animal rehabilitation operation within sufficient space



The current food preparation and nursery areas for the long-term rehabilitation of animals brought in to the WWC are inadequate for their function. A larger kitchen is needed as well as additional refrigerator/freezer space. A walk-in unit would be ideal. Additional support areas need to be better organized as well. Charting is currently done in a congested hallway. The ICU currently houses all species; separating predator from prey species would be ideal. Locating animal carriers as well as the cleanup room near the back door would make transport of animals easier and faster for Willowbrook staff. The bird nursery is currently in a separate house and needs to be consolidated with the rest of the rehab areas.

Refer to the Building Space Program in the appendix for more detail on space provisions needed for this objective.

3. *Allow visitors glimpses of behind-the-scenes operations*



In order to better educate the public about the process of animal rehabilitation, WWC would like to provide visitors the opportunity to observe some behind-the-scenes operations of the facility. This would need to be done in a sensitive and tasteful way, so as not to disturb the animals in recovery. It could take the form of windows into clinic/rehab spaces, interpretive signage giving the public insight to the process and decisions involved in animal rehab, or video cameras mounted at strategic points to create an exhibit. The infant animal nursery, which houses baby animals, could be an opportunity to provide a view into this behind the scenes function.

4. *Provide space for and showcase the species recovery projects*



The species recovery programs are unique and important aspects of Willowbrook Wildlife Center. These are animal species recovery programs operated in conjunction with the office of Natural Resources. The species recovery area is currently housed in insufficient space in a nursery room. This program needs more space, possibly an area indoors and outdoors, but it must be isolated from the public. Educational or exhibit opportunities still exist however, to provide insight to this important program without subjecting the animals to noise and physical contact with humans.

Refer to the Building Space Program in the appendix for more detail on space provisions needed for this objective.

5. *Staff continue to share one parking area and entrance with the general public*



The staff entry is currently the same as the public entry, and parking is likewise shared. Willowbrook staff would like to continue sharing this sequence with visitors to provide opportunities for interaction of staff and the public and maintain an intimate feeling. The number of parking spots should be increased to accommodate visitors; however, the facility is able to utilize the ample parking of the church across the street when needed for special events.



Issues & Goals

6. *Provide the space for a less disruptive workspace while maintaining staff's interaction with visitors*



Staff members value interaction with the public, but a level of privacy is needed in order for the staff to effectively perform their duties. Front-desk staff currently must take calls, greet visitors, operate the cash register, as well as complete administrative office duties. A better layout that allows these staff members to complete some work while interacting with the public is key to the operational success of WWC. Adequate storage for supplies and a new location for the administrative center (mail, copier, fax, calendar, etc.) would offer these workers more space to perform their duties. The gift shop should be expanded, while remaining self-serve but supervised. Refer to the Building Space Program in the appendix for more detail on space provisions needed for this objective.

7. *Provide the tools for safety and maintenance of animal exhibits and nature trails while maintaining staff's interaction with visitors*



The staff also share the same pathways through the animal exhibits as the public. Once again, the friendly informal atmosphere is supported by this feature. However, safety issues must be addressed, such as the hoses that get strung across public pathways to tend to the animals. This intimate feel can be preserved while addressing these concerns. Another concern is the security of the animal exhibits on the back nature trails. Keeping the secondary entrances understated is a good compromise between being a publicly accessible facility and protecting the preserve.

8. *Find a balance between the natural and interpretive/educational experience*



Willowbrook Wildlife Center would like to provide immersions in natural areas as well as educational experiences utilizing technology and interpretation. It is preferred that more intensive interpretive or technological experiences should occur within the building, becoming less pronounced and more natural as one moves towards the outdoor animal exhibits. Any interpretation on the nature trails should be done in a delicate way to preserve the natural, undisturbed experience on the nature trails.

9. *Create more naturalistic animal habitats for permanent outdoor exhibits*



The Center has a need for animal habitats that promote animal health, keeper ease of maintenance, and visitor understanding and enjoyment. It is proposed that to do this would entail more naturalistic looking exhibits with natural features for the animals and visitors while still being easy to maintain. These more naturalistic cages would serve as an educational tool as visitors could observe the animals' natural behaviors. Natural behaviors would include hiding, and exhibits should provide ways for visitors to see into these hiding places. Exhibits should also provide for behavioral enrichment for the animals. This provides the animals choices of areas to go so that they do not become stagnant or self-destructive. Year-round moving water at each cage would also be a huge improvement in the quality of life for disabled animals permanently on exhibit. More natural landscaping within and around the cages should also hide the cages from each other. Animal exhibits would be improved by providing adequate buffering from each other by landscaping or distance to reduce stress on the animals.



Issues & Goals

10. *Expand indoor animal exhibits to accommodate different species and better educate the public*



Indoor exhibits could benefit by expanding to create a more enjoyable experience with greater opportunities for education and interpretation. This space should be able to accommodate a busload of children because school classes often take field trips to the WWC. This would mean almost doubling the existing space and planning for just as much space to serve the back-of-house functions. The indoor exhibit space could also better educate by integrating other functions throughout the space, including taxidermy exhibits as well as the “discovery” area for children. Additional animal exhibits considered for the future include more threatened or endangered species, migratory birds, seasonal insects, reptiles, amphibians and fish. Fly-around, walkthrough, and walkover exhibits would create more engaging interactive exhibits, while being sensitive to the needs of the disabled animals. The exhibits could educate about natural systems by being organized into ecosystems. These indoor exhibits as well should take on a more naturalistic feel.

The public’s interactions with keepers is also important for the indoor portion of the facility. Audio-Visual interpretation could be tastefully integrated. With interactive exhibits, the public could overhear conversations with WWC staff “ask the keeper,” see exams and nurseries, and watch animals that cannot be exposed to the public through “critter-cams.” Refer to the Building Space Program in the appendix for more detail on space provisions needed for this objective.

11. *Expand outdoor animal exhibits to accommodate different species and better educate the public*



Currently there are approximately 100 permanently disabled animals on exhibit, with 16 of them outdoors. This is a comfortable number and is not anticipated to change drastically. However, these 16 animals require more space to create better experiences for animals and visitors. To preserve the facility’s unique personality, these exhibits should promote wildlife in their natural habitats. Along the exhibit trails, nodes for pause for the public and classes would improve the experience. Additional animal exhibits considered for the future include coyote, river otter or mink (with underwater viewing), and more threatened or endangered species. Certain species must be moved indoors for the winter, and providing indoor/outdoor exhibits would allow for an easier transition.

