Ross Park Zoo and Park – Binghamton, NY
Playful Learning Forest

MASTER PLAN:
DESIGN PROGRAM & SITE PLAN

NC STATE Design NLI NATURAL LEARNING INITIATIVE

ross park ZOO

December, 2023

Ross Park Zoo and Park – Binghamton, NY
Playful Learning Forest

MASTER PLAN: DESIGN PROGRAM & SITE PLAN

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Acknowledgements

Our grateful thanks to the 479 individuals who responded to the community survey with invaluable program ideas and comments for what has become known as the Forest Play and Learning project (working title). A special thanks to those who gave time to participate in the Stakeholder Workshop, who contributed to the discussion of innovative programming, design, and management ideas. Above all, our sincere thanks to Phillip Ginter, Director, Ross Park Zoo, for inviting the Natural Learning Initiative to work with the Ross Park and Zoo community to create the Forest Play and Learning Master Plan: Design Program & Site Plan.

All images are credited to the Natural Learning Initiative, unless otherwise stated.

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College of Design,
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Parkway Street entrance from Park Avenue.

Introduction

The Ross Park Playful Learning Forest Master Plan (Design Program + Site Plan) was initiated with a community survey and a two-day site visit, including a stakeholder workshop facilitated by NLI.

The vision projected by responses to the Community Survey was clearly broader in scope than the original project title (Nature Play and Exploration Trail), reinforced by the Stakeholder Workshop participants who emphasized educational potential. The site itself suggested a more ambitious approach. Eventually, these shared perceptions resulted in the expanded, renamed,"Playful Learning Forest."

The purpose of the Master Plan is to provide the Ross Park Play and Learning Forest implementation team with a decision-making guide, framed by the project mission and goals described below. The Design Program narrative is based on the results of the segmented Community Survey, which describes the user needs and physical infrastructure improvements proposed by survey respondents, incorporated into the Site Plan. The Community Survey results will continue to inform the future Schematic Design, Activity Programming, and related site management process.

Post-visit discussions with Ross Park Zoo staff confirmed the site boundaries, transportation options, and internal circulation requirements presented here.

Stakeholder Workshop.

Mission & Goals, Site & Users

Stakeholder Workshop participants drafted an initial mission and goal statement finalized by NLI and confirmed post-workshop (see APPENDIX A for full report).

MISSION

The Ross Park Playful Learning Forest supports inclusive, accessible interaction with local habitats, stimulates self-guided learning, sparks empathy with nature, inspires conservation action, and recognizes the legacy of those who came before.

GOALS

1. Identify, prioritize, and optimize the experiential values of Ross Park.
2. Assure a functional, inclusive, accessible, and safe destination for all.
3. Create a healthy, enjoyable, educational/ recreational human-nature ecosystem.
4. Conserve and improve habitat quality to protect wildlife and organisms.
5. Collaborate with state and local governmental and nongovernmental organizations to implement and effectively manage Ross Park Play & Learning Forest.

SITE CONFIGURATION

Key site configuration considerations, including access and circulation options, were discussed with Ross Park Zoo leadership, including:

- Overall site boundaries.
- Off-site connections.
- Location of Nature Play and Exploration Trail and related settings and areas.
- Need for a small scale infant-toddler area.
- Location of Nature Center – potential gateway from zoo to nature trails.
- Entries / primary access routes.
- Parking area(s).
- Potential field station/ educational area near creek.

USER GROUPS

Current and future users of the Ross Park Nature Play and Exploration Trail include three primary groups:

1. **Informal user groups** of all ages and abilities unaffiliated with local institutions or programs.
   - Bikers
   - Bird watchers
   - Dog walkers
   - Families
   - Foragers (mushrooms, blueberries)
   - Naturalists
   - Photographers
   - Tourists
   - Visual artists
   - Walkers / hikers

2. **Formal user groups** (current and future) associated with Ross Park educational / recreational institutions and programs.
   - Afterschool groups
   - Birdwatcher groups
   - Childcare programs
   - Educators
   - High school science students / teachers
   - Higher education students / faculty
   - Home-schooling groups
   - Preschool groups
   - School groups
   - Scouts
   - Team building / training
   - Volunteers

3. **Special event participants**
   - Birthday parties
   - Family gatherings
   - Music / theatrical performances
   - Weddings

Community Survey

The community survey was transmitted to a list of 4,683 email addresses. Responses were received from 479 – a 10% response rate across five predefined community segments, as below:

- ROSS PARK ZOO COMMUNITY, 139
- EDUCATOR OR EDUCATIONAL ORGANIZATION, 41
- LOCAL ORGANIZATION, 26
- DISCOVERY CENTER PARENT, 14
- GENERAL PUBLIC, 259

TOTAL RESPONSE 479

Although the largest response was received from the "General Public," analysis of these data was placed last, representing the broad community of interest. Responses from the Ross Park Community and Educators were analyzed first as they represented the most focused and informed groups. Local Organizations and Discovery Center Parents were sandwiched between as representing specific, informed user groups. Ideas and suggestions from the Stakeholder Workshop participants were merged with responses in the Ross Park Zoo Community segment.

