

General Development Plan

Rocky Mountain Arsenal National Wildlife Refuge

November 2017



The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.



The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations.

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At Home in the Grass

The diverse and rich life of the Great Plains provides just the right setting for a diversity of grassland birds and wildflowers in beautiful prairie. In fact, these grasslands are home to a unique assemblage of birds and adapted to living in this habitat. These songbirds, waterfowl, raptors, and other birds are sometimes "grassland-dependent" because they call the open prairie home in spring and summer or even throughout the year. These birds find the food, nesting materials, and shelter they need to survive.



The Grasshopper Sparrow

Grasshopper sparrows are one of the most common birds of the Great Plains. Since the early 1900s, many birds of this species have been reported in grasslands, shrub, and other types of habitats. Grasshopper sparrows are birds that live in the grasslands of the Great Plains. They are birds that live in the grasslands of the Great Plains. They are birds that live in the grasslands of the Great Plains.



Vesper Sparrow

Vesper sparrows are birds that live in the grasslands of the Great Plains. They are birds that live in the grasslands of the Great Plains. They are birds that live in the grasslands of the Great Plains.



Greater Prairie-Chicken

Greater prairie-chickens are birds that live in the grasslands of the Great Plains. They are birds that live in the grasslands of the Great Plains. They are birds that live in the grasslands of the Great Plains.

**Rocky Mountain Arsenal NWR
Refuge Regulations**

The Refuge is open to:

- Hiking
- Birdwatching
- Photography
- Wildlife viewing

The Refuge is closed to:

- Off-trail travel
- Fire
- Alcohol
- Drugs
- Firearms
- Motor vehicles

Please observe all signs and posted laws.

This General Development Plan (GDP) is a step-down plan to the 2015 Rocky Mountain Arsenal National Wildlife Refuge Comprehensive Conservation Plan (CCP). The GDP includes a set of **site plans** for new and improved wildlife dependent recreation and visitor facilities as well as operation and administrative facilities. Also included are **design guidelines** which are intended to serve as a reference for future refuge managers and ensure that the character of development and facilities is consistent and utilizes a common palette of materials and design styles. These design guidelines will be applicable complex-wide and will help inform development of facilities at Rocky Flats and Two Ponds National Wildlife Refuges. The final component of the GDP is a **sign plan** which overviews recommendations for the design and organization of signs and for improving way finding within the refuge.

ROCKY MOUNTAIN ARSENAL NATIONAL WILDLIFE REFUGE SITE PLANNING

Rocky Mountain Arsenal National Wildlife Refuge (NWR) is open to the public and visitation is on the rise. The 2015 CCP recognizes and supports several national Departmental and U.S. Fish and Wildlife Service programs. To fully implement these programs as described in the CCP, a site planning effort was initiated to articulate the refuge's vision for enhancements to visitor services and refuge operations.

Urban Wildlife Conservation Program. Creating a connected conservation community is supported by opportunities for urban residents to find, appreciate, and care for nature at the Rocky Mountain Arsenal NWR. This site planning effort provides improved way finding and additional transportation options to and within the refuge, reduces the negative impact of a perimeter fence, and creates more ways to access the refuge from neighboring communities.

Department of the Interior Reduce the Footprint Program. Intended to control utilization and spending associated with real property, this comprehensive site planning effort proposes to reduce the overall square footage of refuge facilities. Many of the existing refuge facilities were re-purposed Army buildings which are now outdated and have maintenance deficiencies. Over the life of the CCP, approximately 5-7 buildings and 21 storage sheds are proposed for demolition. Demolished buildings will be replaced by energy efficient, right-sized facilities needed to support high quality visitor experiences and refuge operations.

Reduce the Carbon Footprint/Net-Zero Buildings. Saving water and energy at our national wildlife refuges contributes to the U.S. Fish and Wildlife Service's goal of reducing its carbon footprint and becoming carbon neutral by 2020. New facilities will include integrated design, construction, and operation standards with the Leadership in Energy and Environmental Design (LEED) rating system to achieve the vision and energy-efficiency for new facilities on the refuge. A diverse portfolio of renewable-energy technologies will contribute to the production of heat and electricity for refuge facilities. We will work with Excel Energy to develop a program whereby surplus energy generated on the refuge may be used to assist low-income families residing in communities adjacent to the refuge.

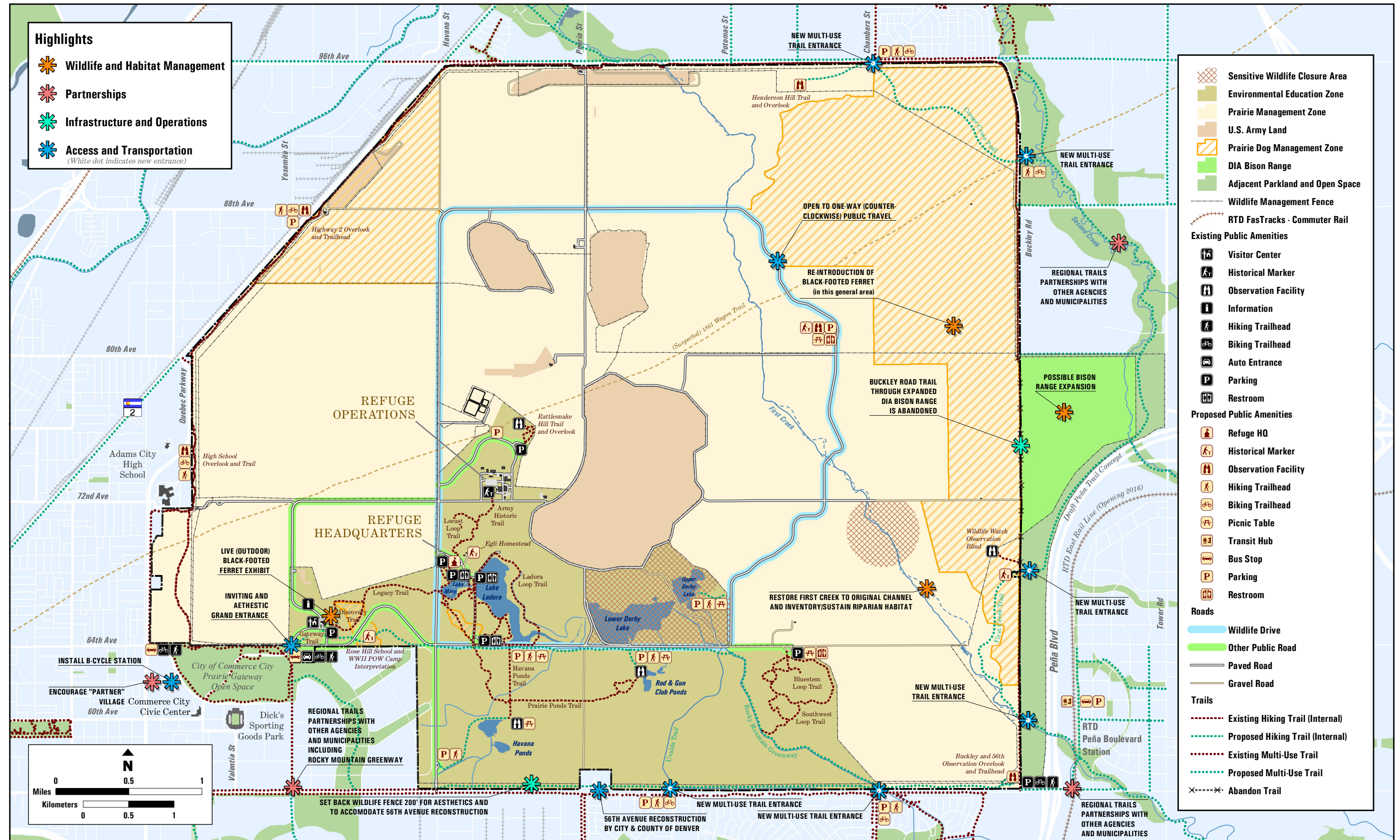
Specifically, this site planning effort addresses the following needs:

- A new office is funded and construction will begin in FY17.
- Funding for roads through the Federal Highway Administration in FY18 and FY19.
- A multi-purpose building is scheduled to replace the existing Contact Station in FY20.
- The trails and trailheads will be submitted for consideration in a Federal Land Access Program (FLAP) proposal.
- Within the refuge operations area, the Army is starting to move on consolidating office space and demolition of existing facilities that are no longer needed. RMA needs to prepare a site plan to ensure the area's functionality is optimized.

The site plans that follow propose future building locations and facility footprints, as well as, improved vehicular and pedestrian circulation systems and typical designs for trailhead access points along the refuge's perimeter.

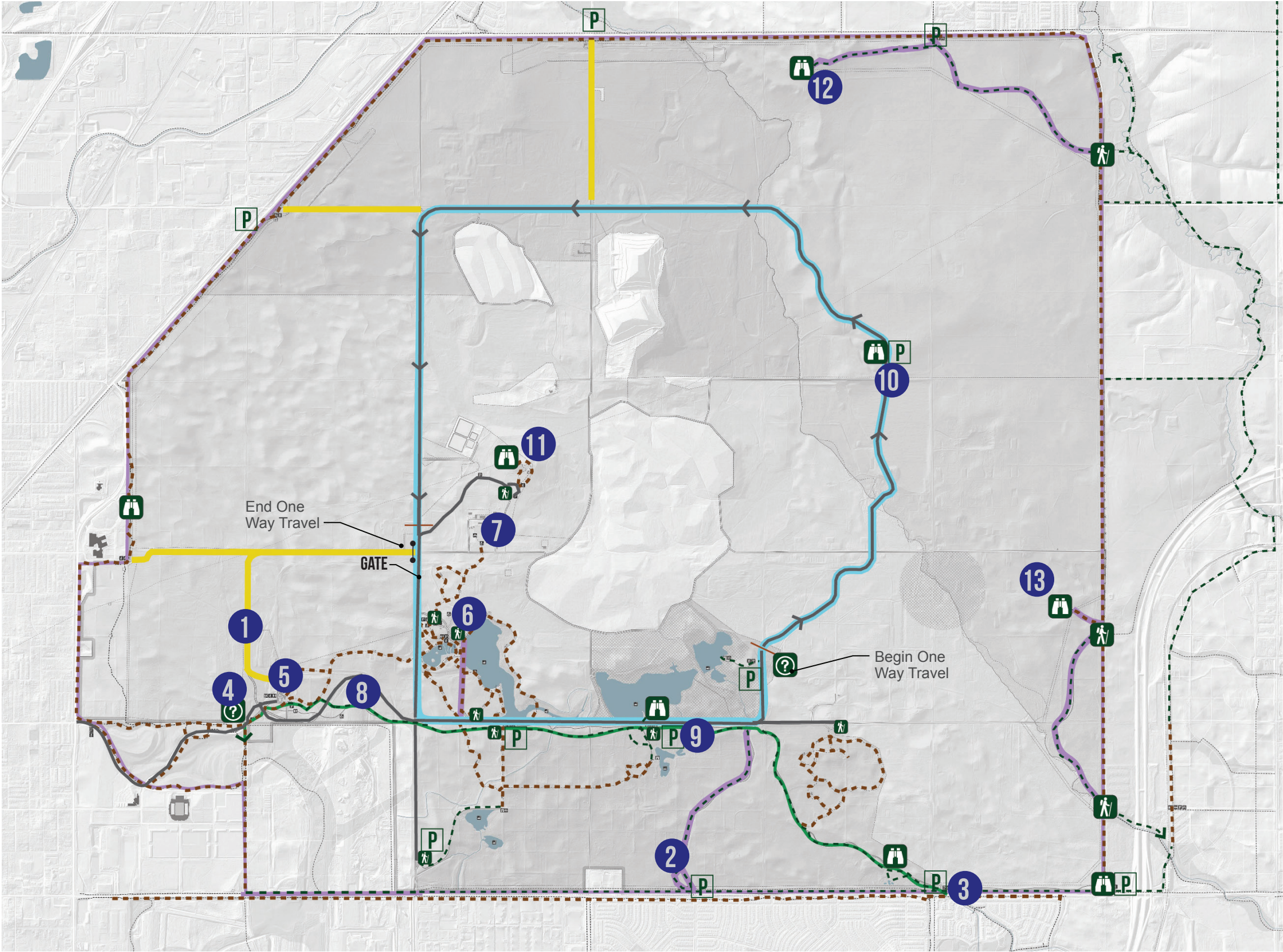
ROCKY MOUNTAIN ARSENAL NWR: 2015 COMPREHENSIVE CONSERVATION PLAN

The collection of site plans and design guidelines contained in this GDP build on the 2015 Rocky Mountain Arsenal NWR CCP by offering with conceptual designs and recommendations for how the CCP can be implemented over time. This is the map of the CCP's proposed action alternative.



ROCKY MOUNTAIN ARSENAL NWR: SITE PLANNING KEY

Site plans for each of the numbered areas are included in this GDP. These locations were selected because the CCP called for new or upgraded facilities in these areas along with general improvements to both pedestrian and vehicular circulation throughout the refuge.



LEGEND

- TWO-WAY ROAD
- WILDLIFE DRIVE
- SERVICE ROAD (NO PUBLIC ACCESS)
- MULTI-USE TRAILS
- MULTI-USE GREENWAY TRAIL
- PROPOSED TRAILS
- EXISTING TRAILS
- NEW TRAILHEAD PARKING
- NEW IMPROVED TRAILHEAD
- PROPOSED OVERLOOK
- INFORMATION KIOSK

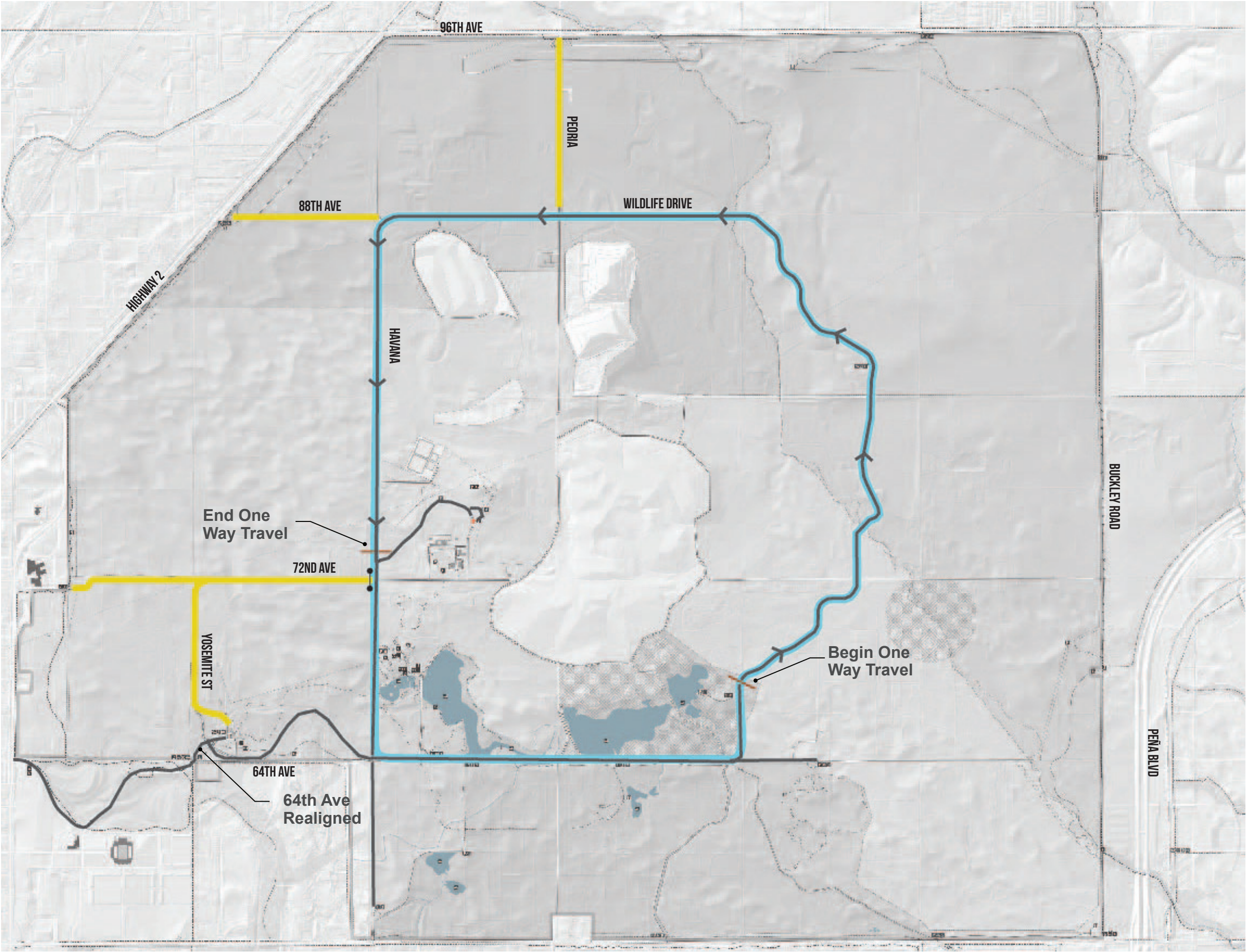
SITE PLANNING KEY

The GDP includes site plans for the following areas within Rocky Mountain Arsenal NWR:

- 1 Road & Circulation Improvements
- 2 New Trailheads, Trails, Overlooks & Kiosks
- 3 Typical Trailheads (with and without parking)
- 4 Refuge Entrance Improvements
- 5 Refuge Headquarters & Meeting Complex
- 6 Lake Mary Learning Center
- 7 Refuge Operations Area
- 8 Bunk House
- 9 Lower Derby Lake Trailhead & Overlook
- 10 Mortar Range Overlook
- 11 Rattlesnake Hill Overlook
- 12 Henderson Hill Overlook
- 13 First Creek Overlook



1 ROAD & CIRCULATION IMPROVEMENTS



Site Planning Considerations & Discussion

The site planning process addressed vehicular circulation within the refuge and resulted in the recommended closure of certain roads. Change proposed include the following:

- The Wildlife Drive will be a one-way, counter-clock-wise route.
- 64th Avenue is realigned near the entrance to improve the arrival sequence and route visitors east to the Visitor Center, the Lakes Area, or the Wildlife Drive.
- Yosemite Street and 72nd Ave will remain open to administrative vehicles, but closed to all visitors.
- The closure of Yosemite Street will reduce navigational confusion among entering visitors by reducing the number of intersections they encounter. Upon entering all visitors will be routed to the east, to the Visitor Center, the Lakes, or the Wildlife Drive.