12. *Create mixed-species animal exhibits*



Mixed species and community exhibits would reinforce messages important to the WWC and FPDDC about the interconnectivity of natural systems. There are opportunities for mixed species exhibits both indoors and on the outdoor trail. Outdoor exhibits could include a mixed-species waterfowl exhibit and a small mammal (moles and voles) exhibit. Indoor community exhibits could include snakes and frogs, songbirds and turtles, aquatic birds, and a nocturnal animal exhibit.

13. *Plan for educational spaces throughout for classes*



Willowbrook has naturalists on staff who regularly schedule classes or workshops with large groups of students. Outdoor classroom spaces could be dispersed throughout the site for this purpose and could be designed to serve multiple functions. Additionally, indoor classrooms are necessary for the programs that exist at WWC. A large space to accommodate 100 people, but divisible into smaller spaces would be ideal.

Refer to the Building Space Program in the appendix for more detail on space provisions needed for this objective.



Issues & Goals

14. *Implement educational interpretive signage throughout site*



WWC has many stories to tell, revolving around their animal rehabilitation and restoration efforts. Signage and exhibits should reinforce these ideas and interpret these key goals for visitor understanding. The following are staff responses to a survey conducted within the needs analysis process, concerning what they want to communicate to the public:

- These animals are in your backyard: they are local, native, DuPage County residents
- Visitors are part of this natural community
- Our impact on the landscape affects animal populations
- Tell the natural history of the animals and habitats
- Why these animals are at WWC - permanently disabled
- WWC's role in assisting DuPage County citizens with wildlife concerns
- Connect people to the forest preserves

15. *Create a more efficient and welcoming Visitor Center*



The Visitor Center should embody and illustrate the center's values and work. The current facility does little to welcome visitors, show them the purpose of the facility, or give them direction on where to go. A new or renovated center should be organized in a way to facilitate education and to provide clear choices of navigation paths through the facility. We believe that a more attractive and welcoming center would increase patronage and, therefore, the exposure of the general public to natural and educational experiences. The center should also be more apparent from the road to attract visitors.

Refer to the Building Space Program in the appendix for more detail on space provisions needed for this objective.

16. *Create a strong visual or spacial connection between the Visitor Center and the outdoors*



To create a connection between the visitor and nature, indoors and outdoors, the Visitor Center should be open and airy enough to provide visual and spatial connections to the outdoors. This would help tell the story of the interconnections of natural systems.

17. *Provide “naturescapes” on nature trails for children and adults alike to experience nature in a simple way*



To facilitate the interaction of visitors and nature, WWC would like to create small interventions on the site that provide opportunities for education. These outdoor natural “naturescapes” would be places of interest for visitors to play and learn. They would be dispersed throughout the site and could include a pier over a pond, a beaver lodge, etc.

18. *Use native plants throughout the exhibits and site*



District staff have begun extensive restoration of the site over the past decade or so, and one of the most successful outdoor spots utilizes only plants native to Illinois. Continued restoration of the site to a native-Illinois ecosystem would support both WWC and FPDDC’s mission statements.



Issues & Goals

19. *Provide a tiered system of trails throughout the site to accommodate wheelchair and maintenance vehicle access, and provide smaller natural trails through the different ecosystems as well for a nature immersion experience*



A system of ADA-accessible physical pathways must be provided. A three-tiered system of trails was discussed to provide accessible paths as well as less developed natural trails. The largest trails could be paved for maintenance vehicle access and maintenance of the trails. Secondary paths could be formalized, smaller, perhaps crushed limestone, and ADA-accessible as well. Tertiary paths could go down to narrow unmarked turf paths for an immersive nature experience. These smaller paths could also be used for programming.

20. *Achieve LEED certification for new facility*



To be in line with the greater mission of FPDDC, any renovations and improvements to the WCC site should be as environmentally friendly as possible. This means implementing as many “green” building techniques and technologies as is feasible. Additionally, they would like to achieve a LEED certification. In this way, the facility could be a statement of the FPDDC’s commitment to sustainability.

21. *Implement educational interpretive signage throughout the building and site showcasing sustainable techniques*



Through interpretive signage in and around the building highlighting sustainable features, there is an opportunity for the WWC facility to become an educational model of green design for the community of DuPage County.

22. *Accommodate alternative transportation and pedestrian entrance to the site*



Current vehicle entry to the site is off Park Boulevard at a traffic light. This provides a safe and convenient entrance, but pedestrian traffic is not accounted for. There is a need for a pedestrian-friendly entrance to the site to promote neighborhood citizens to walk, bike, or take public transit instead of driving to the facility.

23. *Clearly mark and separate the main entrance area and clinic admittance*



The main building entrance needs to be separated from clinic admittance so that people bringing injured animals do not cross paths with other visitors. Currently the clinic admittance is very easily missed because of inadequate signage and unclear circulation paths, creating unnecessary confusion at the front desk.

24. *Provide a uniform "welcome court" to handle groups of students and public*



A uniform welcome area to the site and building is needed to provide a place for regrouping and decision making. Because of the large amount of indoor space this would take up, the area could be an arrival court and partially outdoors or in a covered courtyard. This area could accommodate the casual visitor as well as busloads of children for programmed events.



Issues & Goals

25. *Provide clear options on where to go once on-site*



To give visitors choices, there should be alternative paths to take through the facility, whether to the animal exhibits, into the building, to a classroom, or to the nature trails. The staff at Willowbrook feel it is important to provide visitors options so that the experience can be created uniquely each time, rather than forcing a formal planned tour.

26. *Provide sufficient restrooms on the site*



There is a need for additional restrooms throughout the building and site. Bathrooms accessible from the outside would solve logistical and circulation problems. Remote restrooms on the nature trails could be implemented if designed to not use the public sewage system, which could also be a great sustainable feature. Inside the building, the staff need a separate staff restroom for when busloads of children are occupying the main restroom.

27. *Provide vehicle access to the 'back forty' for maintenance and snow plowing in winter*



The Center has a need for maintenance vehicle access to the back forty and exhibit area for maintenance and repair. Without the ability to access the trails, the Center is unable to plow snow, creating a safety hazard and extra manual labor for the staff to maintain these exhibits during winter.

28. *House all functions within one contiguous facility*



The arrival sequence for staff is currently not ideal, because there is no single point of entry as functions occur in multiple buildings. Since the facility is divided, extra traveling time between buildings is necessary. During the winter months this causes potentially dangerous transportation of animals and supplies between buildings. If all related functions were centralized with convenient adjacencies, efficiencies would improve.

Refer to the Building Space Program in the appendix for more detail on space provisions needed for this objective.

The table at the right summarizes this Building Space Program.