The Community Survey responses were analyzed in a three-steps process (APPENDICES A, B & C), to achieve progressively more generalized results, while also retaining the integrity of responses to individual questions in each segment – important for the future schematic design and activity programming.

The three analytical steps are presented in reverse order in Appendices A, B and C (general to detailed):

1. APPENDIX A: STEP 3: Responses from each segment combined in standardized categories (used to inform the Playful Learning Forest Design Program) **p13–p17**
2. APPENDIX B: STEP 2: Responses compiled for each segment in standardized categories.
3. APPENDIX C: STEP 1: Responses compiled for each segment by question.

View across Park Creek.

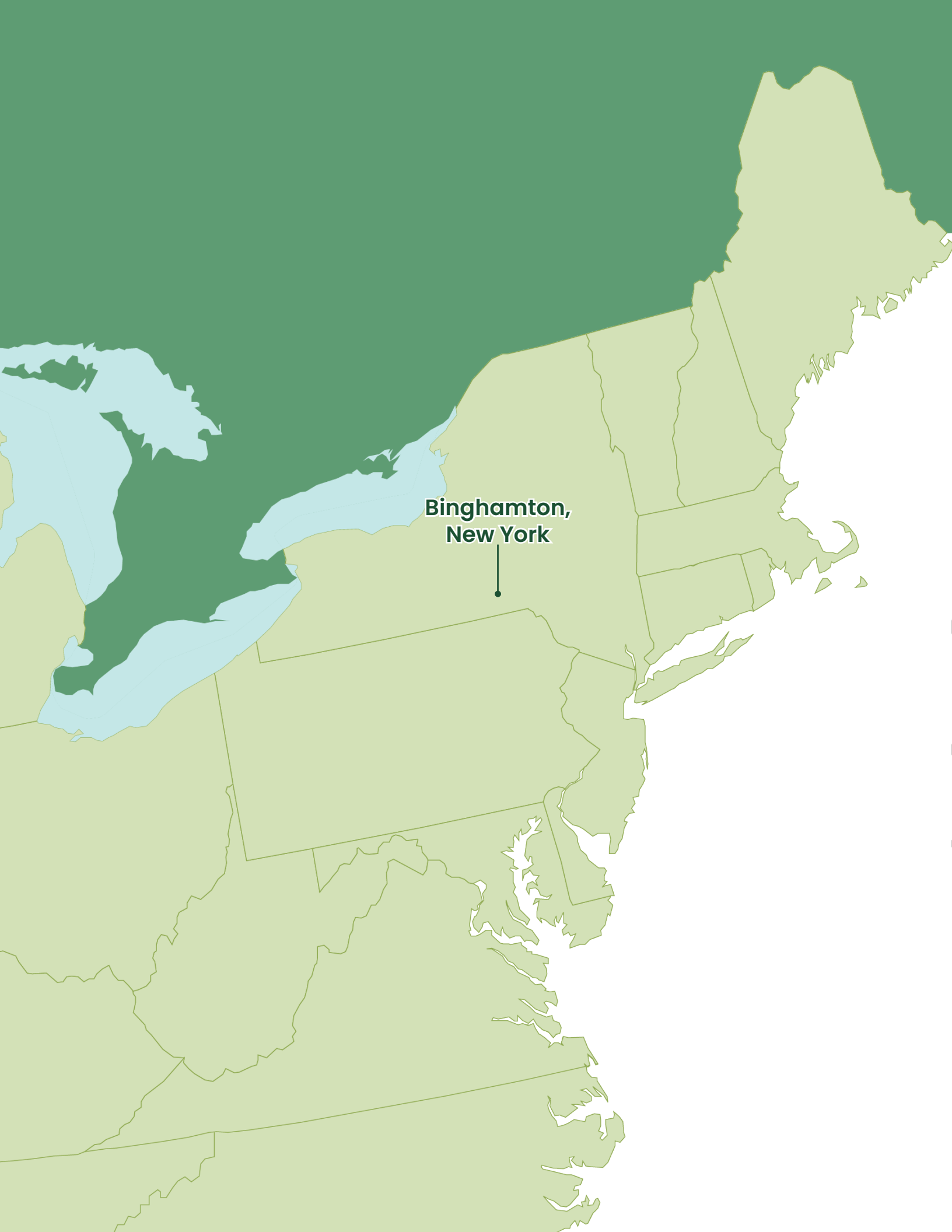
Master Plan:
Design Program + Site Plan

Together, the Design Program and Site Plan form the Master Plan Document (primary deliverable).

The Design Program described below provides a narrative informing the Site Plan. The Design Program was informed by the Stakeholder Workshop results, by Step 3 Community Survey analysis.

The Site Plan is informed by the Design Program, by the opportunities and constraints of the site, and by NLI's standard practice and results from prior projects in similar contexts as Ross Park.

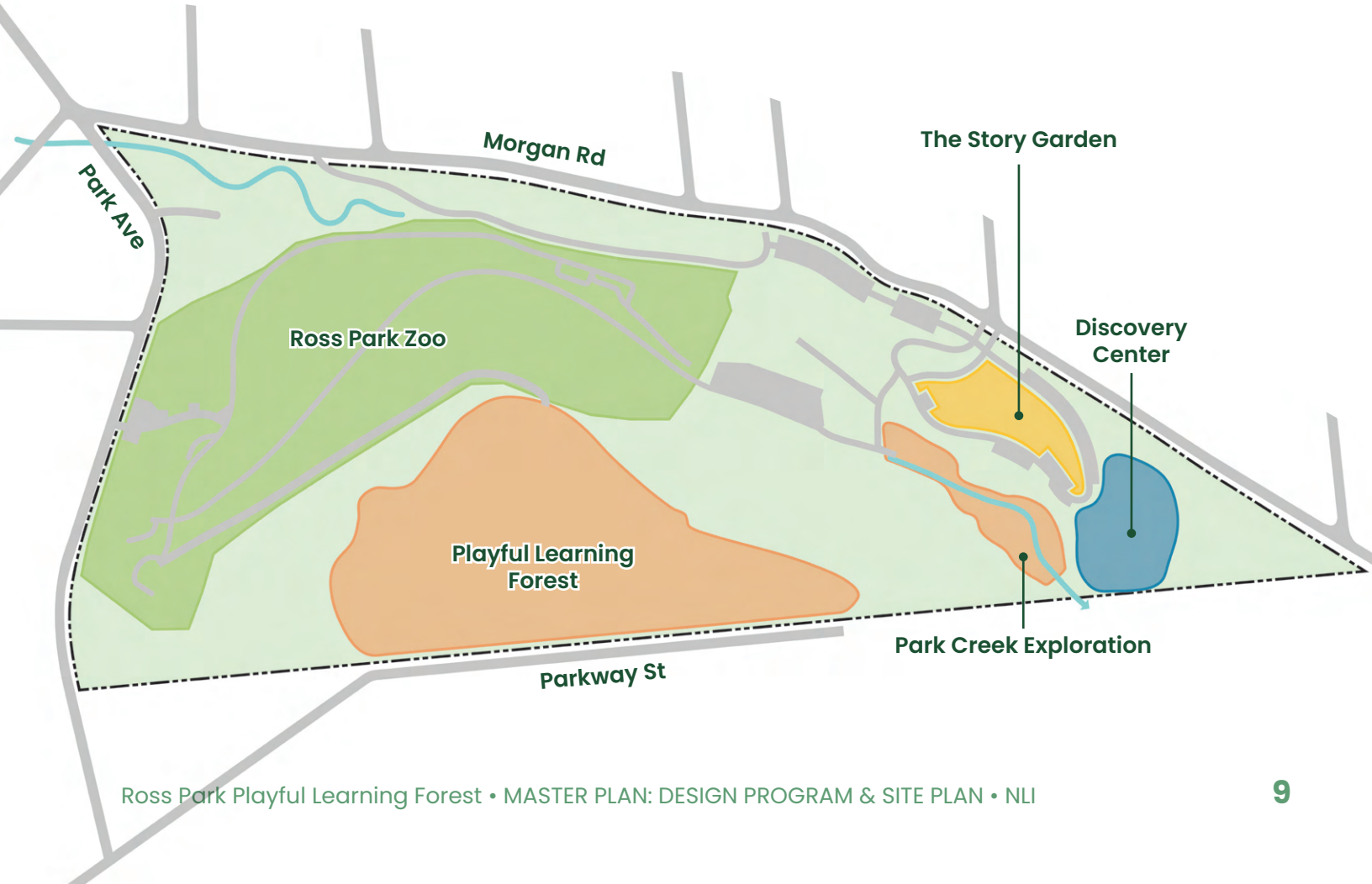
The Master Plan (Design Program + Site Plan) frames the future Schematic Design. The Master Plan provides information on user needs, organizational priorities, and a wealth of programmatic options. The Master Plan may guide discussion on potential phasing of the project.