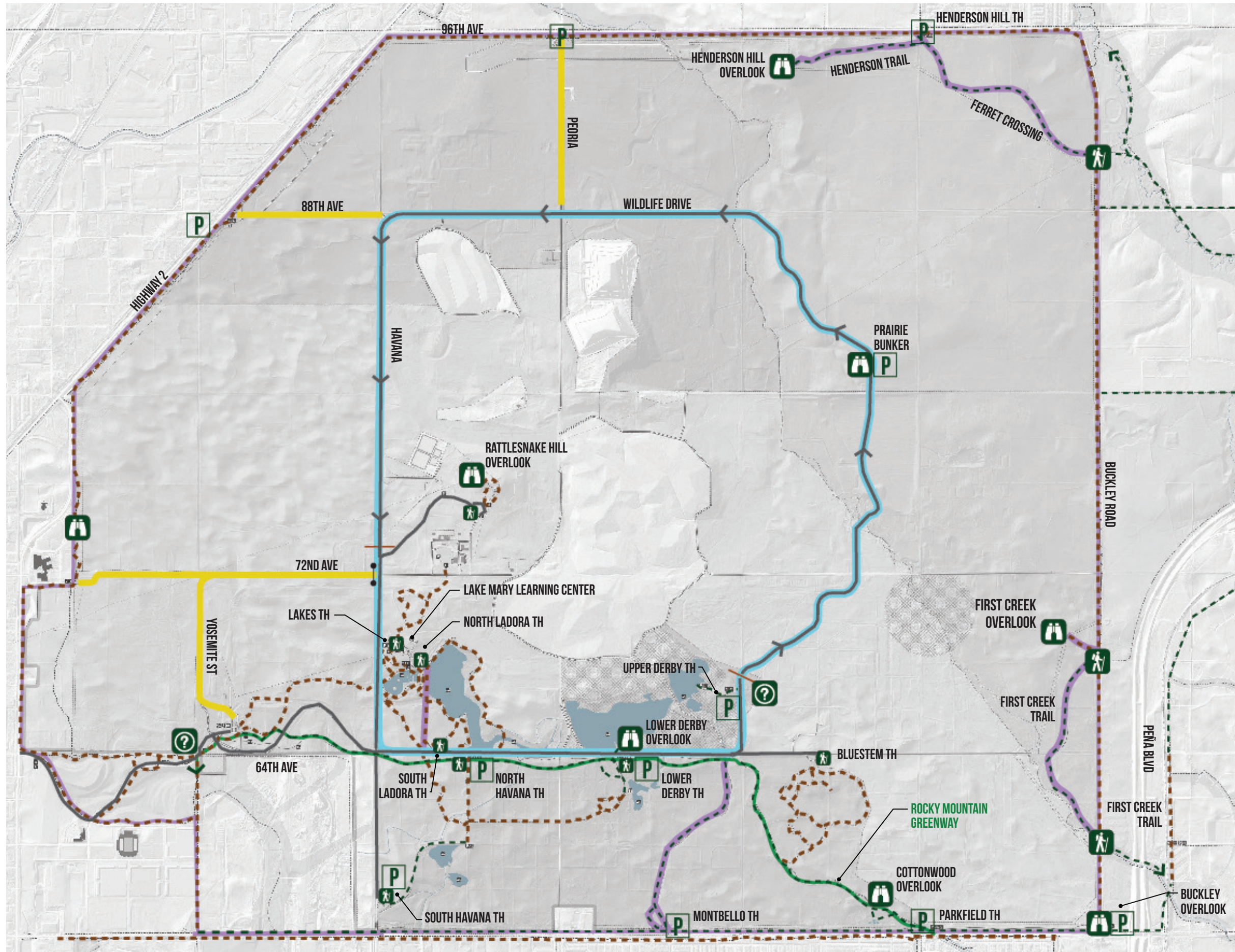
LEGEND

- TWO-WAY ROAD
- WILDLIFE DRIVE
- SERVICE ROAD (CLOSED TO PUBLIC ACCESS)



0 1 MILE

2 NEW TRAILHEADS, TRAILS, OVERLOOKS AND KIOSKS



Site Planning Considerations & Discussion

In order to increase opportunities for wildlife dependent recreation and to make the refuge more conveniently accessible to outlying neighborhoods, additional trailheads, trails, and overlooks will be built. The new trailheads will link the refuge trails with regional trail systems including the Rocky Mountain Greenway. The overlooks take advantage of scenic vistas that lend themselves to interpretation and create destination points for trail users and other refuge visitors.

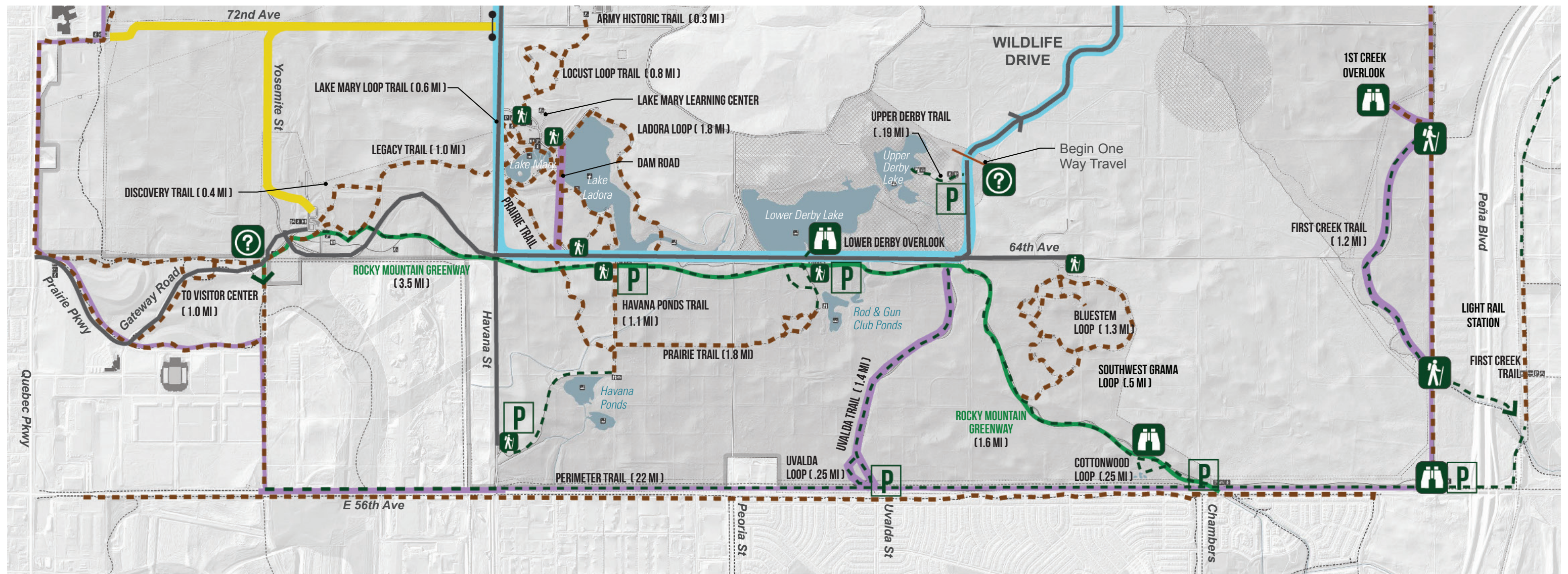
LEGEND

-  TWO-WAY ROAD
-  WILDLIFE DRIVE
-  SERVICE ROAD (NO PUBLIC ACCESS)
-  MULTI-USE TRAILS
-  MULTI-USE GREENWAY TRAIL
-  PROPOSED TRAILS
-  EXISTING TRAILS
-  NEW TRAILHEAD PARKING
-  NEW OR IMPROVED TRAILHEAD
-  PROPOSED OVERLOOK
-  NEW INFORMATION KIOSK



0 1 MILE

2 NEW TRAILHEADS, TRAILS, OVERLOOKS AND KIOSKS [DETAIL]



LEGEND

- | | | | |
|--|---------------------------------|--|---------------------------|
| | TWO-WAY ROAD | | NEW TRAILHEAD PARKING |
| | WILDLIFE DRIVE | | NEW OR IMPROVED TRAILHEAD |
| | SERVICE ROAD (NO PUBLIC ACCESS) | | PROPOSED OVERLOOK |
| | MULTI-USE TRAILS | | INFORMATION KIOSK |
| | MULTI-USE GREENWAY TRAIL | | |
| | PROPOSED TRAILS | | |
| | EXISTING TRAILS | | |

0 1 MILE



Site Planning Considerations & Discussion

The following changes to circulation were recommended to the southern portion of the refuge:

- Short looped trails off the Uvalda and Chambers trailheads in order to create convenient, easily accessible refuge experiences for neighboring communities.
- The alignment of the Rocky Mountain Greenway was adjusted to ensure it is brought close to the visitor center and provides convenient east-west travel through the refuge while also offering connections to trails that spur off it.
- Certain trails have been designated multi-use trails meaning that they are open to bike use. Since they are open to bikes the Rocky Mountain Greenway and the trails highlighted in purple on the map will provide alternative wildlife-dependent recreation experiences while also providing an alternative mode of accessing the refuge.

3 TYPICAL TRAILHEAD SITE PLANS (WITH PARKING)

The CCP calls for seven new trailheads located along RMA's perimeter. Four of these trailheads would provide parking the other three trailheads would link into existing and proposed regional trail systems and provide refuge access on foot or by bike.

Site Planning/Design Considerations:

- Trailheads will be sited at signaled intersections along 56th Avenue and Chambers to allow for convenient and safe ingress and egress and pedestrian crossings from outlying neighborhoods.
- Informational and orientation sign will be incorporated into the game fence. At the trailheads, the game fence will be bumped out in order to create needed space for the parking area.
- The swing gate at the trailhead will include an automatic locking mechanism
- A nature play area will sited just inside the fence and will, hopefully, entice families. A small nature play feature could also be sited within the parking area.
- Other site furnishings at the trailhead will include a bike rack, trash/recycle receptacle, orientation kiosk and wayfinding signs, as well as, seating.
- The trailhead will provides access to a 5' wide accessible, crusher fines trail. On the southern boundary (along 56th Ave), these trailheads will link into the wildlife drive, lake area and the visitor center.

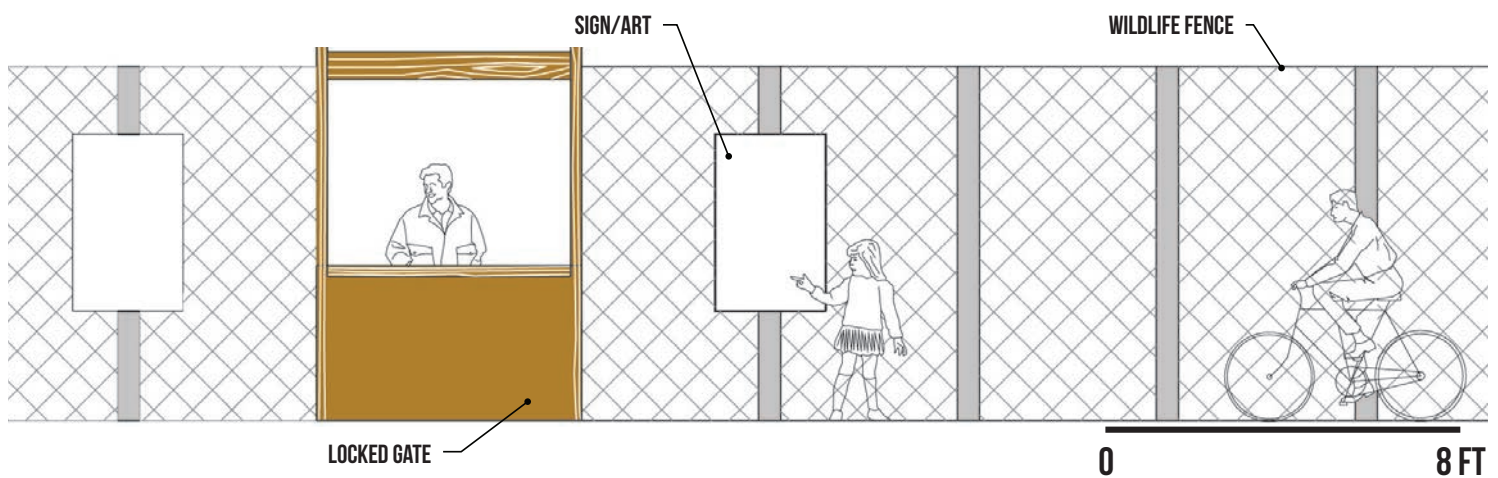
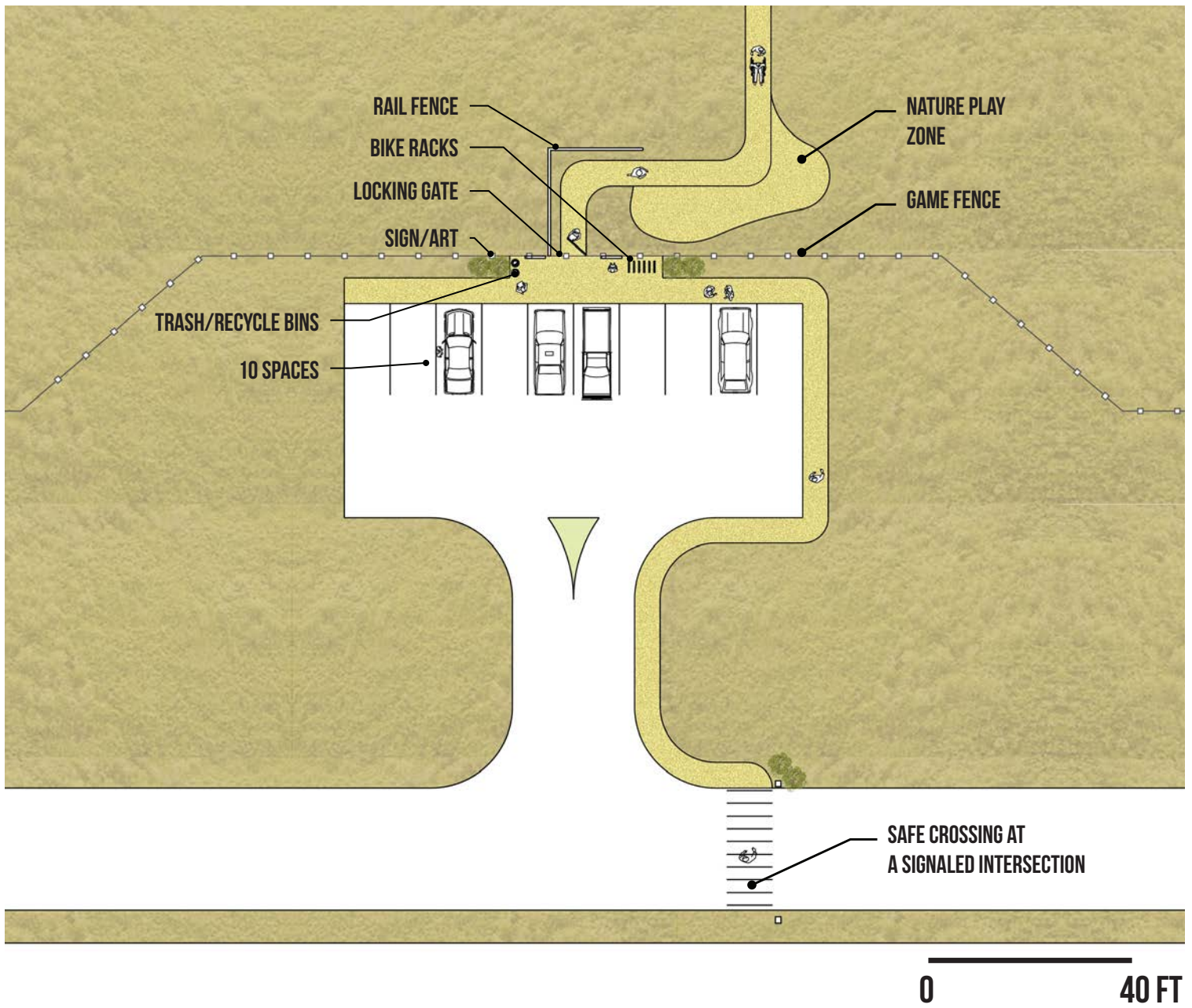
Community Input on Trailhead Design & Safety

In the fall of 2017, the Service collected input from the refuge's neighbors, community residents and local youth on *What type of trailheads along 56th Avenue would welcome neighbors and encourage more of them to visit and enjoy the Refuge?* The input collected is summarized in Appendix A of this document and some of the recommendations from the community are listed below.

- Being with family and friends is important. Ensure that the trailhead is designed to be child and family friendly.
- Need to strike a balance between an urban and manicured feel at the trailhead and a more typical, wild and natural appearance. If the trailhead is too natural looking, it will look uncared for and overgrown and will be less attractive to visitors while also potentially inviting littering and unwanted uses.
- Make sure there are safe crossings along 56th avenue so the trailheads are convenient and safe to get to. Recommend traffic lights at Uvalda and Crown.
- Its great that these trailheads will be in walking and biking distance for lots of neighbors, just make sure they are safe to get to.



Examples of nature play features built from natural materials and inviting unstructured play. More nature play inspiration is provided in the Design Guidelines section of the plan.



3

TYPICAL TRAILHEAD SITE PLAN (WITHOUT PARKING)

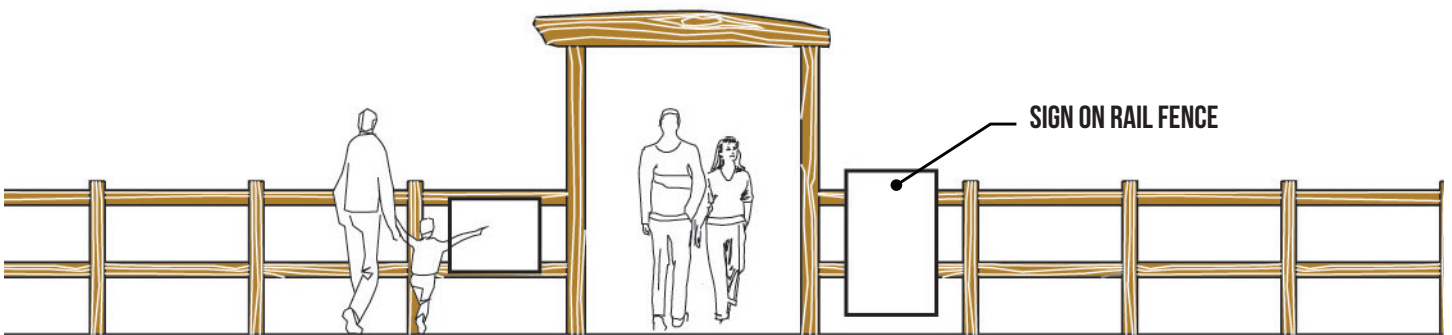
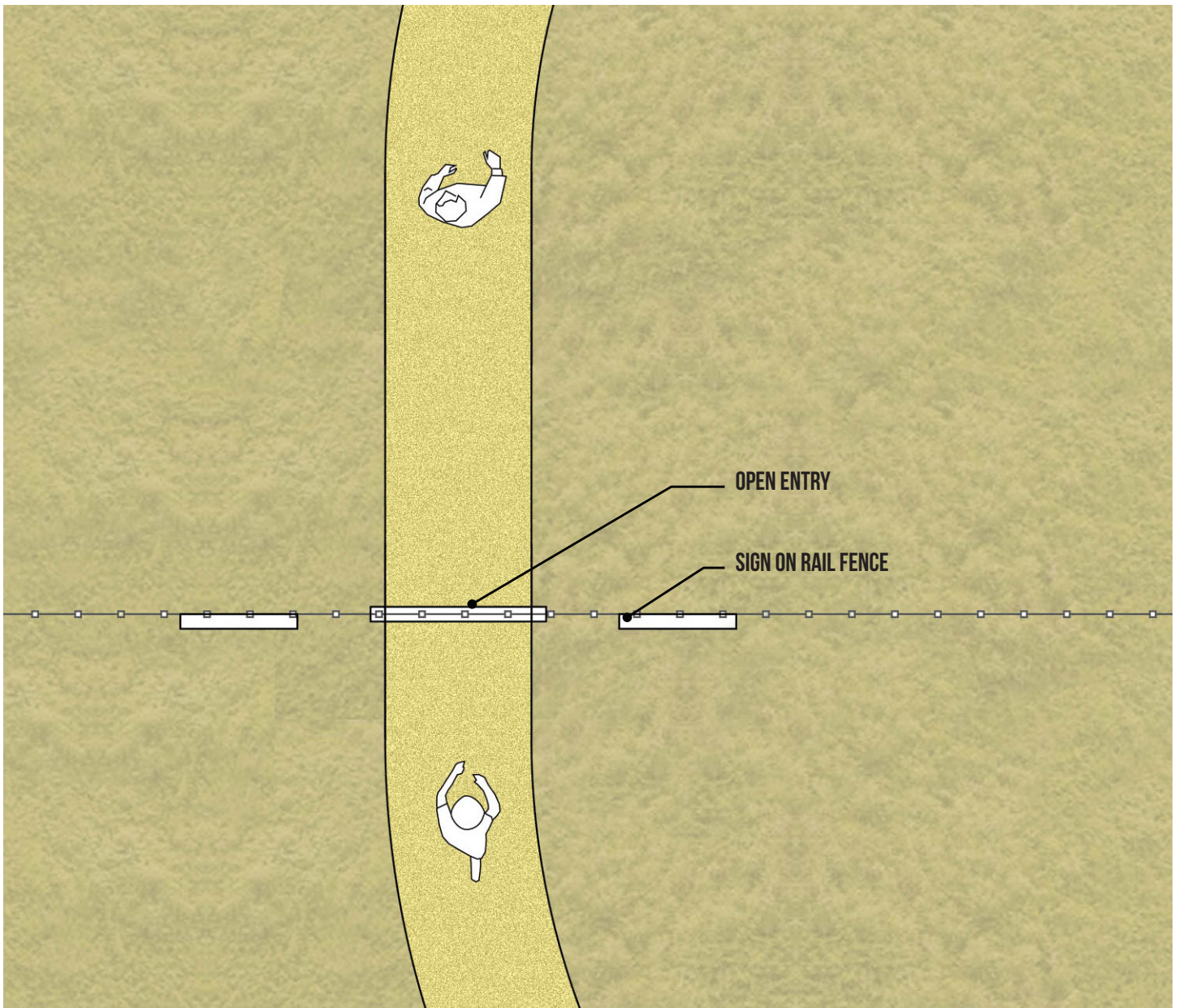
Three simple trail access points located along the eastern refuge boundary provide linkages from outlying regional trail systems into Rocky Mountain Arsenal NWR's trail system. These trailheads will not include parking and will be accessible to visitors on foot or bike. A Service sign will indicate to visitors that they are entering a National Wildlife Refuge.