SUMMARY OF BUILDING SPACE NEEDS		
Function	Existing Sq. Ft.	Needed Sq. Ft.
Education	3,075	7,120
Clinic & Rehab	3,164	6,210
Staff & Administration	716	3,150
Operations & Flow	720	840
Total Building Net	7,675	17,320
Total Building Gross	9,210	21,650

29. *Create clearly separated circulation on the site for trash, drop-off, and maintenance*



Willowbrook has the need for a supply drop-off area / loading dock for semi-truck access, as food and medical supplies arrive by semi. They also require a staging area to process these deliveries and reduce the amount of manual labor required by staff. A staging area would be utilized for large shipments out of the facility as well. The current trash area is outside the entrance to one of the buildings, and better separation and organization of these back-of-house items would lead to a much more efficient process.



Issues & Goals

30. *Allow for a single secure point of entry to the Center while maintaining secondary unmarked entrances to nature trails*



There are currently small unmarked entrances to the 'back forty', but Willowbrook Wildlife Center staff would like to leave these entrances understated in order to preserve the quietness of the facility and allow for a controlled checkpoint / entrance. This leaves the option open if an entrance fee is charged in the future. If a fee were to be implemented, it would grant access to the building and animal trails. Nature trails could still be accessible to the general public free of charge. Many people like to use these trails as a walking path without entering the facility itself.

31. *Provide clear paths of travel around the site to accommodate visitors, maintenance, and staff*



Just as circulation within the building can better guide visitors, circulation on the whole site is analyzed to provide an enjoyable experience. This includes not only parking and car traffic, but pedestrian traffic and circulation through the animal exhibits and nature trails.

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MASTER SITE PLAN

The Willowbrook preserve is naturally divided into west and east sections by Glen Crest Creek. The development and use of the preserve has reflected this divide, with the west section containing Willowbrook Wildlife Center and most visitor activity, and the east section, or 'back forty', comprised of natural quiet trails along woods, savanna and stream. This plan respects the importance of maintaining a quiet 'back forty', with a few new experiences created along the way. The highly active visitor areas remain on the west, extending gently over the creek to encourage exploration.

The Master Site Plan (at right) represents a final configuration, the end stage of phased improvements that fulfill the **goals and objectives** of the master plan in the following ways:

Goal 1: *Improve facilities for rehabilitation and restoration of animal life*

complete remodeling of the existing Center building, expanding and modernizing the clinic within, and consolidating and expanding the rehabilitation areas... expanding the current support building for better support functions, with focus space for species restoration... new, more natural habitats for outdoor animal exhibits

Goal 2: *Preserve the informal and intimate atmosphere*

a design intention to build the Plan with attention to the details that will maintain a sense of local flavor and the treasured informality that has developed over time

Goal 3: *Improve nature education facilities*

entirely new Visitor Center with access to interpreters, indoor exhibit areas, multipurpose learning lab, viewpoints into clinic operations... outdoor exhibit area with new naturalistic mammal and bird habitats, a stream system conveying rainwater, nature play areas, a skywalk platform in the tree canopy, outdoor classroom spaces

Goal 4: *Sustainable facilities*

re-use of all viable built structures... special stewardship over the site runoff, with rainwater collection and reuse and raingardens for infiltration... energy improvements to the existing Center building... vegetated roofs to save energy and purify rainwater... permeable pavers in the new parking area... buildings with well-ventilated and daylit environments

Goal 5: *Safe and efficient work environments*

demolition of the wood-frame house that inadequately accommodates staff offices... new, organized, accessible and centralized staff offices within the Center addition... expanded and reorganized support facilities in the rehabilitation area... wholly modernized clinic for safe, sanitary and efficient operations

Master Site Plan - Overall





Master Plan

EXAMPLES of SIMILAR CONCEPTS



"Bird Nest"



Creek Walk



Animal Exhibit



Tree House



Outdoor Play Area



Native Landscaping



Education Deck

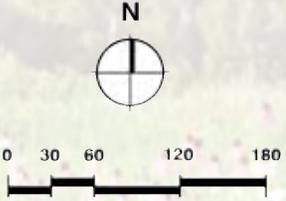
Highlights of the Plan

- Reuse of existing main building for **Rehabilitation Clinic**, with upgrades and exterior improvements such as a **living wall** feature
- New **Visitor Center** addition housing educational areas and indoor animal exhibits, as well as staff offices to replace the wood-frame house
- **Expanded parking** for additional visitor capacity and improved traffic flow, with **permeable pavers** for rainwater infiltration
- Upgrades and a small addition to the existing **service building** to provide loading dock and large volume food and supplies storage.
- Reconfiguration and development of outdoor naturalistic **animal exhibits**, with **educational decks** for instruction and a **skywalk** platform and **tree house** in the tree canopy for observation
- New active creekside natural **outdoor play areas** and other trail enhancements
- Continued ecological restoration and **native landscaping** for a sustainable ecosystem
- Special stewardship over the runoff generated by the site, with **cisterns** for rainwater collection and reuse, **rain gardens** for infiltration and a stream system to convey rainwater to the creek

Master Site Plan - West



- Legend**
- Forest Preserve Boundary
 - Asphalt
 - Permeable Paving
 - Existing Trails to Remain
 - Proposed Trails
 - Proposed New Structures
 - Existing Structures
 - Rehabilitation Enclosures and Structures
 - Bridges and Boardwalks
 - Decks and Visitor Nodes





Master Plan

EXAMPLES of SIMILAR CONCEPTS



Enhanced Crane Exhibit



Pond Enhancements



Overlook



Boardwalk

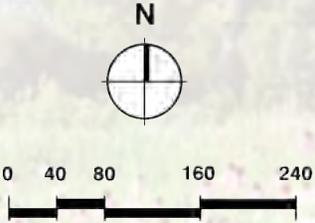
Highlights of the Plan

- **Pond and stream enhancements** to restore the riparian area and restore functional hydrology along Glen Crest Creek
- Interactive interpretive areas such as a **limestone rock jump**, **creek walk** and **pond node** along the creek and pond to offer a natural educational experience and encourage exploration
- A new **boardwalk** system along the creek and wetland area with **overlooks** and stream crossings for education and interpretation
- New exhibits to extend the visitor experience into the east section, including a new naturalistic **mammal enclosure** and the enhancement of an existing **crane habitat**
- Expanded **nature trails**, focused on quiet walks along several ecosystems, acknowledging existing site features such as a large **cottonwood** tree
- Restoration of the many different **ecosystems** on site (refer to the Ecosystem Restoration Plan on page 40)

Master Site Plan - East



- Legend**
- Forest Preserve Boundary
 - Existing Trails to Remain
 - Proposed Trails
 - Rehabilitation Enclosures and Structures
 - Bridges and Boardwalks
 - Decks and Visitor Nodes





Master Plan

EXAMPLES of SIMILAR CONCEPTS



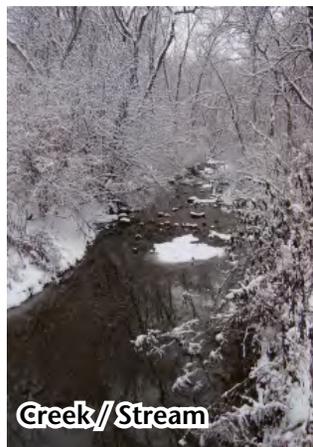
Savanna / Woodland



Shrub Prairie



Prairie / Wet Prairie



Creek / Stream



Wetland / Pond



Floodplain Forest

Highlights of the Plan

The ecosystem restoration plan was created with the understanding that many visitors to the Willowbrook Wildlife Center may never have the opportunity to visit other forest preserves and participate in the many rewarding experiences available to them. Therefore, the plan illustrates a method to transform the preserve into a **showcase of other natural areas** that exist throughout DuPage County by maximizing plant and animal diversity and creating sustainable open space.

The plan was developed by studying existing soil and hydrological conditions to create recommendations of how to **restore** these areas to a quality similar to their pre-settlement conditions. The connection between the habitats created there to the animals and exhibits on display could be further highlighted through interpretive programs.

Ecosystem Restoration Plan



BUILT ELEMENTS

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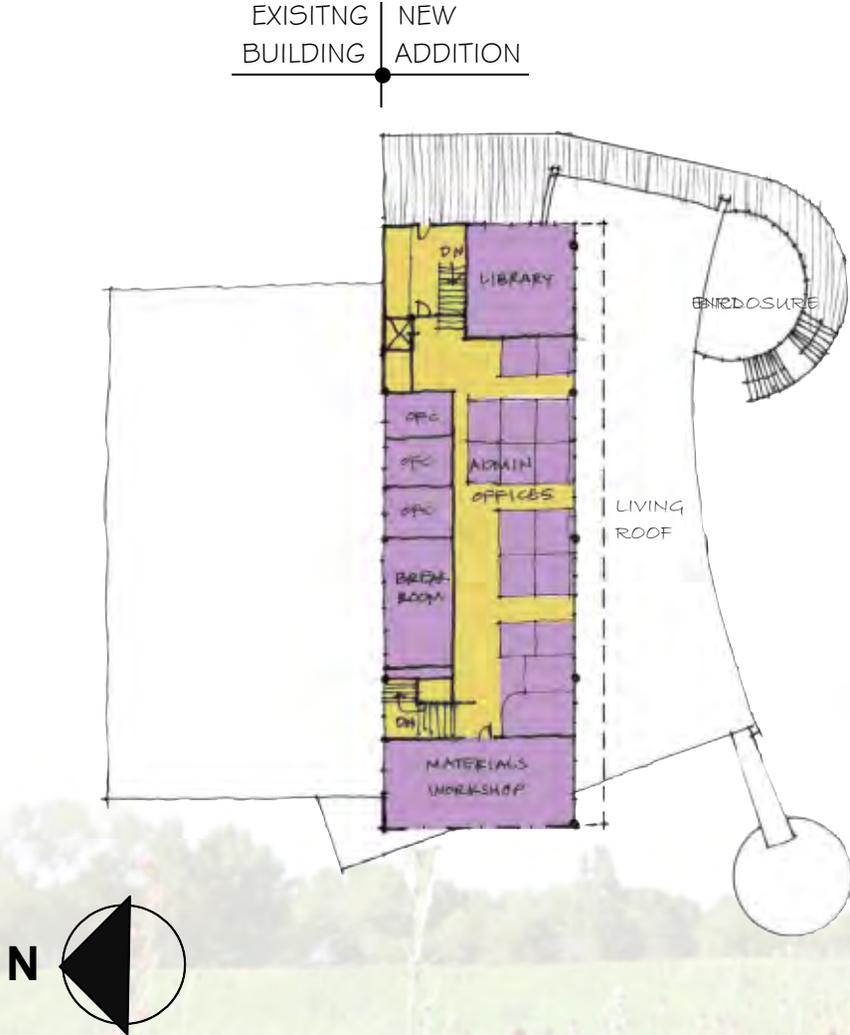
CONCEPTUAL BUILDING PLANS

First Floor Plan

The following conceptual floor plans, in conjunction with the building space needs summary to the right, illustrate the proposed improvements to and expansion of existing built elements at Willowbrook Wildlife Center. These enhancements will result in an improved work environment and visitor experience for all.



Second Floor Plan



SUMMARY OF BUILDING SPACE NEEDS			
Key	Function	Existing Sq. Ft.	Proposed Sq. Ft.
	Education	3,075	7,120
	Clinic & Rehab	3,164	6,210
	Staff & Administration	716	3,150
	Operations	720	840
	Total Building Net	7,675	17,320
	Total Building Gross	9,210	21,650

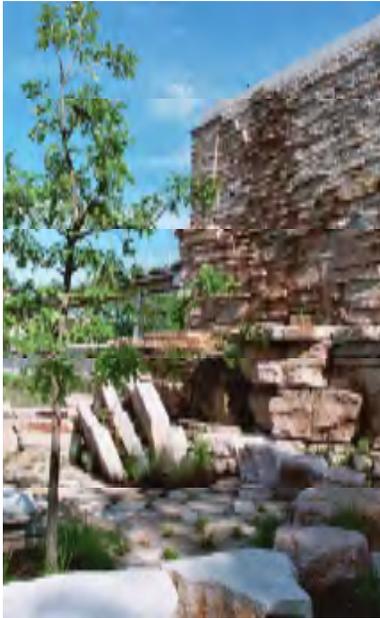
Summary of Proposed Improvements

The proposed building expansion provides sufficient space for the existing capacity and functions of the center. This is achieved by renovating the main building into a highly efficient animal-care facility with improved workflow and amenities to support the center’s 8,000 animal admittances per year. A two-story building addition to the south will house a new Visitor Center with expanded indoor animal exhibits and educational space on the first floor, and staff and administrative office functions on the second level. With administrative office functions relocated to appropriate office space, the aging residence currently used as an administration building may be demolished. Furthermore, a small addition to the current rehab support building will include a loading dock and large-volume freezing/refrigeration for delivery and storage of food and supplies.