Site Planning/Design Considerations:

- A narrow opening in the perimeter rail fence is marked by a pedestrian-scaled open ranch gate. These trailheads are located in areas where the perimeter fence is a rail fence and won't require a locking gate.
- Adhere the refuge sign to the fence. In cases where a perimeter fence is not needed, a small section of rail fence (approximately 8' on either side of the arch) could welcome visitors and demarcate the boundary.
- The trailhead provides access to a 5' wide accessible, crusher fines trail



At trailheads along the western boundary, where a perimeter fence may not be necessary, a pedestrian-scale, open gate, and small section of rail fence could be used to demarcate the entrance point and welcome visitors.



0 16 FT



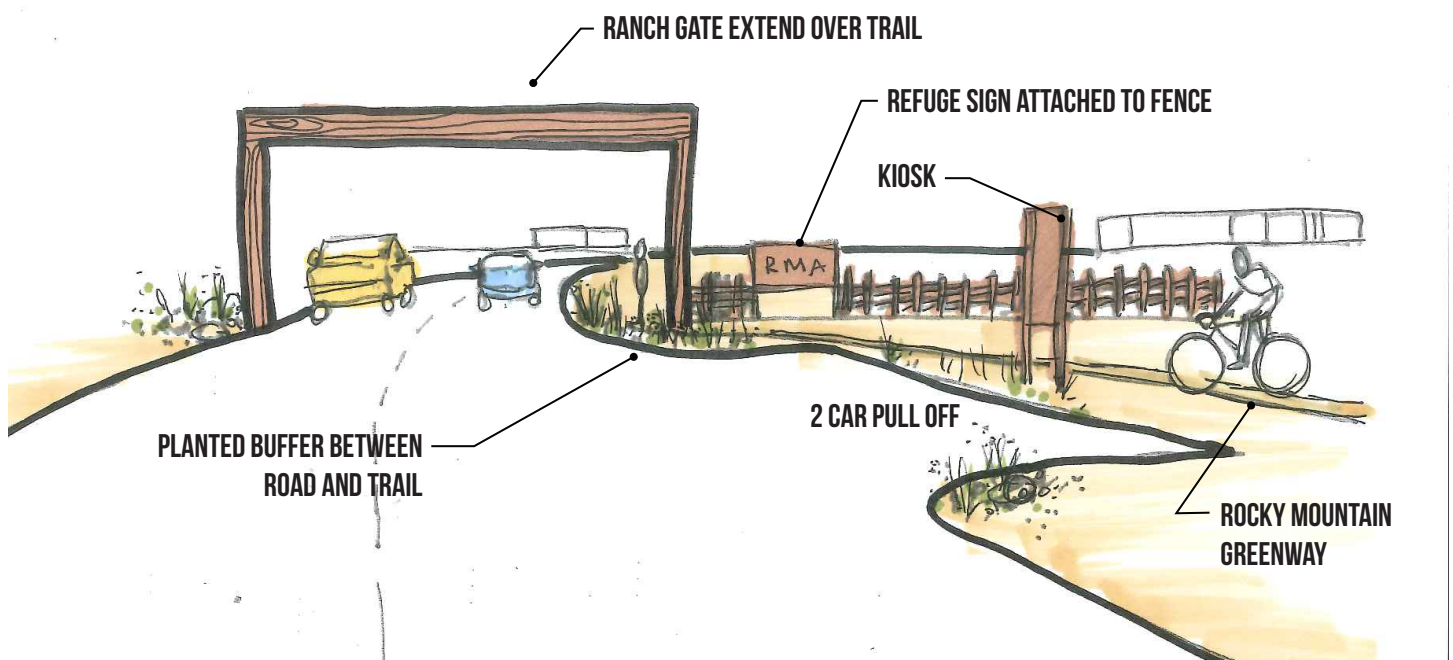
Fencing, signs, road alignment and the feel of the arrival sequence will all be improved at the refuge entrance.

4 REFUGE ENTRANCE IMPROVEMENTS

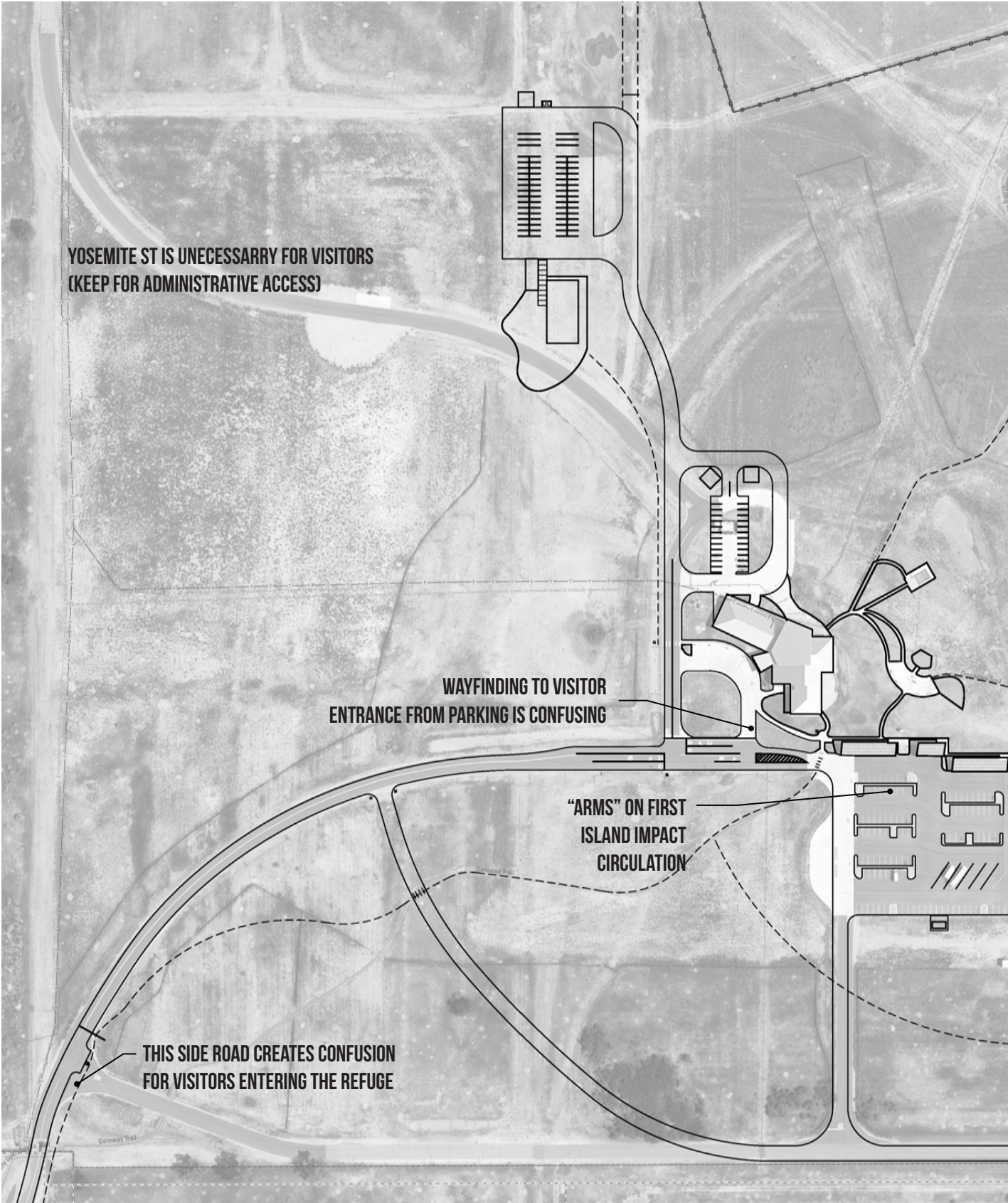
Site Planning Considerations & Discussion:

Recommended circulation improvements include creating a more pronounced and welcoming sense of entry.

- A simple ranch style gate is proposed to mark and formalize the entrance into the Rocky Mountain Arsenal RMA. The wildlife fence will be re-routed and replaced with less intimidating rail fence making the entrance more welcoming to visitors.
- Since the ranch entrance is likely to become a desirable spot for taking photos, a car pull off is incorporated into the design. At this pull off visitors will also find an information kiosk.
- The refuge sign adjacent to the ranch gate should take design cues from the sign in front of the visitor center to ensure consistency among the welcome/way finding signs.



EXISTING CONDITION AERIAL PHOTO: VISITOR CENTER

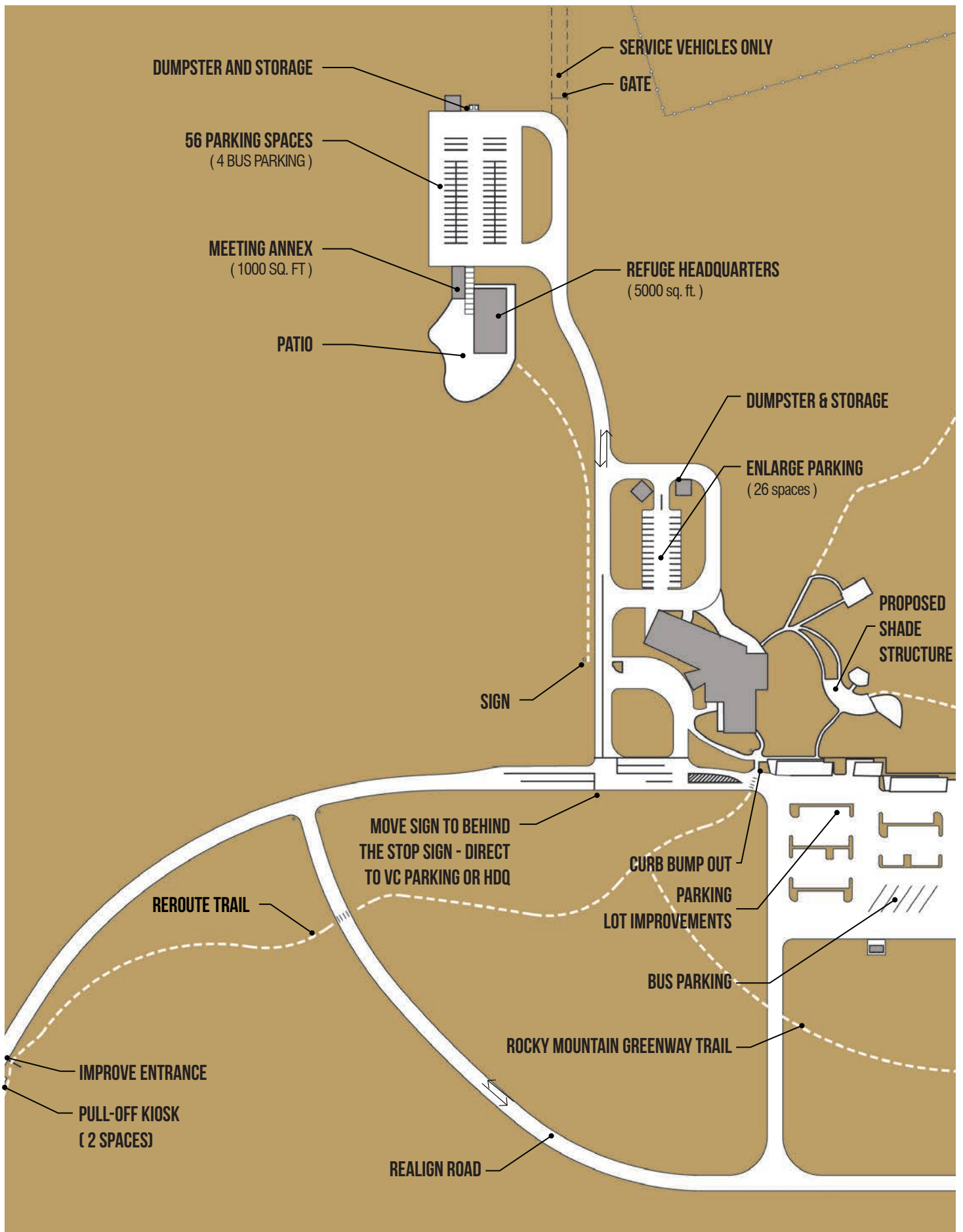


REFUGE HEADQUARTERS & MEETING COMPLEX

A new office is funded for RMA in FY17. Cost replacement value is associated with the demolition of building 121 and, therefore, the new building will need to be 5000 square feet or less. Additionally, RMA hosts trainings, large meetings, and events 2 times per month and needs a dedicated space to accommodate all of these meeting requests from the Regional Office, Department of Interior and others. It is proposed that the square footage needed for the meeting annex building is in addition to the square footage available for the new office.

Site Planning Considerations & Discussion:

- The headquarters building should centrally located and clearly distinguished from the Army buildings.
- It is preferable to consolidate supervisors and visitor services staff in one location (recognizing that maintenance staff will need to remain in the refuge operations area)
- The headquarters will accommodate work spaces for 13 people (8 supervisor offices/5 cubicles), desk space for seasonals, cubby space for telecommuters, a conference room (~15 people), a small meeting room, evidence room, radio dispatch, restrooms (w/ shower), a break room (table, microwave, refrigerator), file and IT storage.
- The headquarters and meeting annex building should be designed as a complex with some shared facilities (e.g., outdoor gathering space, kitchen). The meeting annex will be designed to accommodate groups of up to 50 people and include audio-visual equipment, a kitchen and catering staging area.
- New buildings are sited in a disturbed area and positioned to take advantage of the skyline and mountain views.
- Parking is sized to accommodate meeting participants, RMA staff, guests, buses and vehicle/equipment storage.
- The site plan also improves upon the existing arrival sequence and features a gated entrance, a roundabout, clear wildlife drive way finding, and improved visitor center drop off and parking.
- In the future, RMA staff will include and be distributed as follows:
 - Headquarters = 14.5 refuge employees + 4 regional employees
 - Visitor Center = 3 employees + 2 seasonals + 1 Friends group
 - EE Center = 2 refuge employees + 2 seasonals (*officed out of the HDQ or VC, but stationed at the EE Center*)
 - Maintenance (refuge operations area) = 3 refuge employees + 8 seasonals
 - Fire = 1 refuge employee + 2 seasonals

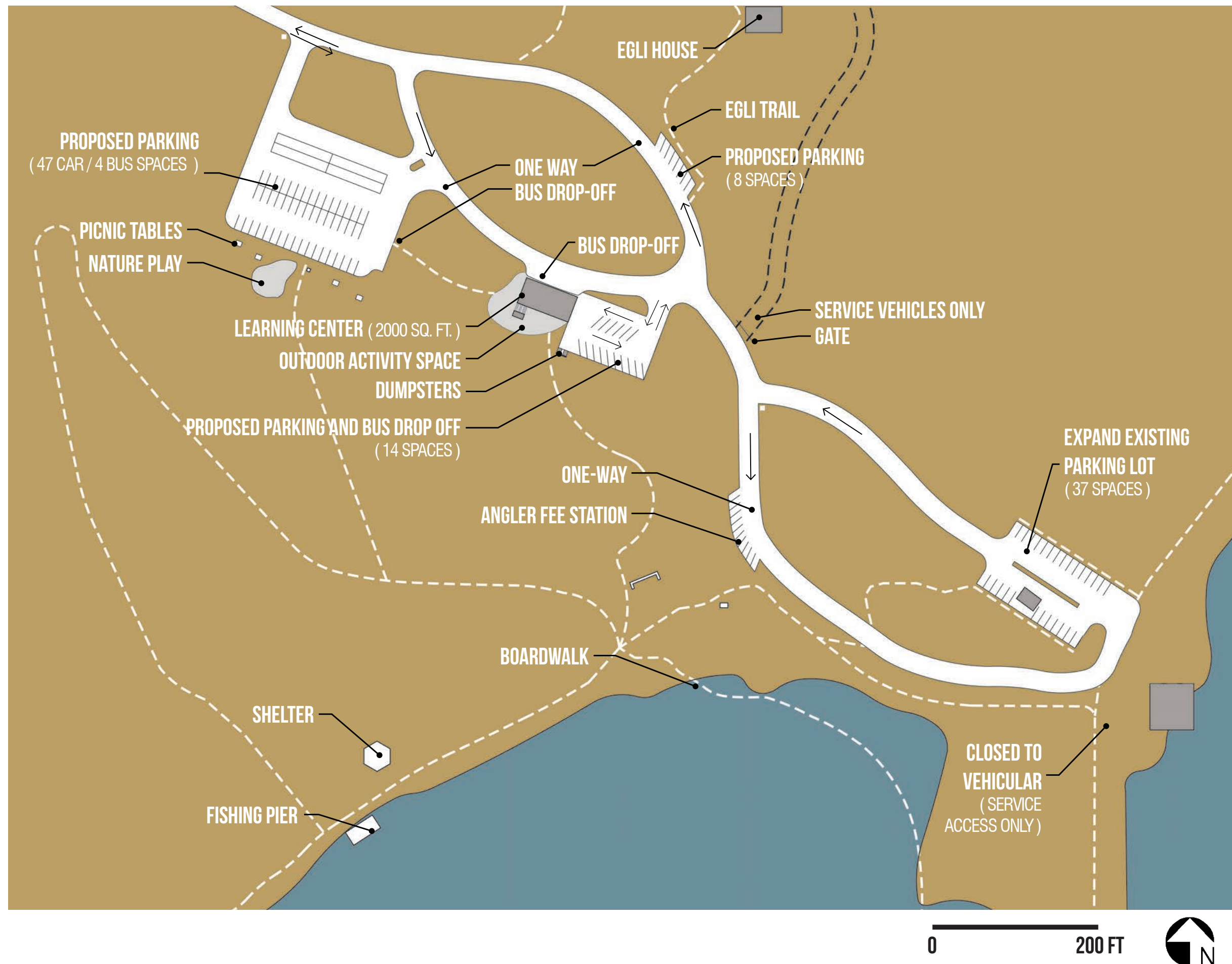




EXISTING CONDITION AERIAL PHOTO: LAKE MARY LEARNING CENTER

The existing visitor contact station at the Lakes Area is used for environmental education programming, but the building requires improvement and does not make a positive impression on visitors. It is recommended to demolish the existing contact station and replace it with a smaller, multi-purpose building (~ 2000sq ft) that will accommodate school groups (up to 60 students) and educational programming. RMA currently hosts 20,000 school kids a year and expects that number to grow to 120,000 per year.

6 LAKE MARY LEARNING CENTER AND AREA SITE PLAN

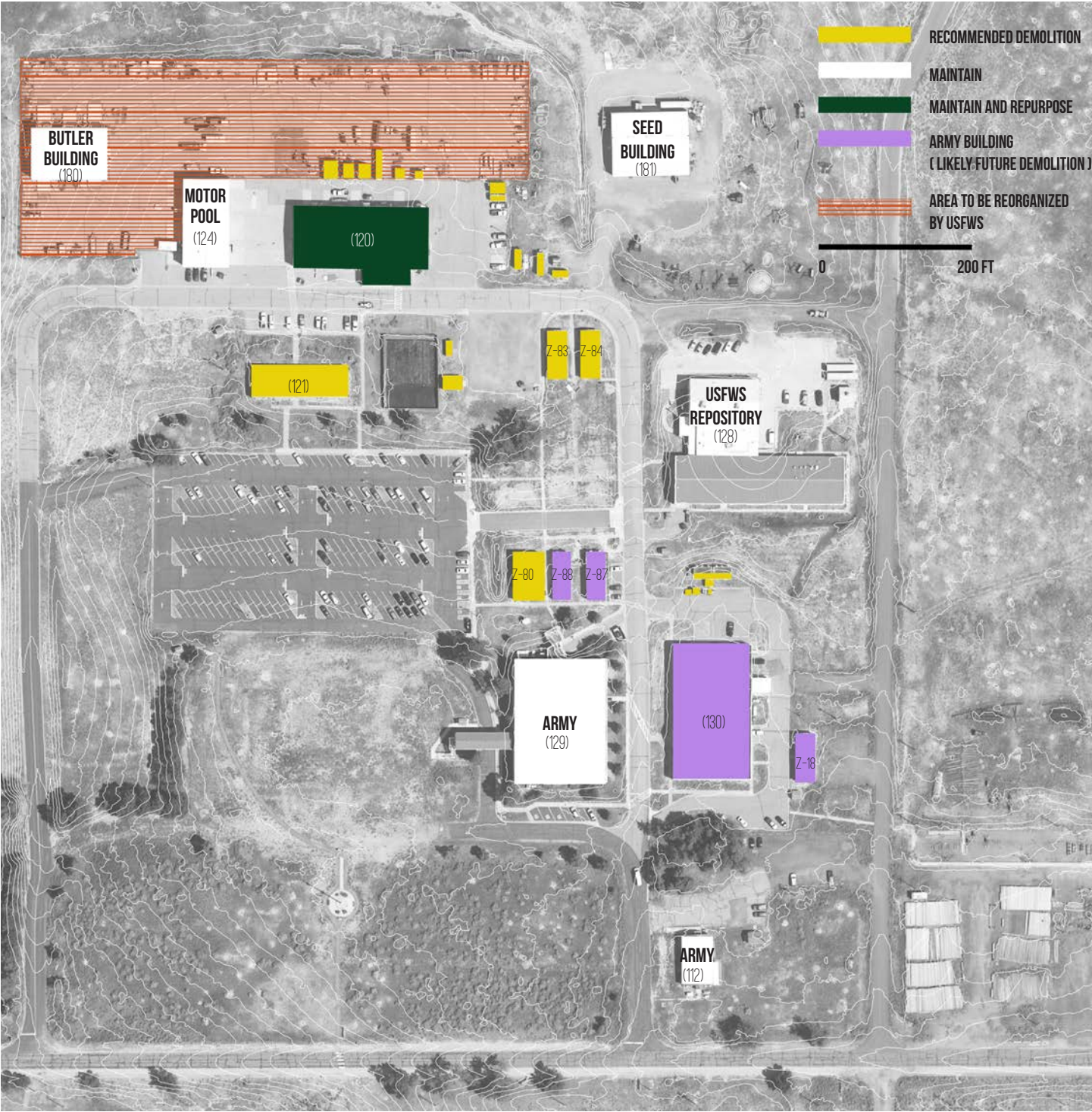


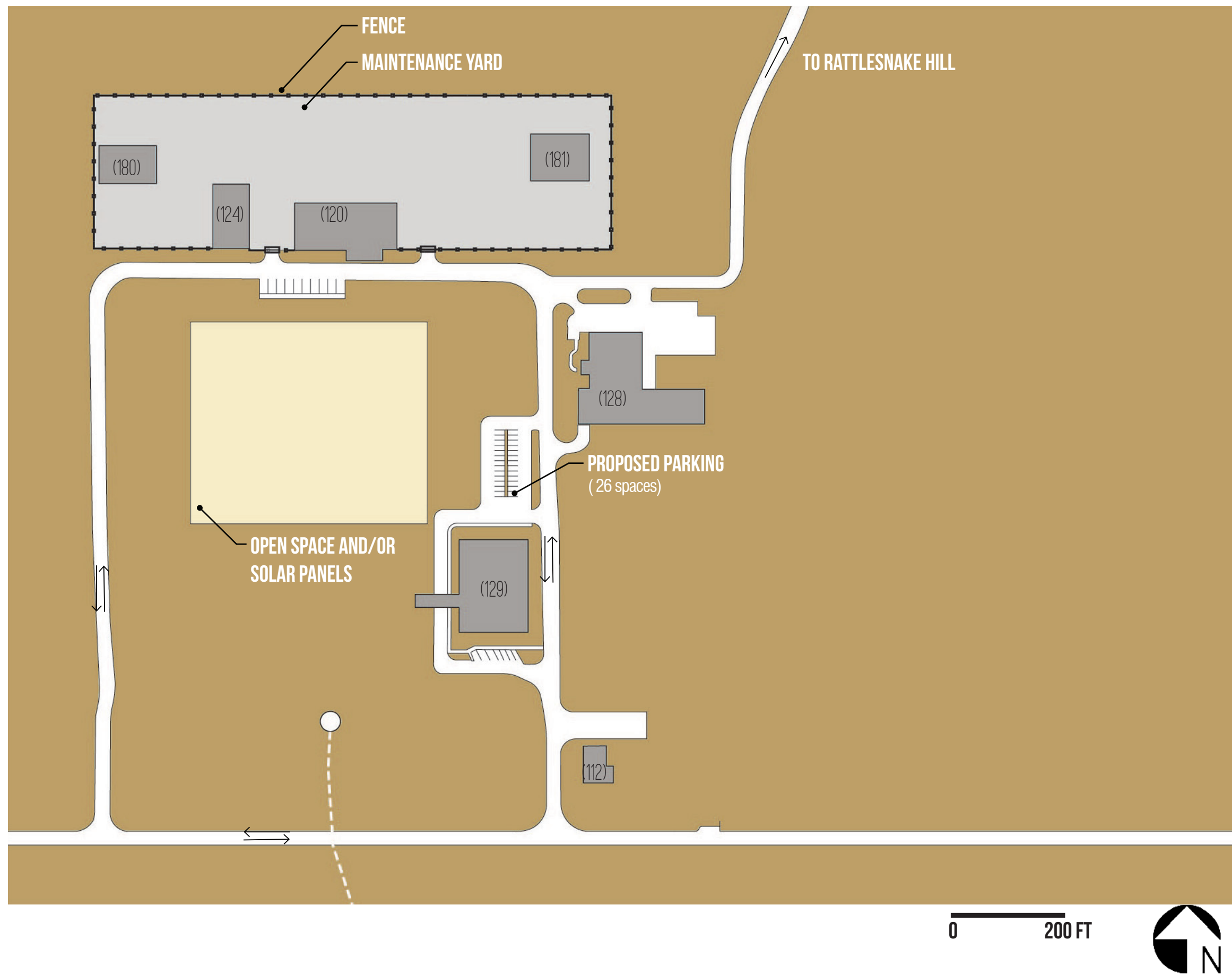
Site Planning/Design Considerations:

- Given its proximity to the trails and water and its great views, the Lakes Area remains the preferred location for an environmental education center.
- Given its location and use, it was suggested to name the new building the Lake Mary Learning Center.
- The new building will feature flexible activity space, an outdoor staging area, storage, and restrooms.
- The new building and surrounding site is designed to accommodate year-round programming including partner-led programming, events (e.g., Fishing Frenzy, Boy and Girl Scout camp, ELK fishing events), and future concessions.
- The site plan calls for the establishment of a formal Lakes Area Trailhead just west of the new building. This area will serve as a collection point for visitors looking to explore the Lakes Area.
- Overall parking is expanded and vehicular circulation is improved in anticipation of this becoming a primary destination for future visitors.
- Trails in the Lakes Area are reconfigured to reduce redundancy and to provide more convenient, direct, and accessible routes to the lakes. Existing facilities around the lakes (e.g., fishing piers, boardwalks, shelters) will be evaluated and upgrades recommended if needed.
- A small trailhead north of the new learning center provides convenient access to the Egli House.

REFUGE OPERATIONS AREA FACILITY INVENTORY

The planning team conducted a building inventory of the refuge operations area and determined that a number of the buildings can be demolished and others should be re-purposed. The map below depicts how the refuge operations area can be reconfigured in the years to come.





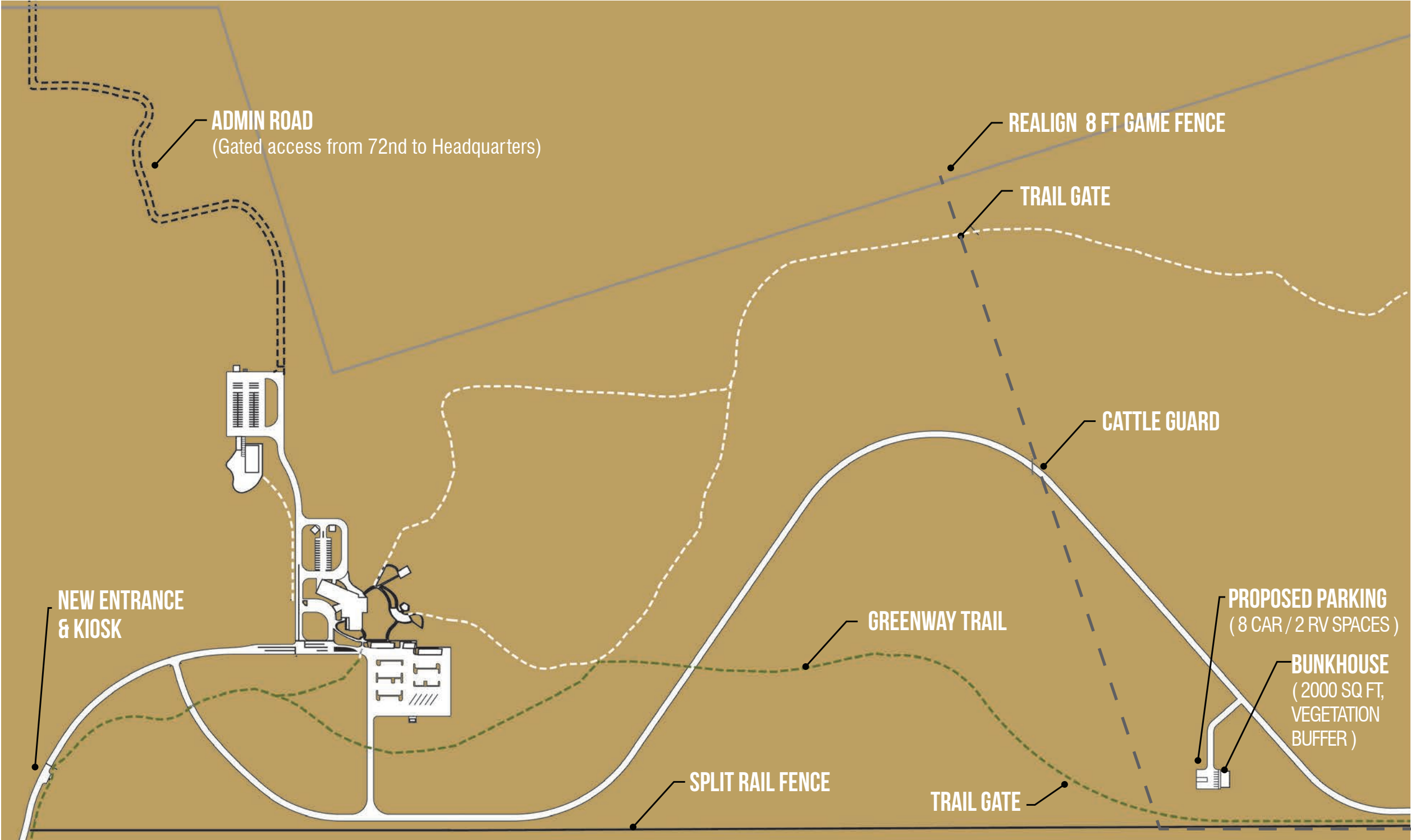
7

REFUGE OPERATIONS AREA SITE PLAN

When buildings are demolished, there will be considerable room for new uses and the restoration of building footprints and unnecessary roads and parking areas. While RMA will consolidate supervisory staff at the headquarters building, maintenance staff and projects will continue to be based out of the refuge operations area.

Site Planning/Design Considerations:

- FWS maintenance operations will be consolidated in a fenced compound.
- Remove unneeded buildings, roads, storage structures, parking areas and, where possible, restore prairie vegetation.
- The repository and Army buildings (129 and 112) remain conveniently accessible, but are clearly distinct from the RMA maintenance and operations facilities.
- Eventually the army will be able to absorb the 8 employees from the Washington Office's Wildlife and Sport Fish Restoration (WSFR) into building 129. These employees are currently housed in Z-80, a double wide trailer slated for demolition.



8 BUNK HOUSE SITE PLAN

The existing double wide trailers currently used for employee housing are in fair condition. They do not have kitchens or showers. To attract seasonals and better accommodate staff, upgraded housing is needed.

This site plan also demonstrates how the game fence will be pushed north (away from the entrance) in order to create a more welcoming arrival experience for visitors.

- Site Planning/Design Considerations:**
- As a former Superfund site, there are residential restrictions on most of the Refuge. The proposed location for the bunk house does not have such restrictions and should be well received by regulatory entities.
 - The bunkhouse area includes a residential building (~2000 sqft), parking, and 2 trailer pads. The development will be screened by vegetation.
 - A split rail fence will replace the 8' game fence along the southern boundary between the entrance gate and the bunkhouse, creating a more inviting entrance and opening views to Commerce City open space to the south.



Where a game fence is not needed, a split rail fence or no fence (just signs) will demarcate the refuge perimeter and create a more welcoming edge.

9 LOWER DERBY LAKE TRAILHEAD & OVERLOOK

Located along the Rocky Mountain Greenway, the Lower Lake Derby Trailhead provides access to an overlook on lake's southern shore, to the Rod and Gun Club Lakes and to the greenway.

Site Planning/Design Considerations:

- The area along the road that is currently used as a pull-off. This location also provides convenient access to the greenway and the Rod and Gun Club Lakes trails.
- In order to avoid impacts to the eagles and other wildlife, visitor access to the lake's south shore is restricted to the overlook. A fence and boulders will be used to direct visitors to the overlook and restrict access to the lake shore and to habitat to the east.
- The dam road will be gated and closed to vehicular traffic, but open to pedestrian access.