ARCHITECTURAL FORM

EXAMPLES of SIMILAR CONCEPTS



Bird Enclosure



Rainwater Collection

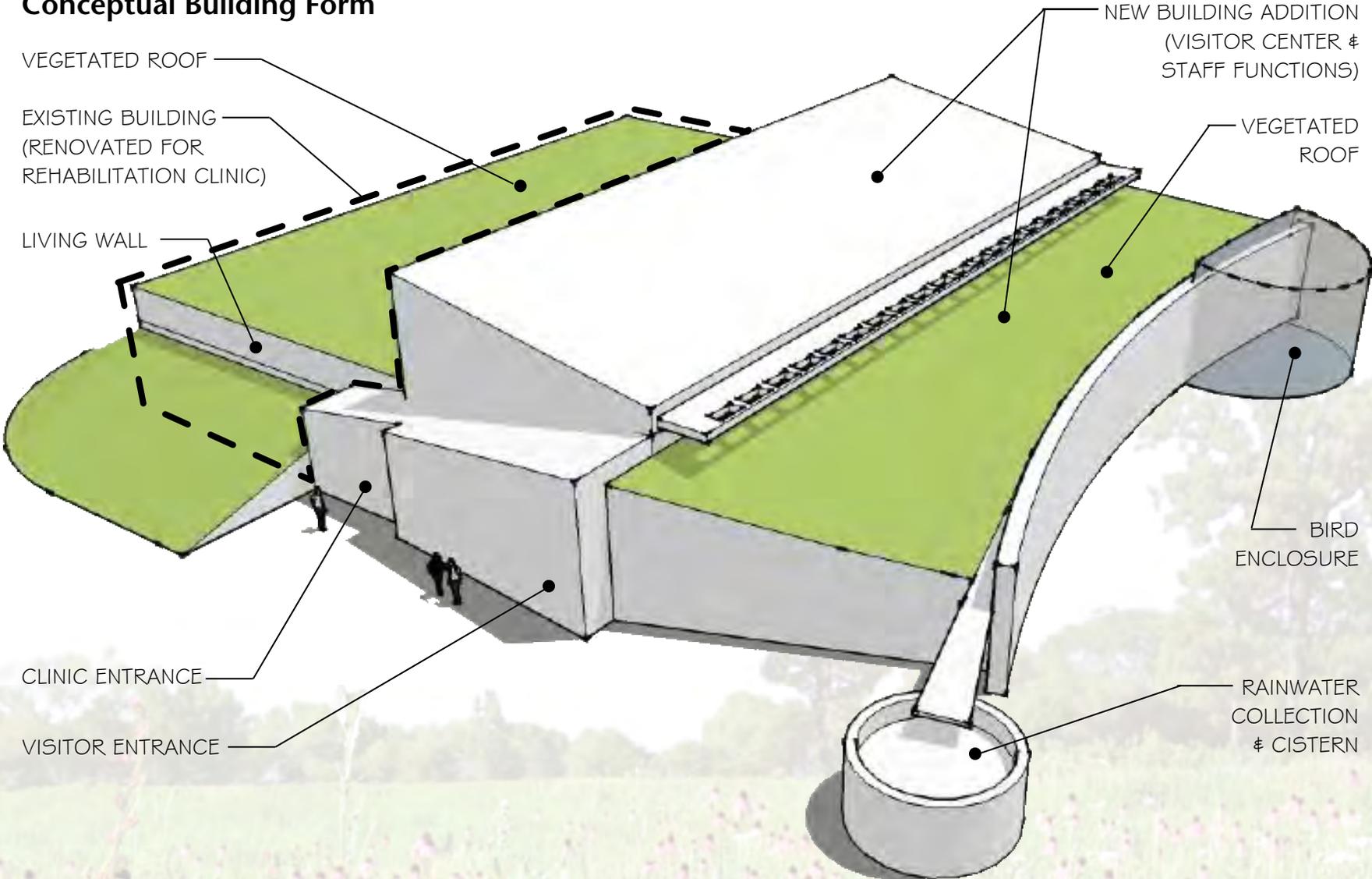


Cistern

Architectural Highlights

- **Renovation and reuse of the existing building** for an expanded and modernized rehabilitation clinic
- **New building addition** for Visitor Center and staff functions
- **Separate clinic entrance** and main **visitor entrance** so that injured animals do not cross paths with the public
- **Vegetated roofs** on both the existing building roof and new building addition, with access from the second-floor staff / administrative offices to save energy and purify rainwater
- **Living wall** feature on the existing building
- **Rainwater collection and cistern** to reuse rainwater on site and return it to the natural system; also creates an architectural feature and entrance / gateway to the animal exhibits
- **Bird enclosure** to create an indoor/outdoor bird habitat, viewable from inside the visitor center, outside on an education deck, and from a unique skywalk platform

Conceptual Building Form



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INTERPRETATION

Interpretive planning work began with a series of workshops with the staff members at WWC and FPDDC to better understand the missions of both entities, to hear about perceived strengths and weaknesses in communicating those missions to the public, and to begin to ferret out some solutions. What emerged from these workshops is a set of overarching messages that the staff felt were important for WWC to be sending to its public through new exhibits and interpretive signage as well as thoughts on the nature, or personality of the experience that visitors ought to be encountering in a new facility. These can be summarized as follows:

Overarching Themes

Natural History and Interconnectedness in Nature

- These animals are in your own backyard: local, native, DuPage County animals
- You, as a visitor, are a part of this natural community
- How human impact on the landscape affects animal populations
- Tell the natural history of these animals and their habitats
- Showcase natural ecosystems that exist throughout DuPage County and are restored at WWC

WWC's Role

- What is the WWC's role in assisting DuPage County residents with wildlife concerns
- Recommendations on how visitors can and should interact with these animals
- Why these animals are here at the WWC

FPDDC

- Connect visitors to their forest preserves

Personality

It was felt that the intimate, informal and approachable nature of the WWC was a strong point and ought to be maintained in any new visitor experiences that are developed.

Storytelling

The Interpretive Master Plan delineates the most important messages to be delivered to visitors, how those messages could best be delivered through specific stories, which animals could play a part in telling these stories, where on the grounds would be best to tell the stories, and what storytelling tools could be used. The goal of these stories is to make it easier for WWC staff to serve the public and the animals they care for and to help visitors better understand the role of WWC and appreciate the wild animals that have come to be in their care.