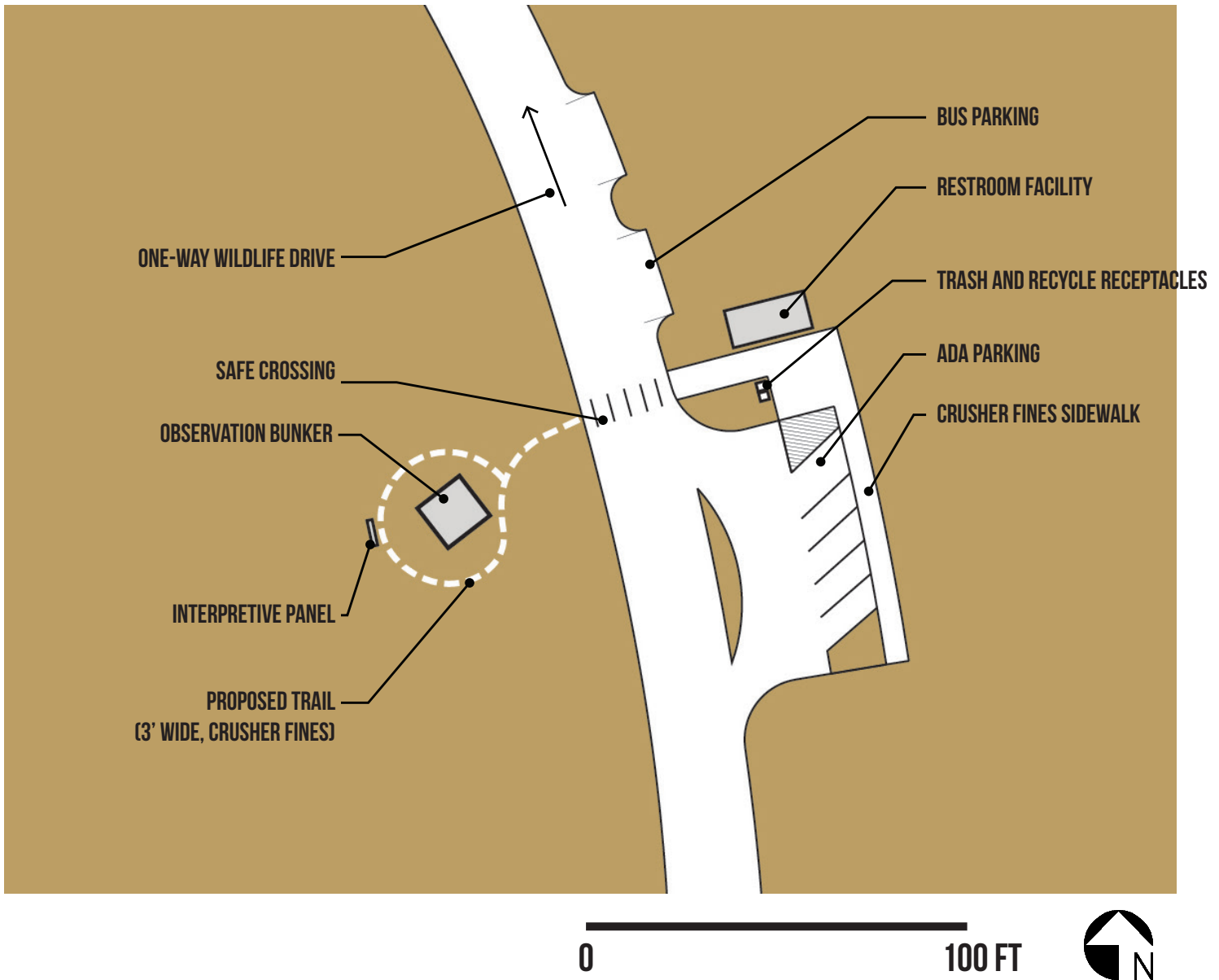


~ LOWER DERBY LAKE AREA TRAILS

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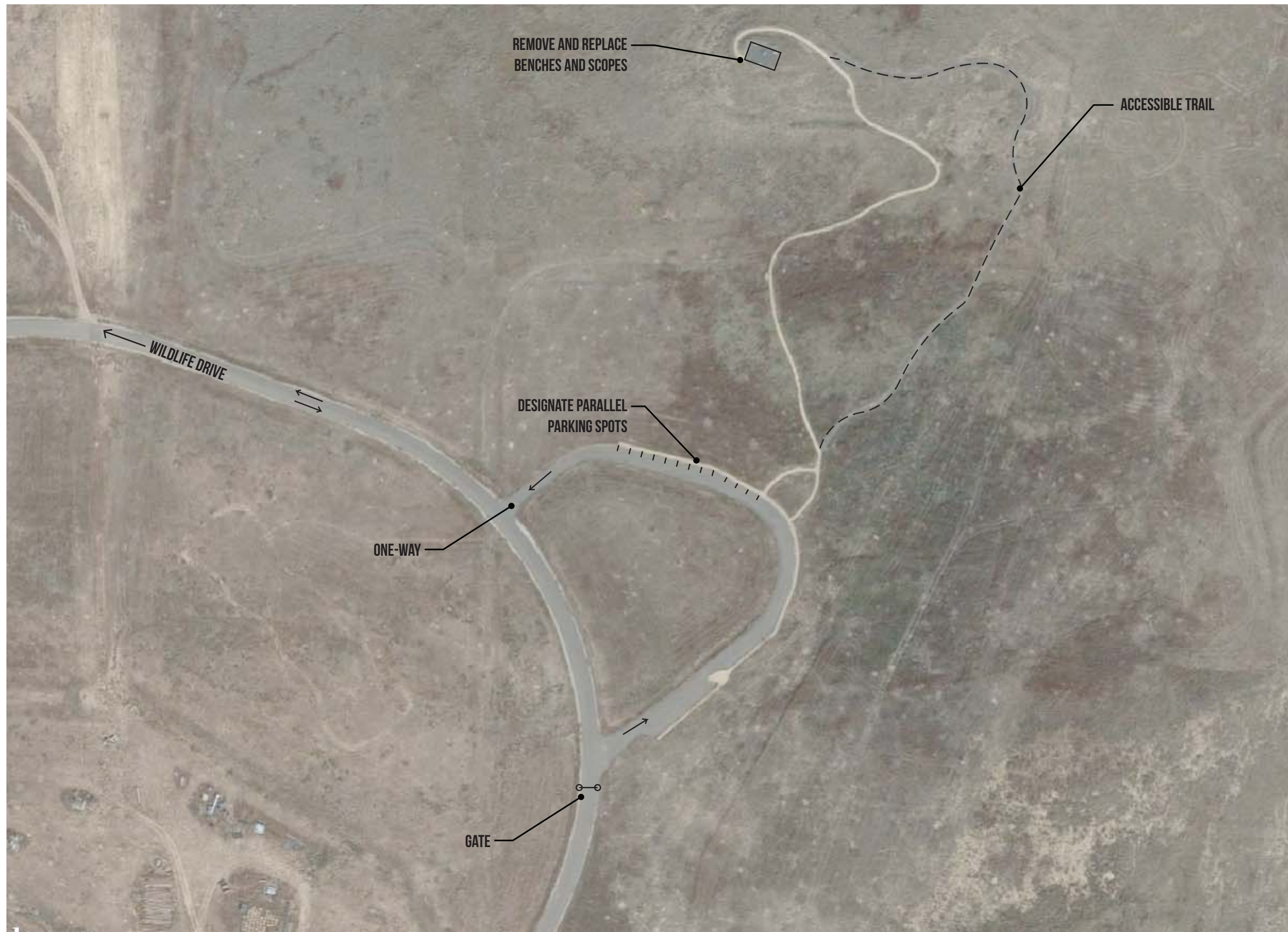
10 MORTAR RANGE OVERLOOK



Site Planning/Design Considerations:

The mortar range bunker along the Wildlife Drive will be converted into an overlook.

- Since the wildlife drive is a one-way road, it is recommend to position parking on the opposite side of the drive from the bunker, allowing for convenient access, unobstructed views and a safe crossing.
- In addition to car and accessible parking, two bus pull-offs are incorporated to accommodate guided tours of the refuge.
- A short, crusher fines trail will guide the visitor up to and around the bunker. Alongside the trail, an interpretive panel will explain the historic site. From the top of the knoll surrounding the bunker, visitors can take in expansive views of the refuge and the Front Range.
- The Mortar Range Overlook will also serve as a restroom stop along the Wildlife Drive.
- While the interior of the bunker is empty and concrete with narrow viewing blinds, staff felt the door should be sealed closed and interior access prohibited.



11

RATTLESNAKE OVERLOOK



Site Planning/Design Considerations:

Only slight modifications are suggested for the existing Rattlesnake Overlook.

- The overlook should be signed along the wildlife drive.
- Parallel parking spots can be designated through painting and will provide convenient access to the trail.
- Both the direct and the accessible trails are maintained.
- The existing benches and scopes are dilapidated and should be replaced. An interpretive panel could be used to interpret the view or other storylines. A shade structure would also increase visitor comforts in this exposed area.
- It is recommended to gate the access drive to the south in order to prevent visitors from driving into the operations area.

0 250 FT

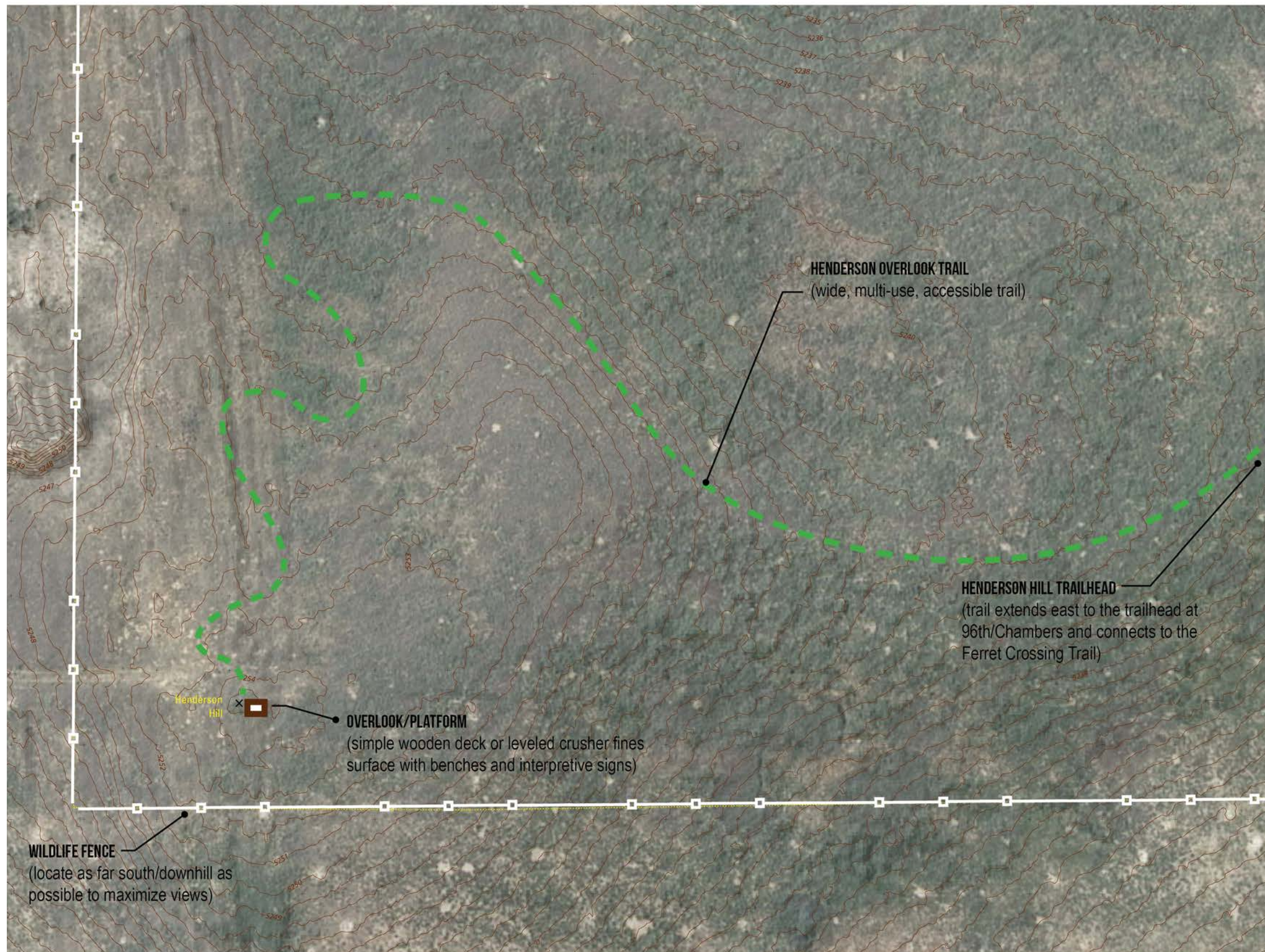


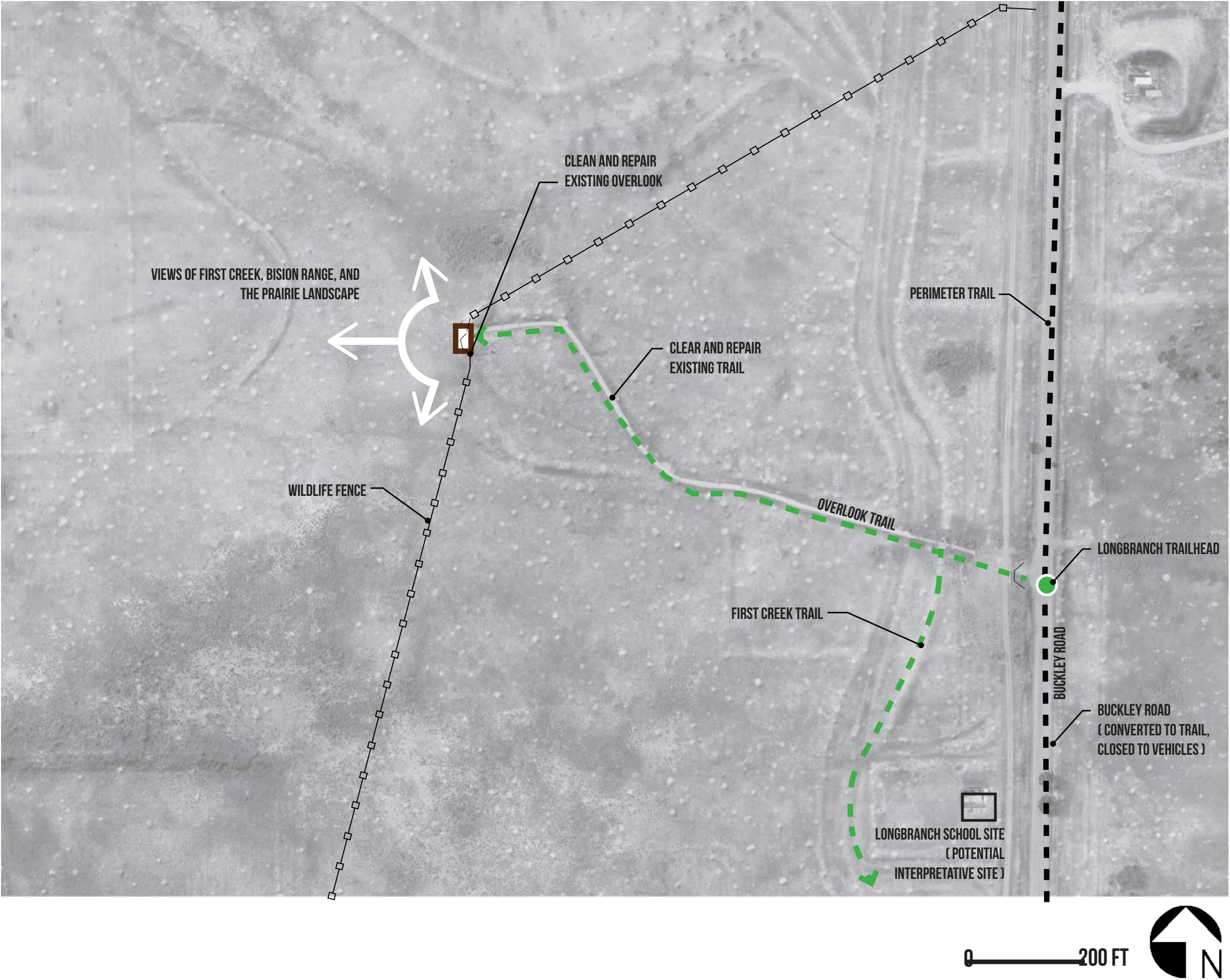
12 HENDERSON HILL OVERLOOK

Site Planning/Design Considerations:

The Henderson Hill Overlook will be accessed from the trailhead at 96th and Chambers. This trailhead will provide parking and access to the overlook trail as well as the ferret crossing trail.

- The trail from the trailhead to the overlook will be an accessible, multi-use trail. It will extend west from the parking area, contouring along the slope and then climb south up Henderson Hill to the overlook.
- The overlook is a destination, a trail terminus that will provide striking views over the refuge. The overlook will consist of a simple platform. This could be a wood deck or simply a leveled crusher fine area.
- A shade structure, seating, scope, and interpretive panels could be incorporated into the overlook design.
- When locating the wildlife fence position it as far down the Henderson Hill's western and southern slopes in order to maximize the views from the overlook.





13 FIRST CREEK OVERLOOK



Site Planning/Design Improvements:

Although it has not been used in years, the former Wildlife Watch area can be re-opened to visitors without too many alterations. The physical structure, re-named the First Creek Overlook, will need to be cleaned and repaired prior to re-opening the site to visitors. Located on the eastern edge of the Wildlife Fence, the overlook provides expansive views down to First Creek and across the bison range.

- The existing the Overlook Trail will continue to provide access to the overlook. The trail is in decent shape and just needs to be cleared.
- The Longbranch Trailhead along Buckley Road will provide access to the Overlook Trail as well as the First Creek trail. This more remote trailhead is likely to be accessed by cyclists, so it will be important to include bike racks at the trailhead.
- The visitor experience at the First Creek Overlook could be enhanced with interpretive media.

DESIGN GUIDELINES



DESIGN GUIDELINES

These guidelines offer recommendations for future design and site furnishing decisions within the Rocky Mountain Arsenal NWR. The guidelines will help ensure consistency among design elements across the Refuge (and the Complex) including furnishings, signs, and recreation facilities. By adhering to a unified palette of materials and color and uniform facilities and furnishings, the Service will present a more cohesive refuge appearance.

Intended to serve as a quick reference guide when faced with design and furnishing decisions, the guidelines include photographs and descriptions of existing elements at the Refuge (e.g., gates, restrooms, kiosks) that should continue to be used and offer suggestions for new types of furnishings that could be introduced over time (e.g., tables, shade).

MATERIALS AND COLORS

MATERIALS

To ensure a unified collection of furnishings and design elements throughout Rocky Mountain Arsenal NWR, features presented in these guidelines are limited to **wood**, **steel**, **stone**, and **concrete**.



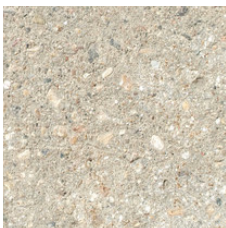
Wood: Copper Boron Azole (CBA) treated cedar or redwood.



Steel: Galvanized Corten and powder coated or painted steel (dark brown color)



Native Stone: Undressed rock, pavers, cut stone, and boulders

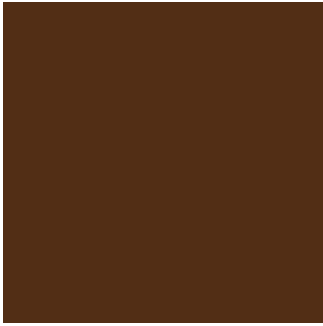


Concrete: Precast concrete and uncoated stained concrete



COLORS

Use colors found in the visitor center and other subtle shades and earthy tones that blend with the surrounding natural, prairie environment.



BROWN SPECIAL
FEDERAL STANDARD 10140



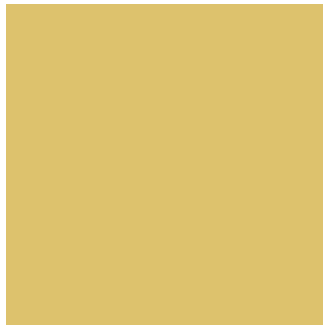
RED BROWN
FEDERAL STANDARD 20109



TAN
FEDERAL STANDARD 20260



COCOA BROWN
FEDERAL STANDARD 595 COLOR
FS 20059



BEIGE
FEDERAL STANDARD 23594



SAND
FEDERAL STANDARD 23722

TRAILS AND TRAILHEADS

TRAIL TYPES

The four types of trails planned for the refuge are outlined below.



8' ROCKY MOUNTAIN GREENWAY TRAIL

PRECAST CONCRETE AND UNCOATED STAINED CONCRETE

Rocky Mountain Greenway Trail: shared multi-use, concrete, tread width at a minimum of 8', grades <8.33%.



36" MAIN TRAILS

DECOMPOSED GRANITE, COMPACTED CRUSHER FINES

Primary routes providing access from trailheads into the refuge. Foot only (ADA), 36" tread width, crusher fines (decomposed granite or terracotta), grade <8.33%.



6' BOARDWALK

PRESSURE-TREATED TIMBER DECKING

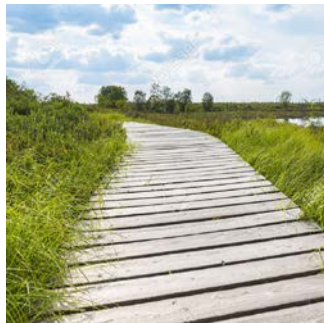
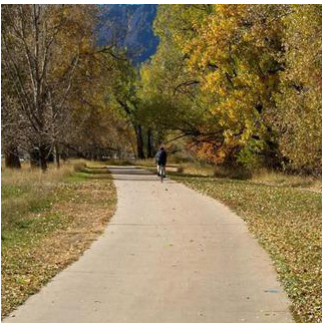
Wide, elevated, wooden boardwalk allows an accessible passage through wet and muddy areas.



18-36" SECONDARY TRAILS

COMPACTED DIRT

Offer more remote and quieter experiences of the refuge habitats. Narrower, soft surface trails. 18-36" tread width, compacted dirt.



GATES AND FENCING



GATES

Metal swing gates and split rail fencing used in tandem to close roads and designate administrative areas.

- 12' metal swing gate
- Space on either side of the gate for pedestrian/bike access
- 8" round rail fencing connects to gate
- Signs can be affixed to the fence



FENCING

Rail fences are used throughout the refuge to demarcate the boundary and to restrict access.

- 8" round rail post
- Where possible, pre-cut wood before treatment. Dry lumber after treatment to a moisture content of 19%
- Wood treated with non-arsenic, non-chromium preservatives
- Suggested preservative: Copper Boron Azole (CBA) is a water-based treatment free of arsenic and chromium. CBA is approved for above-ground and soil-contact applications and is considered part of the new generation of green building wood preservatives containing no EPA-listed hazardous constituents

INFORMATION KIOSK



INFORMATION KIOSK

One, two and three panel kiosk are positioned throughout the refuge to orient and inform visitors.

- The kiosk design on the right above is the new standard, that refuge staff will use throughout the Refuge as more interpretive and informational kiosks are needed
- These new kiosks have been built in the Refuge shop by staff and volunteers.
- Where possible, pre-cut wood before treatment. Dry lumber after treatment to a moisture content of 19%
- Suggested preservative: Copper Boron Azole (CBA) is a water-based treatment free of arsenic and chromium

RESTROOMS AND TRASH/RECYCLE RECEPTACLES

RESTROOMS: *Prefabricated Restrooms*



This existing, pre-fabricated restroom located in the visitor center parking area is the standard for future restroom facilities.

- Both single or double units are available
- The stone base of the facility is an attractive accent that ties to the visitor center
- When possible, make restrooms in new buildings open from the exterior in order to reduce the need for additional restroom facilities

TRASH/RECYCLE RECEPTACLES:

Standard, accessible bear-proof trash and recycling receptacle to match existing. Also rodent resistant, these trash and recycling receptacles are designed to keep out large and small animals.



RECYCLE BIN:

BearSaver - CE Series Single Recycling Enclosure - CE132-R

- 40 gallon capacity
- ADA compliant
- Animal resistant
- Heavy duty can enclosure with (1) loading chute.
- The top is detachable from the base for modular replacement if necessary

Container Color: Fir Green

Label: Recycle



TRASH BIN:

BearSaver - CE Series Single Trash Enclosure - CE140-CH

- 40 gallon capacity
- ADA Compliant
- Animal resistant
- Heavy duty can enclosure with (1) loading chute

Container Color: Forest Brown

Label: Trash

SOURCE:

<http://www.bearsaver.com/Bear-Resistant-CE-Series-Trash-Cans-and-Recycle-Bins/c537/>

OUTDOOR DRINKING FOUNTAINS

FREESTANDING FOUNTAINS



FREESTANDING, STONE AGGREGATE PEDESTAL FOUNTAIN:

- Manufacturer: Haws
- Model No: 3150
- Part #: 129699
- ADA Compliant



FREESTANDING, POWDER-COATED STEEL FOUNTAINS

- Manufacturer: ParknPool
- Model No: 75DF-005TS
- ADA compliant



FREESTANDING, POWDER-COATED STEEL FOUNTAINS

- Manufacturer: globalindustrial
- Model No: Elkay LK4420BF1U
- ADA compliant
- These bottle filling fountains are increasingly popular at outdoor recreation sites

WALL MOUNTED FOUNTAINS



CONCRETE WALL MOUNT DRINKING FOUNTAIN:

- Freeze Resistant ADA Accessible Wall Mount Drinking Fountain
- Manufacturer: globalindustrial.com
- Model No: WB240847GY

SOURCES:

<http://www.drinkingfountaindoctor.com/outdoor>

http://www.canterburyintl.com/fountain_losangeles.shtml

<http://www.globalindustrial.com/p/plumbing/drinking-fountains/outdoor/concrete-freeze-resistant-wall-mount-fountain-ada-accessible-gray-limestone-2>

BIKE RACKS



3-LOOP BIKE RACK:

- Manufacturer: Uline
- Model No: H-2543BL
- 10-gauge steel with powder coating, 2 3/8" diameter bar, concrete mounting hardware
- Available in gray, black, and green
- Also make a 5-loop rack

SOURCES:

<http://www.uline.com/Product/Detail/H-2543BL/Outdoor-Furniture/3-Loop-Wave-Style-Bike-Rack-5-Bike-Capacity-Black>

<http://www.belson.com/Heavy-Duty-Challenger-Wave-Bike-Racks>



WAVE BIKE RACK (multiple sizes):

- Manufacturer: Belson
- Model No: H36-7-P-SF / Heavy-Duty Challenger
- 2-3/8" O.D. tubing, various lengths up to 21-bike capacity
- Available in a variety of powder coat colors including a bronze

BOLLARDS

Wooden bollards are recommended for primary circulation routes where they will be highly visible. The steel bollards should only be used in utilitarian locations, outside of visitor's view.



Timber Bollard:

- Manufacturer: TimberForm
- Model No: 2561 Timber Bollard (8 x 8)
- Seasoned F.O.H.C. Douglas fir timber
- All timber bollards pressure treated after all fabrication completed
- Available for removable mounting on heights above 3'

SOURCES:

<http://site-furnishings.columbia-cascade.com/?PageData=baseproductsdetails&catid=5&catid2=34>



Removable Steel Bollard:

- Manufacturer: TimberForm
- Model No: 2190-RH
- Powder coated steel pipe bollard. Choose from powder coating colors (see page 3 for suitable colors)
- Supplied as standard with required (permanent) stainless steel ground insert hardware
- For use in utilitarian areas outside of primary visitor circulation routes

PICNIC TABLES

WOOD TABLES



A-FRAME PICNIC TABLE:

- Manufacturer: Columbia Cascade Company - TimberForm (Arbor Tables & Chairs)
- Model No: 2242-6
- Untreated Douglas Fir Timbers
- Accessible models available

METAL TABLES



STEEL TRADITIONAL PICNIC TABLE:

- Manufacturer: Belson Outdoors
- Model No: PTH-6PS
- 13 Gauge Perforated Steel Top/Seats.
- 2-3/8" O.D. Heavy-Duty Frame.
- Picnic tables are finished in either a gloss or textured polyester powder-coat finish and available in brown
- Accessible models available

WOOD & METAL TABLES



PICNIC TABLE:

- Manufacturer: Columbia Cascade Company - TimberForm (Arbor Tables & Chairs)
- Model No: 2162 Picnic Table with Seats (Wood Slats)
- Kin-dried Douglas fir slats
- Black powder-coated steel frame
- Accessible models available



PICNIC TABLE:

- Manufacturer: Belson Outdoors
- Model No: Park Ranger - PR-8WR
- Wood planks are either Redwood Stained or MCA Treated southern yellow pine with galvanized steel plate
- Accessible models available

SOURCE:

<http://site-furnishings.columbia-cascade.com/?PageData=baseproductsdetails&catid=4&catid2=98>

<http://www.belson.com/Park-Ranger-Picnic-Tables-Wood>

BENCHES



WOODEN BENCH:

- Manufacturer: TimberForm- Arbor Benches
- Model No: 2205-6-B Bench
- Seasoned F.O.H.C. Douglas fir timbers, Timbers treated
- Available with or without black powder-coated backrest supports
- Surface mount, for permanent or movable applications

WOODEN BENCH WITH ARMREST:

- Manufacturer: TimberForm- Arbor Benches
- Model No: 2210-6-P Bench
- Seasoned F.O.H.C. Douglas fir timbers, Timbers treated
- Surface mount for permanent applications

SOURCE:

<http://site-furnishings.columbia-cascade.com/?PageData=baseproductsdetails&catid=1&catid2=8>

RUSTIC BENCHES

Rustic, hand-built benches would be an inviting and appropriate seating option along trails and at other backcountry locations.

- Built from wood collected on the Refuge
- Given the simple construction, they lend themselves to volunteer projects
- Rustic, natural furnishings like these can double as nature play features at trailheads. For instance, several benches could be linked at angles to create a balance beam-like features.



SHADE STRUCTURES



SHADED SEATING AREA

Stand alone shade structure would be suited for areas where visitors congregate such as the Lake Mary Learning Center. A wood roof deck or a metal roof that matches surrounding building or blends with the landscape is recommended.

Source:

<https://www.poligon.com/Wood/Products.htm>

SAIL SHADES / FABRIC SHADE STRUCTURES

Sails and fabric shade structures could be used to shade nature play features and other areas where families congregate. Their distinctive shape will attract attention on the prairie landscape. They are built to withstand strong winds and come in wide variety of color.

Sources:

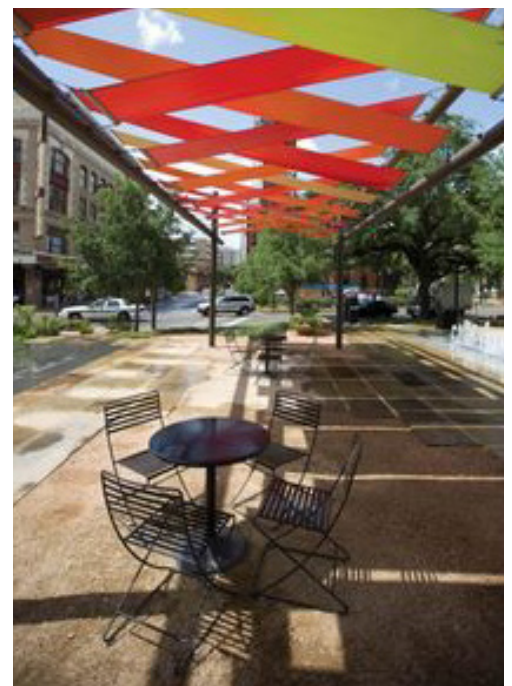
<http://shadesystemsinc.com/sails/>

<https://www.poligon.com/Fabric/sails.html>



WOODEN ARBOR

Consider incorporating wooden arbors into new building design for the Lake Mary Learning Center. The arbor would increase the building's usable square footage by creating a shaded space for outdoor gatherings and activities.



NATURE PLAY

During the site planning process, refuge staff voiced support for incorporating nature play features into the visitor use areas at Rocky Mountain Arsenal NWR. In particular, they felt that nature play features at the trailheads along the refuge boundary would be an appropriate use that would draw in neighboring residents and provide a convenient means for local families to experience the refuge.

Nature play in tandem with short trail loops at the trailheads can be designed to provide youth and their families with an easily accessible, fun refuge experience. Over time, these refuge visitors may venture a bit further into the refuge and/or take advantage of other wildlife dependent recreation and programming opportunities.

In this section of the design guidelines, we have compiled examples of nature play features. The features are simple, yet fun for youth. They are made from natural materials. Given their simple construction, many of the nature play elements could likely be built by refuge staff and volunteers.

As described in the graphic below, the nature play features would be designed to increase visitors' comfort in nature and these playful elements would provide the first step in a progression in which area youth participate in refuge programming, outreach, and wildlife recreation and move from *playing* and *learning* in nature to *exploring* the refuge independently and eventually *growing* into natural resource stewards.

PROVIDE
OPPORTUNITIES
TO...
GROW
EXPLORE
LEARN
PLAY

BECOME AN
ACTIVE
PARTICIPANT IN
THE PROTECTION
OF NATURAL
RESOURCES

DEVELOP SELF IDENTITY
THROUGH NATURE

DEVELOP RESPECT FOR THE
NATURAL WORLD THROUGH
KNOWLEDGE AND
UNDERSTANDING

DEVELOP IMAGINATION & A SENSE OF
WONDER FOR THE NATURAL WORLD

COMFORT IN NATURE



Stewardship projects and landscapes that encourage participation in the conservation and management of natural and cultural resources.



Natural landscapes open to discovery by individuals or groups.

Skill building and learning opportunities that teach the skill sets necessary to responsibly interact with the natural world and provide visitors with the knowledge needed to form a deeper attachment to place.



Features designed to encourage the physicality, agility, and endurance needed to experience the natural world.

NATURE PLAY

DESIGNING / ENGINEERING / BUILDING

Collect natural materials (e.g., rounds, branches, twigs, stumps, pine cones) and make them available for kids to arrange as they see fit.



NATURE PLAY

EXPLORING IN AND UNDER

Build simple structures from natural materials that kids can enter and travel through. Branches, twigs, willows, stones and hollowed Cottonwood trunks are all appropriate building materials for tunnels and caves.



NATURE PLAY

CLIMBING

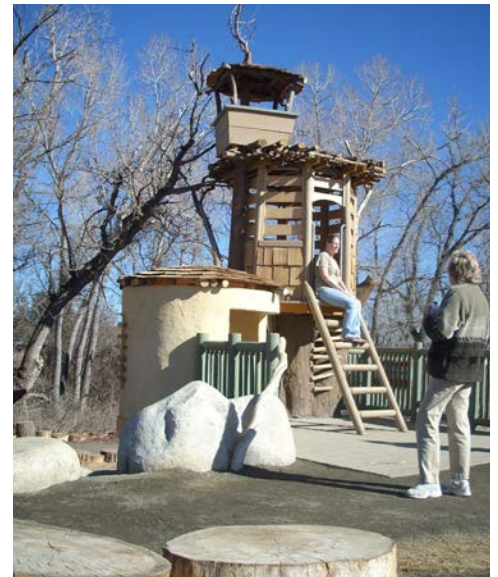
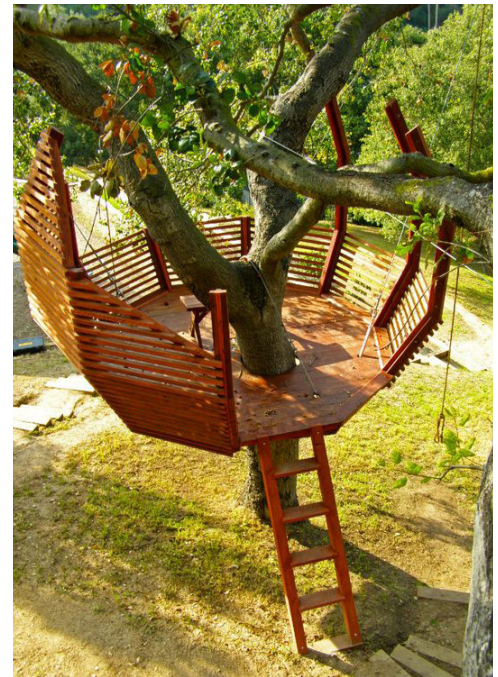
Using natural materials create steps, skinnies, and climbing structures. Given that kids may climb high and jump off, make sure to use safe surfacing (e.g., mulch, bark chips) to cushion falls.



NATURE PLAY

VIEWING PLATFORMS

Overlooks and viewing platforms along the Refuge trails can feature playful designs. These structures offer unique opportunities for nature exploration and natural immersion.



NATURE PLAY

LARGER DESIGNED NATURE PLAYSCAPES

While the trailheads lend themselves to a one to two simple nature play features, there could be a much more robust nature playscape at the Lake Mary Learning Center. It is recommended that the Service hire a landscape architect to design this nature playscape and adhere to the practice of using mainly natural materials.



SIGN PLAN



SIGN PLAN

This section of the General Development Plan, offers suggestion for way finding and sign design throughout the refuge. Like the design guidelines, the sign plan recommends a uniform palette of sign styles and layouts in order to clearly direct visitors and to ensure a more cohesive refuge appearance. Additionally, the plan proposes information and content to include on the signs in order to ensure visitors are well informed and can clearly navigate the refuge.

The focus of this sign plan is on **way finding signs** that will direct, orient and inform visitors. Therefore, this plan does not address interpretive signs nor traffic safety signs.

The sign plan progresses from general guidelines to specific content for signs. First recommending general way finding improvements and then offering suggestions for where signs are needed and what type of content they should feature.

WAY FINDING RECOMMENDATION #1: MINIMIZE DECISION VISITORS NEED TO MAKE

Where possible, reduce the number of decisions points a refuge visitor will encounter by simplifying both pedestrian and vehicular circulation. Similarly, pare down the number of choices presented to visitors on signs.

EXISTING SIGNS



RECOMMENDED IMPROVEMENTS

- The directional sign can be simplified to offer visitors only two options - left to the Wildlife Drive or right to the Refuge Exit. Maps and subsequent signs will then direct visitors to specific trails, the lakes, the Lake Mary Learning Center and the operations area.
- Consider relocating the regulation sign to the entrance drive. At the entrance, it will capture the attention of and inform all visitors.
- Being highly visual, the regulations sign is clear, however, with all its “closed to” graphics its not the most welcoming. A smaller version of this sign should be incorporated into trailhead signs.



WAY FINDING RECOMMENDATION #2: SIMPLIFY INFORMATION

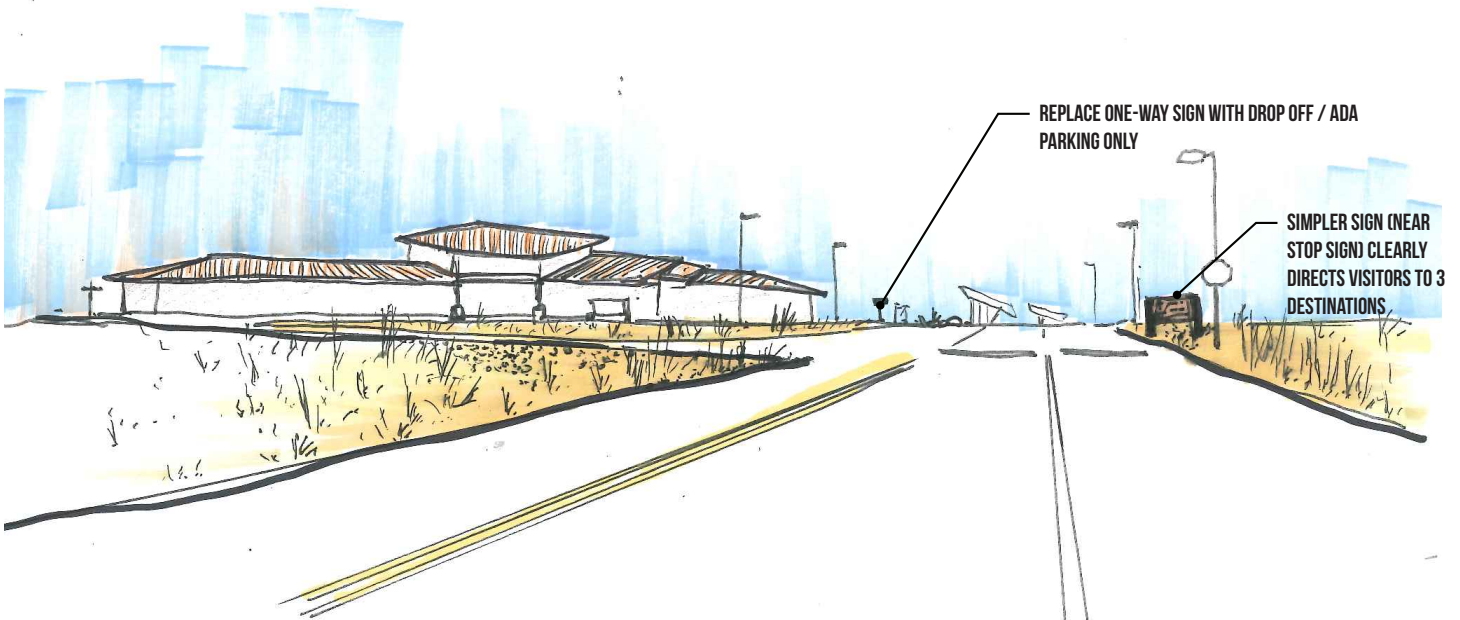
Throughout the refuge look for opportunities to simplify way finding information and reduce the number of signs in order to avoid over signing and clutter the landscape. Less information on a sign can be absorbed more quickly (at a glance) by visitors and leads to less confusion and deliberation. When multiple signs are needed, try to group them in locations where you have visitors' attention (e.g., at an intersection).

EXISTING SIGNS



RECOMMENDED IMPROVEMENTS

- Simplify the information on the directional sign. Upon entry to the visitor center, visitors only need to be directed to the visitor center parking, the wildlife drive, and the refuge headquarters. While the visitor center hours are important to communicate, the refuge hours will have been made clear at the entrance and don't need to be repeated on this sign.
- The simplified sign, will be more easily read by arriving visitors and can be moved back and clustered near the stop sign.
- At the visitor center entrance, one sign (in place of the one-way sign) can be used to make it clear that the pull up drive is only for drop offs and accessible parking.