Storytelling tools will cover a broad spectrum, including:

- Introductory exhibit at the building entry to orient visitors to the role/goals of the Center and how those can be experienced.
- Exhibits about the role of WWC as a hospital and rehabilitation facility which explain the what, why and how of their work.
- Introductory and orientation wayfinding signage at the entrance to the main building and at critical junctions on the trail system, letting visitors know where they are on the site, how to get where they want to go and what features are nearby.
- See-through exhibit into back-of-house area allowing visitors a firsthand view of the hospital and nursery functions.
- Interpretive signage along trails and at animal enclosures telling stories about the natural habitats and their wild inhabitants.
- Naturally landscaped animal exhibits on outdoor trails featuring individual species, offering more visual interest for the visitors and a richer experience for the animals.
- Indoor and outdoor mixed-species exhibits focusing on interrelationships of the members of a natural community.
- Large-scale outdoor interactive exhibits for experimentation with track-making, nest-building, climbing, camouflage etc.
- A large-scale indoor/outdoor exhibit on shorebirds and aquatic amphibians which can be viewed from inside the building as well as from nature trails
- Immersive animal exhibits inside the building featuring exhibits which can be viewed from different vantage points, including over- and underwater.
- Indoor interactive exhibits focusing on the scents and sounds used by wild animals for communicating in nature.
- Touchable exhibits about animal skeletons, tracks and scat which enhance visitors' understanding of animals' lives in the wild.

Goals

The goal of this work is to create the best and most memorable experience for the visitors and animals at Willowbrook Wildlife Center. This experience should enlighten visitors about the intent and work of WWC and educate visitors to gain a better understanding and appreciation of the animals in their care and the relationship of the visitors to these animals.



Master Plan

EXAMPLES of SIMILAR CONCEPTS



Visitor Center Exhibit



Interpretive Signage



Interpretive Signage



Visitor Center Exhibit

Highlights of the Plan

Indoor Exhibits

- Behind-the-scenes views
- Reintroduction efforts
- Interactions with keepers
- Mixed-species exhibits
- More immersive, natural-looking exhibits

Animal Exhibits and Nature Trails

For the Animals

- More space for animals
- Improved behavioral enrichment
- More opportunities for animals to hide
- Year-round moving water in animal enclosures
- More community or mixed species exhibits

For the Visitors

- Visitors can observe natural behaviors
- More ways for visitors to see into exhibits
- Habitats should be more natural-looking
- Landscaping in and between enclosures hides the enclosures from each other
- A few more animal exhibits interspersed along the east nature trails
- Create adult and child interactives along nature trails
- Provide the opportunity to explore and learn about many different restored ecosystems.

Interpretive Master Plan



- 1 INTRODUCTION TO EXHIBITS**
 What is WWC?
 Visitors are part of natural community
 Connect visitors to FPDDC
- 2 NATIVE LIVE ANIMAL AND HABITAT EXHIBITS**
 Animals in Your Backyard
 Natural history of animals/habitats
 WWC's role assisting residents with wildlife concerns
 How visitors should interact with wild animals
- 3 WWC AS REHABILITATION FACILITY**
 Exhibits and views into kitchen and nursery
 WWC as wildlife hospital
 Explanation of rehabilitation process
 Reintroduction efforts
- 4 NATURE TRAILS**
 Interpretive Signage
 Habitat/Animal Interconnections
 History of Land at WWC
 Habitat & Ecology Restoration
 Meditative Overlooks/Cul-de-sac
- 5 OUTDOOR PLAY AREA**
 Large Motor Skill Interactives
 Think Like an Animal
 You Are Part of Nature

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SUSTAINABLE GOALS



To make the facility more *sustainable*

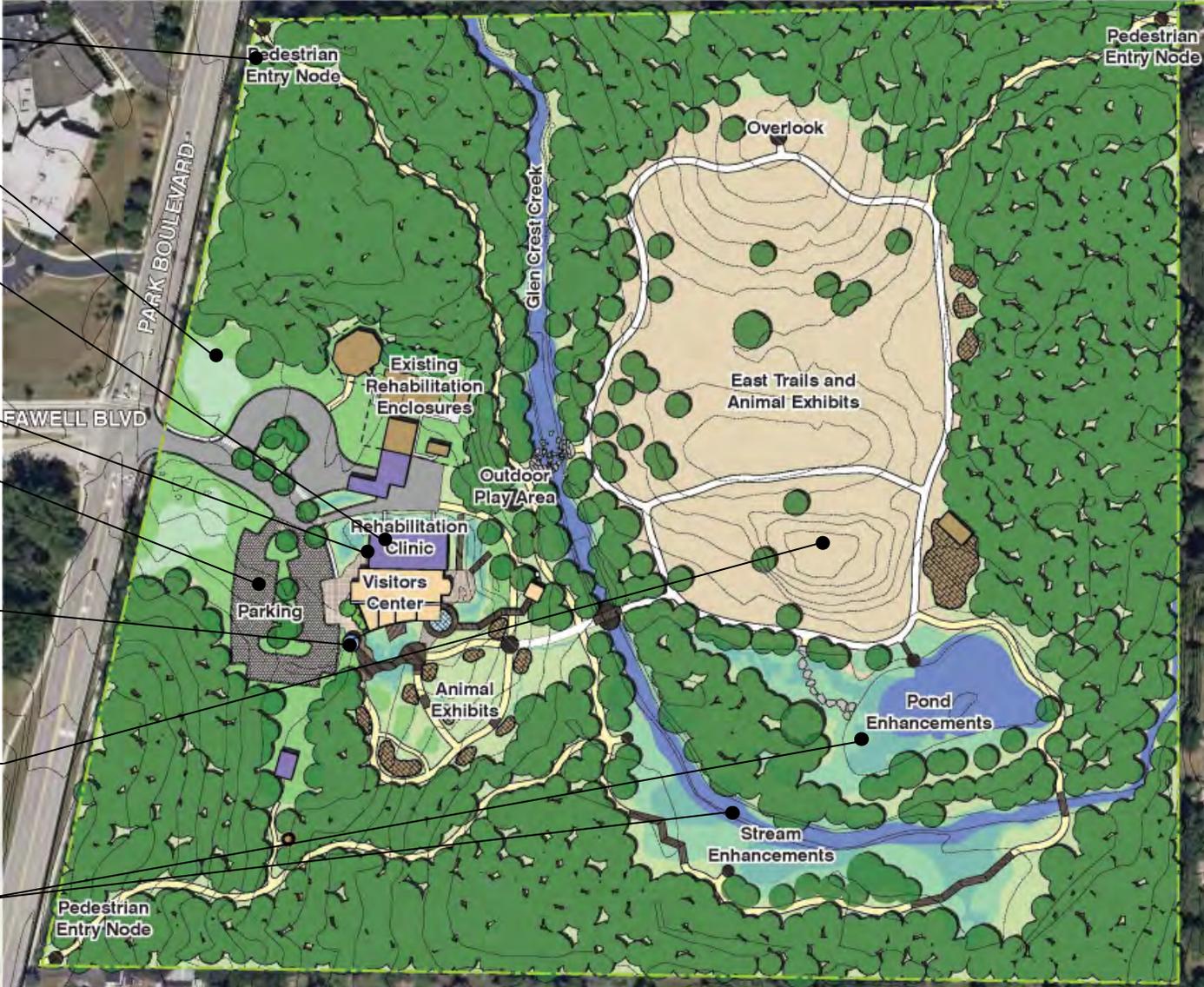
Additions and renovations to the site and building should be built with the latest in green design and technology in mind. Since part of the FPDDC's mission is to preserve and protect wildlife and the environment, the building should be a part of this effort. Through educational signage, the facility could also be an educational model of green design for the community of DuPage County.