WAY FINDING RECOMMENDATION #3: WELCOME AND ORIENT VISITORS

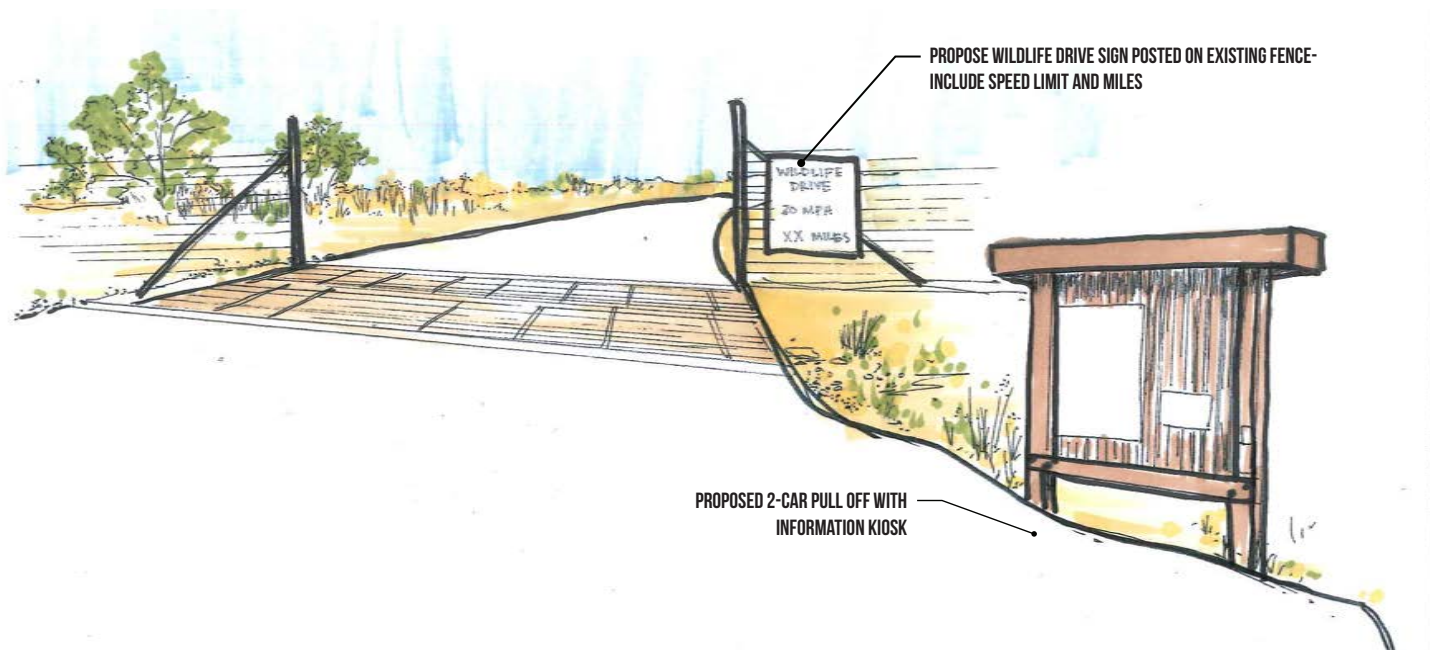
The refuge is big and feels remote, be sure to use signs to orient and clearly direct visitors. Additionally, use signs to direct and welcome visitors to the places where you want them to experience and explore.

LACK OF SIGNS



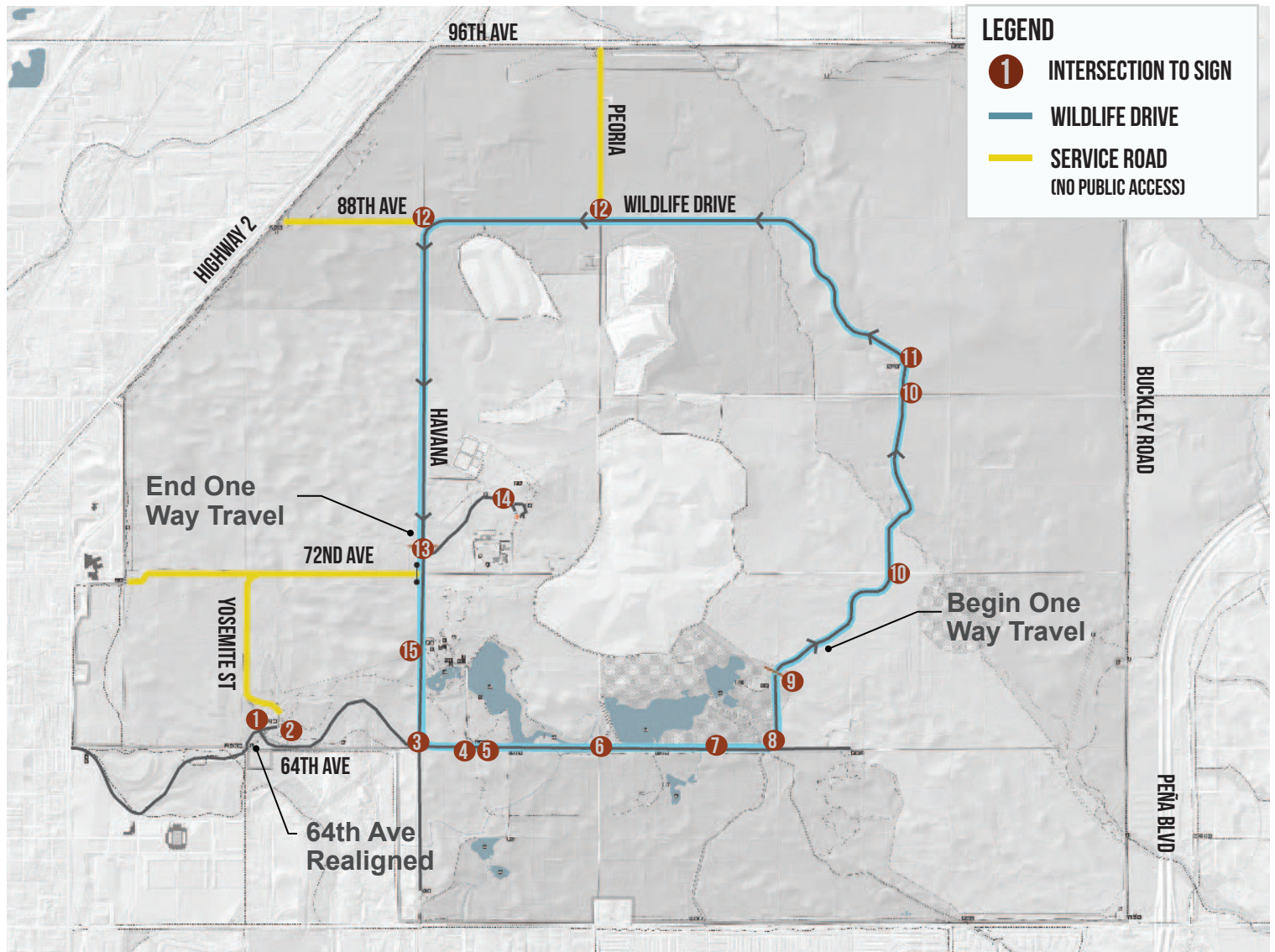
RECOMMENDED IMPROVEMENTS

- Gates and cattle guards can be intimidating to visitors. Assure visitors that they are on the wildlife drive with a simple wildlife drive marker affixed to the fence. The speed limit and length of the route could also be communicated here.
- At this point, the wildlife drive brings visitors into the more remote reaches of the refuge. Therefore, this is a good location for an information kiosk where a wildlife drive map and brochure are made available. On this kiosk, regulations could be reinforced.
- Some positive messaging (e.g., “happy exploring”, “keep an eye out for bison and other wildlife”, “enjoy the wide open views”) would help visitors feel welcome.



WILDLIFE DRIVE INTERSECTIONS AND SIGN PLANNING

The Intersection Map below depicts intersections along the Wildlife Drive that require new or improved signs in order to ensure wayfinding is clear for refuge visitors. For each intersection, sign content is recommended. In addition to the signed intersections, visitors will encounter small, mile marker signs along the Wildlife Drive. It is assumed that the designs for signs along the Wildlife Drive and throughout the refuge will adhere to the NWR Sign Guidelines.





1. Entrance Drive / Introducing the Wildlife Drive

- To ensure clear wayfinding for visitors as they enter the refuge, sign the realigned road that leads east, directly to the Wildlife Drive and bisect the visitor center. The sign at this intersection should direct visitors straight to the Visitor Center and Headquarters, right to Wildlife Drive and Lakes Area, and right to the Operational Area
- Consider using this sign to introduce the Wildlife Drive icon (the car symbol) that has already been incorporated into the Wildlife Drive mile markers. In general, use of icons increases the accessibility of the wayfinding information.

2. Visitor Center Drive & 64th Ave

- At the T-intersection on the southside of 64th Avenue direct visitors to the left (Wildlife Drive, Lakes Area) and Left (Refuge Exit). Consider mounting this sign on the fence
- Also mark this intersection so drivers heading east and west on 64th Avenue are clear on the direction to the visitor center and the refuge exit.



3. 64th Ave & Havana

- Recommend moving existing sign that is now positioned along the curve in the road up closer to the stop sign. Repositioning this sign will more clearly orient visitors heading east along 64th Ave. The sign's messaging could be simplified to: straight to Wildlife Drive and left to the Lakes Area.
- Clearly mark this intersection as the start of the wildlife drive. Existing wildlife drive sign (on the east side of the intersection along 64th Ave) could be enlarged
- This intersection will also need to be signed for visitors heading south on Havana. Sign should indicate: left to Wildlife Drive and a right to Visitor Center/Refuge Exit.



4. 64th Avenue & Juliet & Prairie Trail

- Consider if and where you want to encourage parking for visitors looking to stop and hike the Prairie Trail or to walk/bike the Dam Road over to the Lakes Area. For instance, a sign(s) with a parking and trail symbol could direct east and west-bound travelers along 64th Ave north onto Juliet Rd where they can park and access the trail(s).
- Since the Prairie Trail crosses 64th Ave here it is recommended to use a trail crossing sign to alert drivers.
- Consider placing a parking sign on either side of Juliet Road (if you'd like to encourage people to park here rather than along 64th).



5. 64th Avenue & Woodland Trail

- Since the Woodland Trail crosses 64th Ave here it is recommended to use a trail crossing sign to alert drivers to the likelihood of pedestrians or bikes and inform visitors about a trail opportunity.

6. 64th Avenue & Peoria

- If you hope to encourage visitors to park off of 64th Avenue in the large open area in front of the Peoria gate on the north side of 64th, indicate this with a parking sign. A parking sign located on either side of 64th would point north directing visitors into the parking area.
- Within the parking area, add a sign on the gate or fence that indicates what trail systems and destinations the gated road ties into.



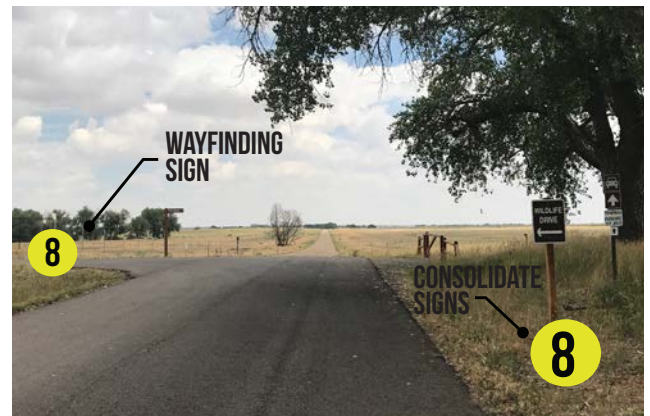


7. 64th Avenue & Lower Derby Overlook

- Replace the existing Wildlife Drive symbol with a combined Parking/Wildlife Drive/Trail sign located along 64th Ave to alert visitors to the destination and recreation opportunities. Position one of these signs on both sides of 64th Ave to orient drivers heading east and west.
- Mark both sides of 64th Ave with a trail crossing sign, to alert drivers headed to increased pedestrian activity. The content of these two signs (trail crossing and parking/trail) could be combined on 1 sign post.

8. 64th Avenue & Potomac

- Consolidate existing signs. One sign could direct visitors straight ahead to the trailhead and to the left to follow the Wildlife Drive.
- A similar sign should be located on the northwest corner of the intersection to direct visitors heading south along the Wildlife Drive to the trailhead to the east and the Wildlife Drive/Refuge Exit to the west.



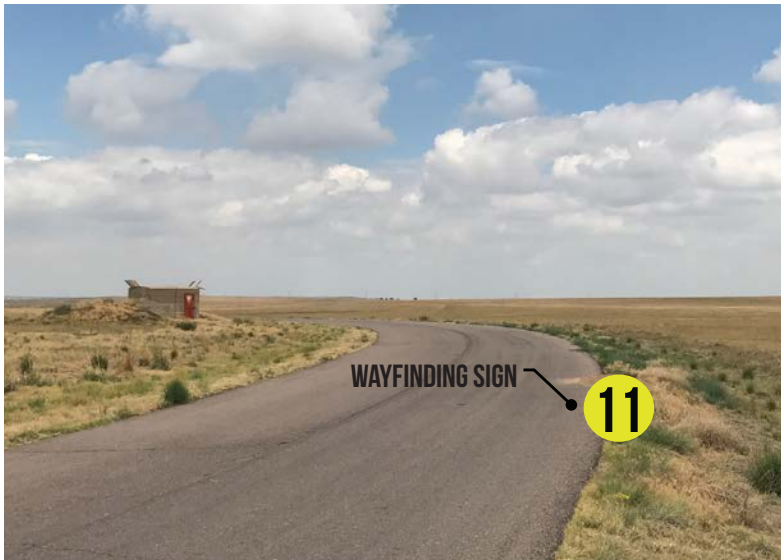
9. Beginning of One-Way Wildlife Drive

- Existing signs are clear and informative.
- The wooden rail fence remnant is effective as a visible, yet unobtrusive sign post. This sign design could be used along 64th and other sections of the Wildlife Drive where staff wants to alert visitors to destinations and recreation opportunities.

10. Wildlife Drive & 72nd and 80th

- These two intersections with their gated side roads (72nd and 80th) and street signs are clear and do not require additional signs.





11. Wildlife Drive & Bunker Interpretive Site

- A sign will be required to alert drivers to the Bunker pull-off and interpretive site.
- The low-profile rail fence remnant with a sign attached to it it could be used at this location. The sign could read "Historic Site Ahead" or be more specific and name the site.
- A trail crossing sign is also recommended since the pull-off is planned for the north side of the road and pedestrains will be crossing the road to visit the bunker.

12. Wildlife Drive & Peoria and 88th

- Wayfinding is clear at two intersections. They do not require additional signs.



13. Wildlife Drive & Rattlesnake Hill

- Post a wayfinding sign along the Wildlife Drive alerting drivers to the Rattlesnake Hill destination. Sign could include a left arrow with the parking/trailhead icon. This could be another location where the low-profile rail fence remnant with a sign attached to it could be used.
- Include a similar sign directing the visitor off of the Rattlesnake Hill Road and into the parking drive. This sign would simply indicate: left to parking/trailhead.
- After hiking Rattlesnake Hill, a departing visitor may be disoriented. Another wayfidning sign could be positioned at the Wildlife Drive intersection to direct the exiting visitor left to Wildlife Drive/Lakes Area/Refuge Exit.

14. Havana & 72nd Ave

- Post a wayfinding sign on Havana to orient visitors to the continuation of the Wildlife Drive and to direct them to the Lakes Area and Refuge Exit.
- Since visitors may be accustomed to traveling west on 72nd Ave to exit the refuge, it will be important to sign 72nd Ave as “administrative access only” or the more clearly “no visitor access”.
- Also, a sign will be needed for visitors heading north on Havana directing them to Rattlesnake Hill (parking/trailhead ahead). This sign could also include direction to the Operations Area.



15. Lakes Area / Contact Station

- When developed the new Education Center and the Lakes Area warrants a formal and attractive welcome sign. Look to the sign in front of the Visitor Center for design cues.
- The welcome sign can be complemented by a wayfinding sign alerting travelers to the Lakes Areas and its amenities (education center, trails, lakes, restrooms, parking).
- It will be important that visitors traveling both north and south on Havana are clearly oriented to the Education Center and Lakes Area.
- As the greenway gains popularity, it is likely that more and more visitors will arrive at the Lakes Area via trails and on bikes. Ensure that the trail users are also well oriented and that trail-side signs clearly direct them to the Lakes Area facilities (lakes, trails, restrooms, education center)

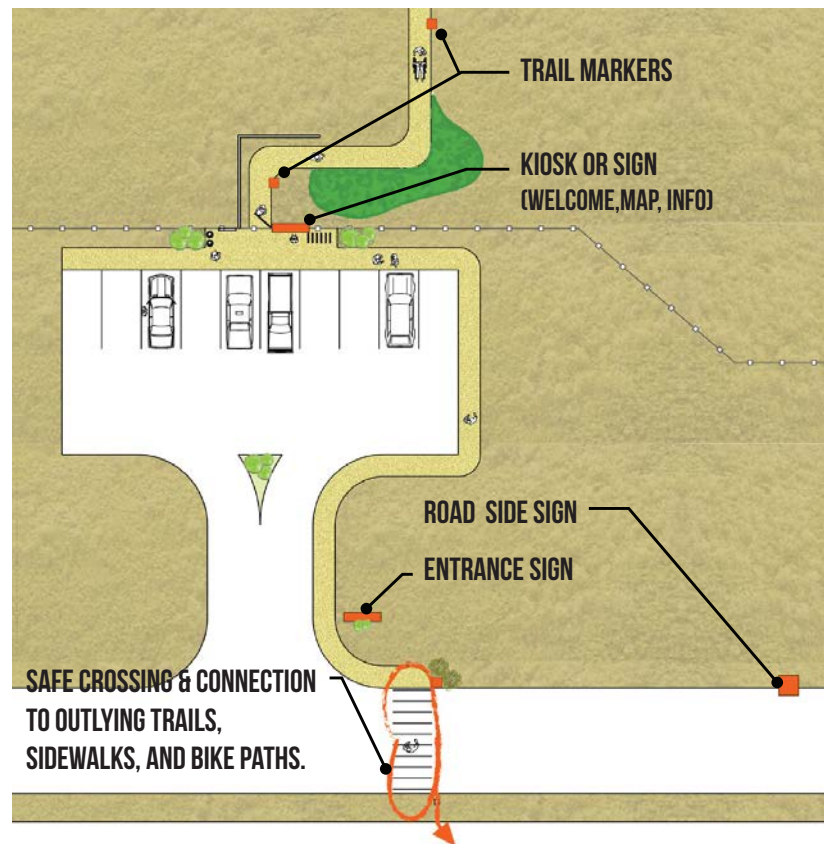
SIGNING THE NEW TRAILHEADS ALONG THE REFUGE BOUNDARY

New perimeter trailheads that will be developed along the refuge's boundary will require new or improved signs in order to raise the visibility of the refuge, ensure visitors feel welcome, and inform visitors about what they can see and do at the access points. A combination of road side signs, information kiosks, and trail markers should be used to guide visitors to the trailhead, inform them, and lead them down the trail and into the refuge. In particular, the two trailheads along 56th Avenue and the Henderson Hill Trailhead along 96th Avenue will require both street signs and internal refuge signs to orient and direct visitors. The graphic below offers suggestion on how these three trailheads could be signed.

A similar, but smaller system of signs can be incorporated into the new trailheads along the perimeter that do not include a parking lot. These trailheads will typically just entail a break in the fence and a trail, therefore, it is important to incorporate signs that make it clear to the visitor that they are entering a national wildlife refuge. At these trailheads, there should be a sign map or marker that orients visitors to the trail system they are entering.

Trailhead Signs

- Use a road sign (along 56th and 96th avenue) to alert visitors to the refuge and the trailhead. These signs should inform both east and westbound drivers.
- Position a Refuge/Trailhead sign at the entrance of the parking area. This sign will help make it clear to visitors that they are entering a refuge.
- Within the trailhead, signs can be free standing (sign posts, kiosks) or incorporated into the metal fence or wood rail fence. Make sure the signs express a welcoming or "come explore" tone, so its clear that people are invited into the trailhead and refuge.
- Incorporate a simple map that shows the visitor where they are in relation to the whole refuge and what trails and destinations they can access from their current location. Also explain any pertinent rules (e.g. hours of operation, permitted trail uses).
- Work with partners to clearly connect the trailheads to outlying regional trails, to tie into safe routes on residential streets, and to build safe crossings (e.g., signaled, over or underpass, crossing signals). This may entail an additional offsite trail marker, directing regional trail users to the refuge's trail system.
- Use trail markers or small signs spaced at 1/4 -1/2 mile intervals to reassure and direct visitors along the trail that leads from the trailhead.



APPENDIX A: COMMUNITY INPUT on 56th AVENUE TRAILHEADS

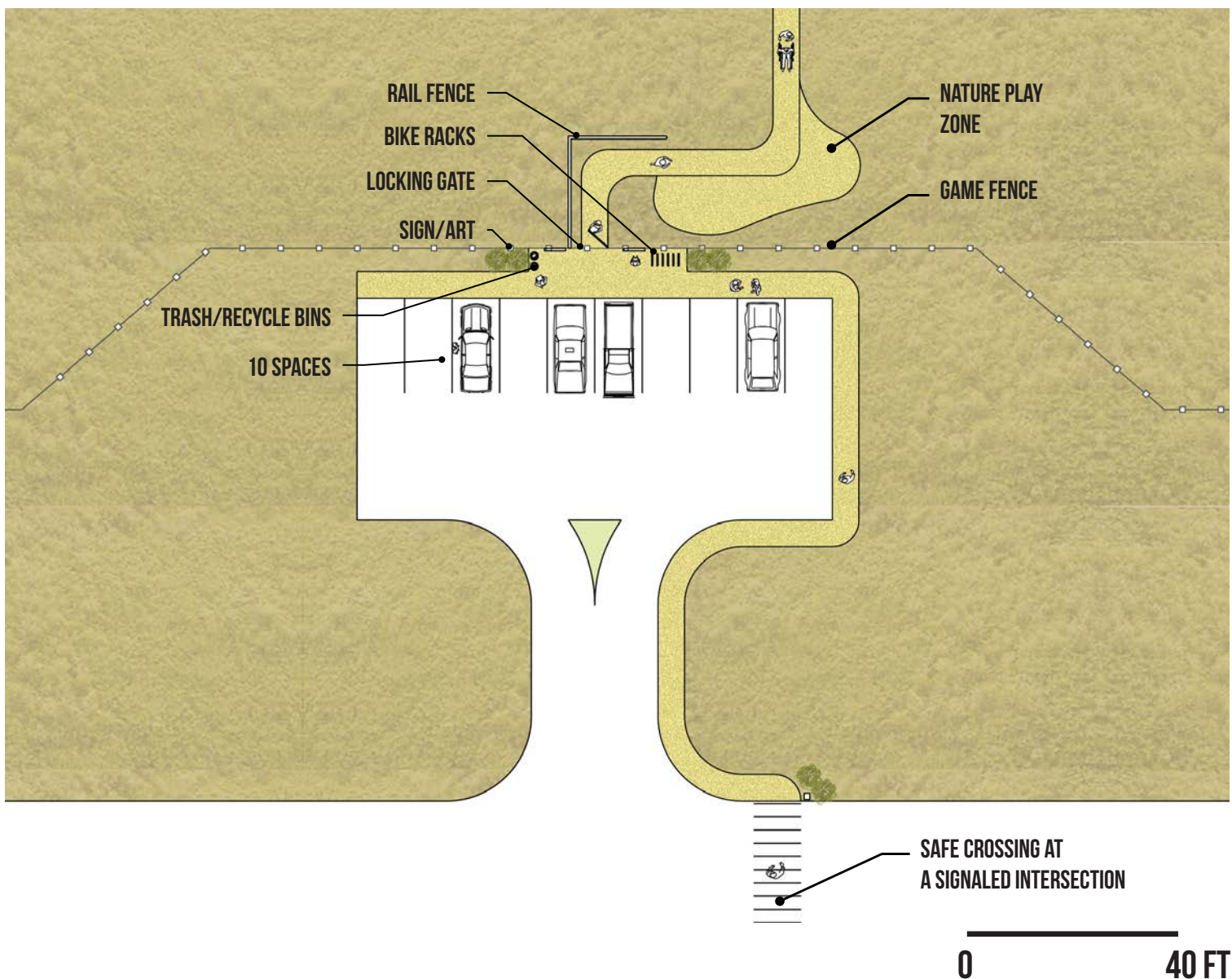


NEW TRAILHEADS FOR ROCKY MOUNTAIN ARSENAL NWR (ALONG 56TH AVENUE)

The CCP calls for 2 new trailheads located along Rocky Mountain Arsenal National Wildlife Refuge's (Rocky Mountain Arsenal NWR) southern perimeter which are slated to be designed in 2017 and built in 2018. These two trailheads along 56th Avenue will provide parking and links to the refuge's trail system for both pedestrians and cyclists.

Unlike their rural counterparts, urban refuges like Rocky Mountain Arsenal NWR have the unique circumstance of being situated near people who may never have had the opportunity to visit a wildlife refuge. Given its location within a metropolitan area, Rocky Mountain Arsenal NWR is poised to draw many more urban and non-traditional visitors *if* its facilities and visitor environments are designed and developed with the needs and comforts of urban and diverse audiences in mind.

Committed to designing with future visitors and the refuge's urban context in mind, the refuge staff and planning team solicited input from adjacent communities and asked them what type of trailhead design would be most welcoming and inviting to them. This report summarizes the community input that was collected and is intended to build on the conceptual trailhead design developed for the Rocky Mountain Arsenal NWR Development Plan (below). This report will be shared with Federal Highways who will be designing and building the trailheads along 56th Avenue.



Community Input

To improve opportunities for refuge's neighbors and other urban residents to find, enjoy, and appreciate nature at the Rocky Mountain Arsenal NWR, it is suggested that trailhead designers take into account the following community input. These responses were gleaned during community outreach centered around the question, *"What type of trailheads along 56th Avenue would welcome neighbors and encourage more of them to visit and enjoy the Refuge?"* The numbers next to some of the responses, reflect how many participants at the Go Wild events the planning team attended (in Commerce City and Montbello) voiced support for a specific trailhead feature.

General Trailhead Layout & Safety

- Being with family and friends is important. Ensure that the trailhead is designed to be child and family friendly.
- Need to strike a balance between an urban and manicured feel at the trailhead and a more typical, wild and natural appearance. If the trailhead is too natural looking, it will look uncared for and overgrown and will be less attractive to visitors while also potentially inviting littering and unwanted uses.
- Make sure there are safe crossings along 56th avenue so the trailheads are convenient and safe to get to.
- Traffic lights at Uvalda and Crown
- Its great that these trailheads will be in walking and biking distance for lots of neighbors, just make sure they are safe to get to.

Desired Amenities

It was suggested that signs and art can be used to draw potential visitors and neighbors into the trailhead. Community members also stressed the importance of making sure the trailhead is clean, tidy, and welcoming and offers facilities that make visitors feel comfortable (e.g., shade, water, restroom) in the natural setting.

- Nature play features (36)
- Bathroom facilities (19)
- Shade (trees or shade structures) (19)
- Water fountains (14)
- Street art/Sculpture/Art (14)
- Seating (12)
- Tables/Gathering area (9)
- Decoration of the perimeter fence (4)
- Rocky labyrinth and meditation bench
- Campground
- Well maintained trees and plantings.

Outreach & Wayfinding

- Use road signs to make sure the trailheads are easy to find and it is clear that they are open for visitors.
- Need better maps. Easy to read maps that explain where access points are, how to get there, and info on the trails that lead from the trailheads.
- Signs and waypoints along the trails from the trailhead. Reassure visitors they are the right trail, tell them where they are headed.
- Advertise the wildlife that can be seen at the refuge more.
- Improve communication with community residents about refuge events and activities. Create and distribute more web-based and social media content (Facebook and SnapChat were mentioned specifically). Additionally, post flyers advertising activities around town (e.g., recreation centers, coffee shops, places of worship).
- Partner with clubs and other existing organizations in order to invite more community residents to enjoy the refuge.
- Consider making one of the trailheads a Pokemon stop or develop a SnapChat filter to promote what there is to see and do on the refuge including these new trailheads.

Potential Learning Opportunities & Programming for the Trailhead

During outreach, interest was expressed in interpretive information. Additionally, many recommended hosting programs and activities at the trailheads in order to draw more people out and increase the exposure of the refuge. There were also requests for ongoing activities versus a one-time gathering or activity at the trailhead.

- Guided bike rides (14)
- Interpretation (14)
- Share stories about native american culture (12), military history (4) and the neighborhood's culture (2)
- Explain the clean-up story
- Outdoor exercise/workouts (9)
- Guided hikes (8)
- Nature arts-n-crafts (8)
- Youth science programs (6)
- Volunteer projects (6)
- History/Culture talks (5)
- Weave both history and culture into talks
- Nature talks (4)
- Outdoor skill building (1)
- Programs/walks for seniors
- Live bald eagles and other wildlife to see and learn about



Trailhead Names

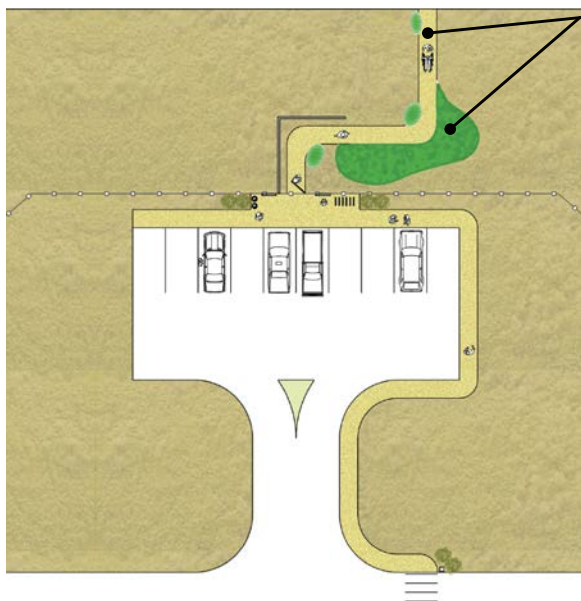
Generally, we received favorable responses to the idea of theming the trailhead design based on wildlife and/or nature. We asked participants what refuge wildlife they would like to name the 56th Avenue trails after (if any). We received support for the following wildlife-inspired trailhead names.

- Bald eagle (12)
- Black-footed ferret (9)
- Bison (5)
- Bull snake (5)
- Snapping turtle (4)
- Western meadowlark (4)
- Coyote (4)
- Black-tailed prairie dog (4)
- American kestrel (3)
- Burrowing owl (3)
- Mule deer (2)
- Ferruginous hawk (1)
- Red-winged blackbird



Programming for the new trailheads could range from nature arts-n-crafts to youth science programs.

NATURE PLAY



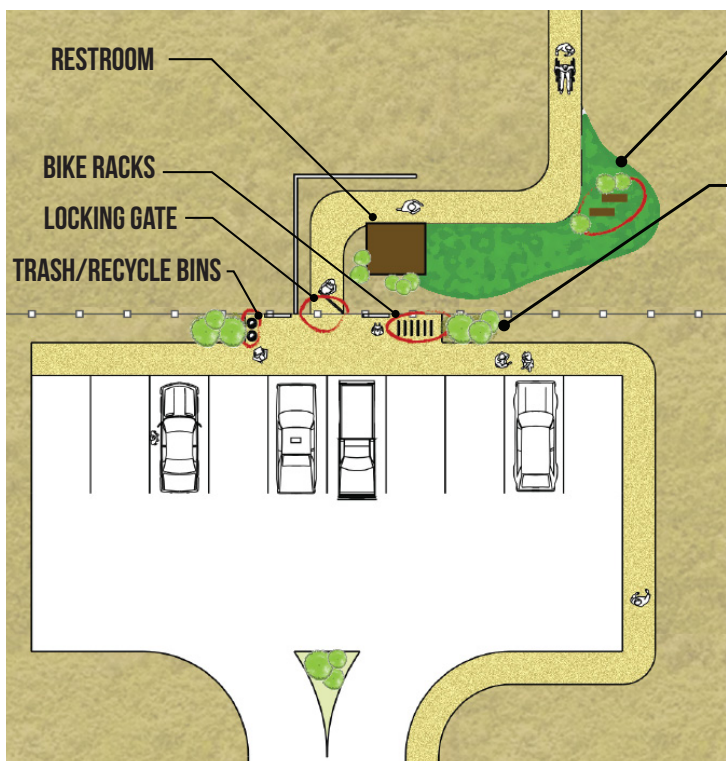
DISTRIBUTE SMALL NATURE PLAY FEATURES ALONG THE TRAIL AND/OR BUILD A LARGER, CONTAINED NATURE PLAY AREA.

Design Considerations:

- Consider either one nature play area with a handful of features or several smaller features to climb on/under lining the trail.
- Ensure some of the nature play features are visible from the parking area in order to draw visitors in.
- Place nature play features within the fence.
- Nature play features like stumps and raised planks (skinnies) can be designed to double as trail-side seating.
- Consider adding a shade structure and/or seating to make the experience for children and their parents more comfortable.



TRAILHEAD AMENITIES



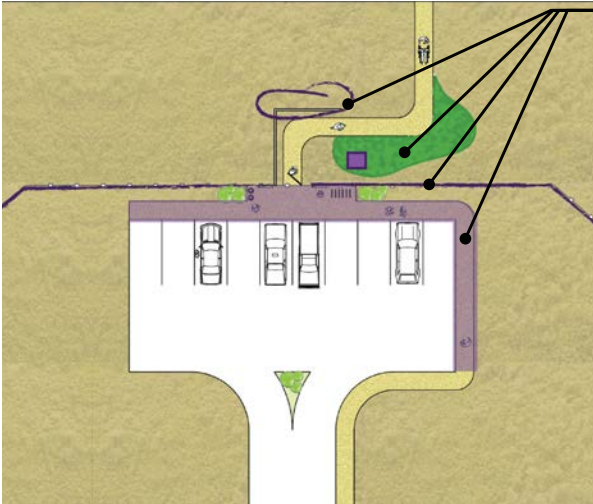
INCORPORATE TABLES AND/OR SHADE (E.G., TREES OR A STRUCTURE) INTO THE NATURE PLAY AREA.

USE NATIVE, YET MANICURED LANDSCAPING THROUGHOUT TO GIVE THE TRAILHEAD A WELL-KEPT, ATTRACTIVE FEEL.

Design Considerations:

- On the parking lot side of the trailhead, use more urban/formal finishes (e.g., landscaping, paved/concrete surfacing) to give the trailhead a cared for and safe appearance. At minimum, this area should include a trash/recycle receptacle, wayfinding sign, locking gate, and a bike rack.
- Visitor comfort at the trailhead will be increased with shade (e.g., trees or shade structure), water (e.g., fountain), restroom facility, and seating.
- For many, the trailhead may be a destination in itself and they may not venture down the trail. Consider incorporating a table or set of benches just inside the fence in order to accommodate families and small groups.

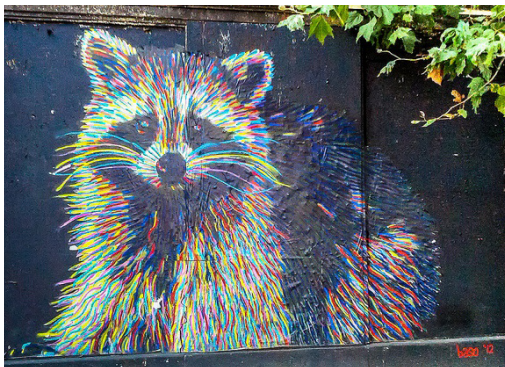
ART



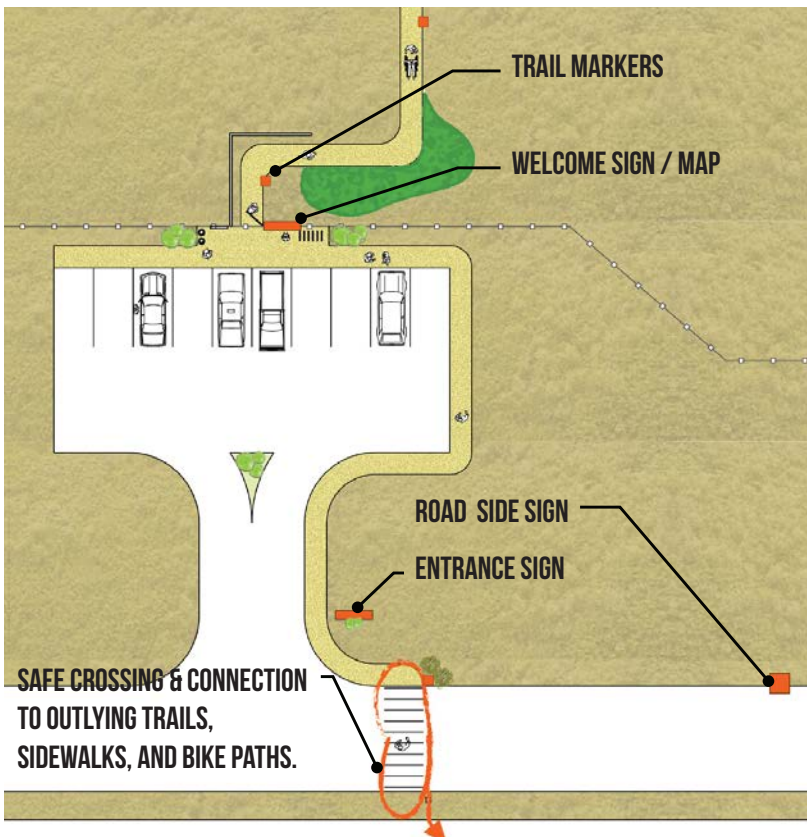
POTENTIAL LOCATIONS/SURFACES FOR NATURE AND WILDLIFE-INSPIRED ART.

Design Considerations:

- Art can be used to draw both attention and visitors to the trailhead and to promote the wildlife and nature experiences the refuge offers.
- Art could be incorporated into multiple places at the refuge including the perimeter fence and interior fencing (e.g., weavings, murals) as well as in the surfacing (e.g., stamped tracks or patterns). Additionally, larger and interactive environmental art pieces could be incorporated into the nature play area.
- Partnership with the local high schools' art programs and with Denver-based street artists were suggested.



SIGNS AND SAFETY



Design Considerations:

- Use signs including a road sign along 56th Avenue and a trailhead/RMANWR sign along the entrance to clearly identify the trailhead as part of the refuge. Make sure the signs express a welcoming or "come explore" tone, so its clear that people are invited into the trailhead and refuge.
- Work with partners to clearly connect the trailhead to outlying regional trails, to tie into safe routes on residential streets, and to build a safe crossing (e.g., signaled, over or underpass, crossing signals) across 56th Avenue.
- To ensure the visitor is oriented to the trail system and refuge's wildlife-dependent recreation opportunities, post a refuge map and information about the refuge along the fence next to the entrance gate.
- Use trail markers to reassure and direct visitors.



CITATION: U.S. Fish and Wildlife Service. 2017. General Development Plan for the Rocky Mountain Arsenal National Wildlife Refuge. Commerce City, Colorado: U.S. Department of the Interior, Fish and Wildlife Service, Rocky Mountain Arsenal National Wildlife Refuge.