Leadership in Energy and Environmental Design

In accordance with one of the major goals uncovered during the planning process, building additions and site work are targeted to achieve LEED silver under the LEED 2009 rating system. The sample LEED checklist on the back of the following page illustrates areas where points are expected to be achieved.

GREEN FEATURES OF THE MASTER PLAN

- ALTERNATIVE TRANSPORTATION entrances
- RAIN GARDENS for infiltration of runoff generated onsite
- VEGETATED ROOF for energy savings and water purification
- LIVING WALL
- PARKING WITH PERMEABLE PAVERS for rainwater infiltration
- RAINWATER COLLECTION & CISTERN for reuse onsite
- NATIVE HABITAT & ECOSYSTEM RESTORATION projects
- STREAM & POND ENHANCEMENTS for wetland restoration





Master Plan

Sample LEED Checklist

LEED 2009 for New Construction and Major Renovations			Project Checklist			Willowbrook Wildlife Center		
						Dec., 2010		
9 Sustainable Sites Possible Points: 26			Materials and Resources, Continued					
Y	?	N	Prereq 1	Construction Activity Pollution Prevention		Y	?	N
Y			Credit 1	Site Selection	1	1		
			Credit 2	Development Density and Community Connectivity	5	1		
			Credit 3	Brownfield Redevelopment	1	1		
			Credit 4.1	Alternative Transportation—Public Transportation Access	6	1		
1			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1			
?			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3			
1			Credit 4.4	Alternative Transportation—Parking Capacity	2			
1			Credit 5.1	Site Development—Protect or Restore Habitat	1			
1			Credit 5.2	Site Development—Maximize Open Space	1			
1			Credit 6.1	Stormwater Design—Quantity Control	1			
1			Credit 6.2	Stormwater Design—Quality Control	1			
1			Credit 7.1	Heat Island Effect—Non-roof	1			
1			Credit 7.2	Heat Island Effect—Roof	1			
1			Credit 8	Light Pollution Reduction	1			
6 Water Efficiency Possible Points: 10			15 Indoor Environmental Quality Possible Points: 15					
Y			Prereq 1	Water Use Reduction—20% Reduction		Y		
2			Credit 1	Water Efficient Landscaping	2 to 4	1		
2			Credit 2	Innovative Wastewater Technologies	2	1		
2			Credit 3	Water Use Reduction	2 to 4	1		
12 Energy and Atmosphere Possible Points: 35			15 Indoor Environmental Quality, Continued					
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems		1		
Y			Prereq 2	Minimum Energy Performance		1		
Y			Prereq 3	Fundamental Refrigerant Management		1		
5	?		Credit 1	Optimize Energy Performance	1 to 19	1		
			Credit 2	On-Site Renewable Energy	1 to 7	1		
2			Credit 3	Enhanced Commissioning	2	1		
2			Credit 4	Enhanced Refrigerant Management	2	1		
3			Credit 5	Measurement and Verification	3	1		
?			Credit 6	Green Power	2	1		
10 Materials and Resources Possible Points: 14			6 Innovation and Design Process Possible Points: 6					
Y			Prereq 1	Storage and Collection of Recyclables		?		
2			Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3	?		
			Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1	?		
2			Credit 2	Construction Waste Management	1 to 2	?		
2			Credit 3	Materials Reuse	1 to 2	?		
52 Total Possible Points: 110			4 Regional Priority Credits Possible Points: 4					
			Credit 1.1	Regional Priority: Specific Credit	1	?		
			Credit 1.2	Regional Priority: Specific Credit	1	?		
			Credit 1.3	Regional Priority: Specific Credit	1	?		
			Credit 1.4	Regional Priority: Specific Credit	1	?		

Certified: 40 to 49 points Silver: 50 to 59 points Gold: 60 to 79 points Platinum: 80 to 110

IMPLEMENTATION

Executive Summary

Introduction:

acknowledgements
introduction

Summary:

background
process
synopsis & recommendation

Issues & Goals

Willowbrook today:

summary of existing conditions
existing site summary
existing buildings summary

Goals & objectives:

mission statements
planning goals
plan objectives

Master Plan

Overall concept:

master site plan - overall
site plan - west
site plan - east

Built elements:

conceptual building plans
architectural form

Interpretation:

contributed by Bluestone+Associates

Sustainability:

sustainable goals
green features of the master plan

Implementation:

project components
costs

Appendix

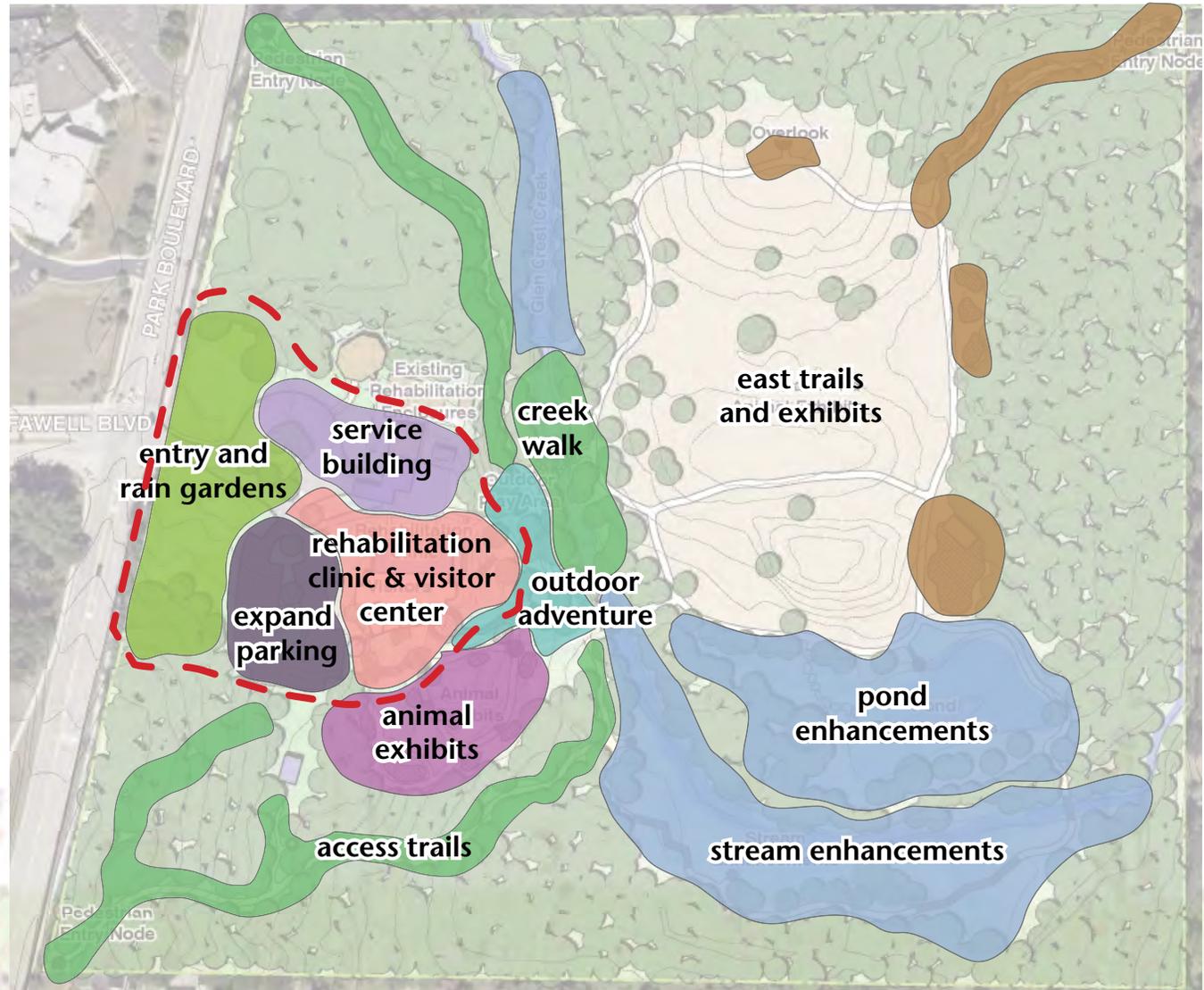
building assessment report
space program for buildings
public opinion survey
minutes of key discussions



PROJECT COMPONENTS

- New visitor center
- Expand clinic
- Expand parking
- Entry and rain gardens
- Service building
- Enhance indoor exhibits
- Animal exhibits
- Outdoor adventure
- Access trails
- East trails and exhibits
- Pond enhancements
- Stream enhancements
- Creek walk

Note: the heavy dashed red line outlines a suggested "first phase" of development.



COSTS

As part of the master plan study, Wight has developed project cost budgets for the various components of the overall plan for the District’s use in anticipating and budgeting for the projected cost of implementing the Plan. These budgets should be viewed as an initial estimation of the range of projected total project cost based on the level of planning detail developed to date. The budget contains a contingency for costs that are unknown at this time.

In the table at right, note the following:

- predicted costs are subdivided into 13 project components (illustrated at left), each **inclusive of all costs** to implement that component
- costs are projected in today’s dollars as of the date of this report. Consequently, a cost escalation will need to be applied to the budget based on the year in which the project or portions of the project will be implemented
- the list is not in specific priority order, but the **first five components** are seen as an appropriate first phase, with a budget range of between \$10.5 and \$13.8 million, and an estimated timeline for completion of two to two and a half years

The suggested first phase links the first five components, and is recommended because:

- these components are interrelated in such a way that they would most efficiently be constructed in a single project
- on completion, the vast majority of Willowbrook’s deficiencies would be alleviated
- on completion, the level of public service and educational experience would be dramatically elevated

Pre-Design Budget Analysis

project component	range of projected cost	
	low	high
New Visitor Center New Visitor Center with basic Exhibits	\$7,400,000	\$10,300,000
Expand Clinic Expand and modernize rehabilitation clinic	\$1,400,000	\$1,700,000
Expanded Parking Expand Parking Lot	\$500,000	\$500,000
Entry and Rain Gardens Realign and enhance entry area with rainwater gardens	\$300,000	\$300,000
Service Building Expand and Upgrade Service Building	\$900,000	\$1,000,000
Enhanced Visitor Center Exhibits Broaden Scope of Indoor Exhibits within the Visitor Center	\$900,000	\$1,800,000
Animal Exhibits Upgrade and Expand Outdoor Animal Exhibits	\$1,900,000	\$1,900,000
Outdoor Adventure develop play area, with SkyWalk	\$400,000	\$400,000
Access Trails develop pedestrian entry points and trails from Park Blvd into East trails	\$100,000	\$100,000
East Trails Enhance East Trails, develop habitat cages and interpretive elements	\$800,000	\$800,000
Pond Enhancements Pond Enhancements; develop trails, boardwalks, overlooks, education node	\$600,000	\$600,000
Stream Enhancements Stream Enhancements; develop trails, new bridges, overlooks	\$1,400,000	\$1,400,000
Creek Walk develop play area at stream bank	\$300,000	\$300,000
Total Estimated Project Costs	\$16,900,000	\$21,100,000

APPENDIX

Executive Summary	Introduction:	acknowledgements introduction
	Summary:	background process synopsis & recommendation

Issues & Goals	Willowbrook today:	summary of existing conditions existing site summary existing buildings summary
	Goals & objectives:	mission statements planning goals plan objectives

Master Plan	Overall concept:	master site plan - overall site plan - west site plan - east
	Built elements:	conceptual building plans architectural form
	Interpretation:	contributed by Bluestone+Associates
	Sustainability:	sustainable goals green features of the master plan
	Implementation:	project components costs

Appendix	building assessment report space needs program for buildings public opinion survey minutes of key discussions
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Appendix

APPENDIX (under separate cover)

Please refer to the Appendix, under a separate cover, for detailed information outlined below.

Building Assessment Report

Contains detailed information concerning the condition of existing built structures at Willowbrook Wildlife Center.

Space Needs Program for Buildings

Contains a space program with square footage requirements outlines per type of space.

Public Opinion Survey

Contains survey results from an online survey conducted in September 2009.

Minutes of Key Discussions

Contains minutes from planning and goal-setting meetings held with FPDDC, WWC staff, Bluestone & Assoc., and Wight & Company.