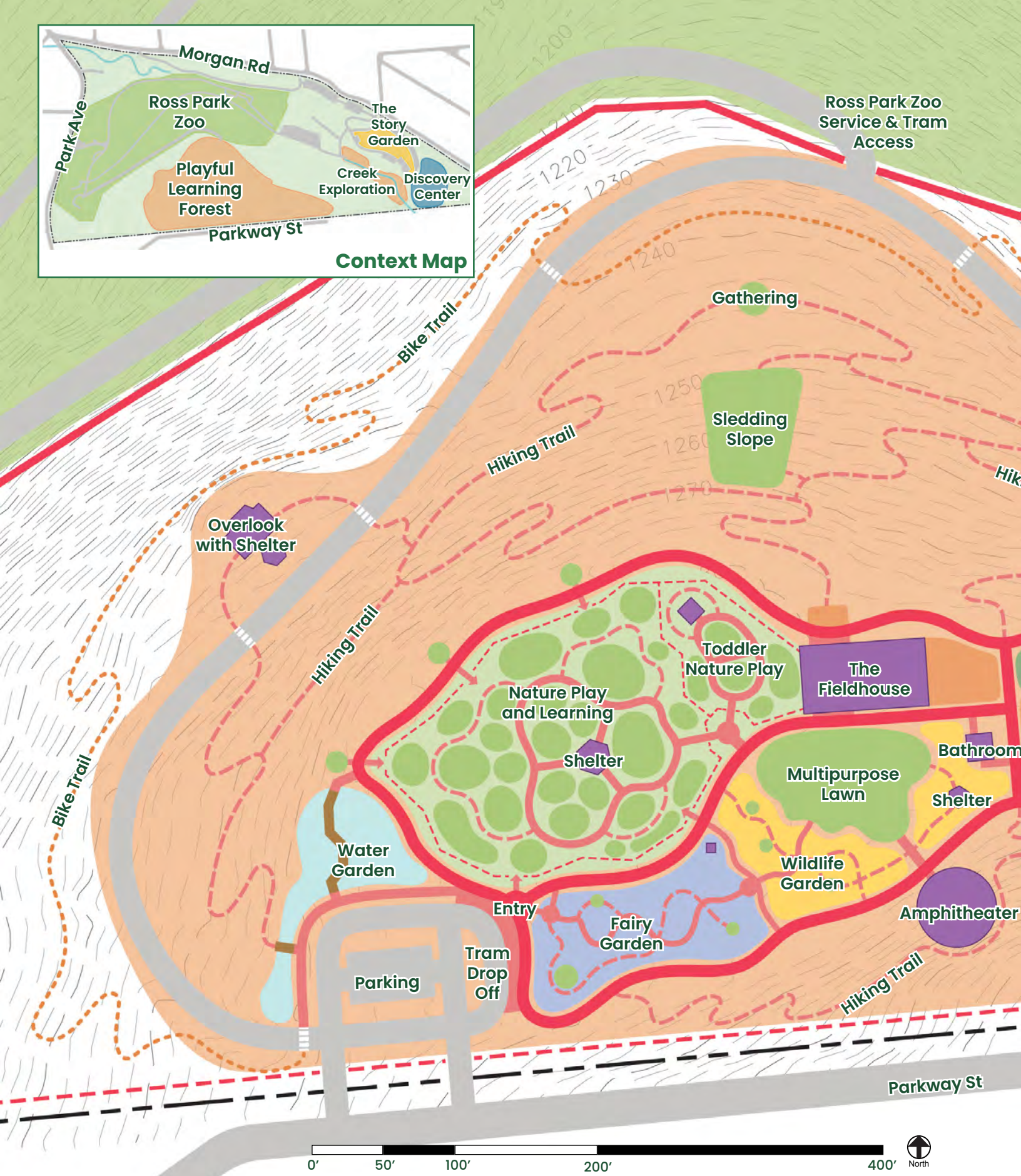

Binghamton,
New York

Site Location

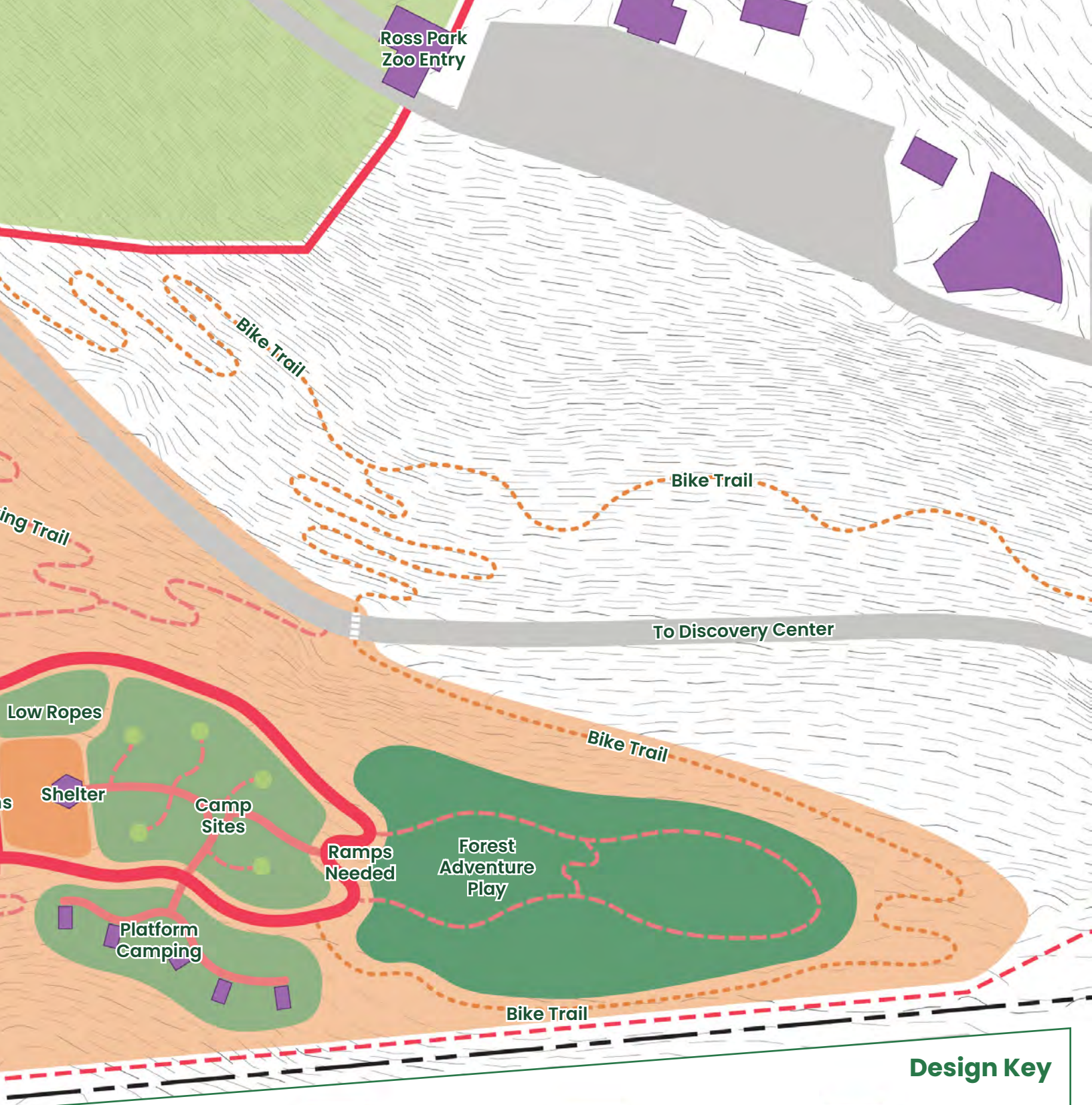
SITE CONTEXT MAP

The 75-acre Ross Park is located in Binghamton, "Southside" (of the Susquehanna River), adjacent to the historic Ross Park Zoo on South Mountain, in the Southern Tier of New York and the hilly terrain of the Allegheny Plateau. A continental climate includes cold, snowy winters and warm, wet summers. Binghamton, population 47,969 (2020 census), is the county seat of Broome County and home to the State University of New York at Binghamton.



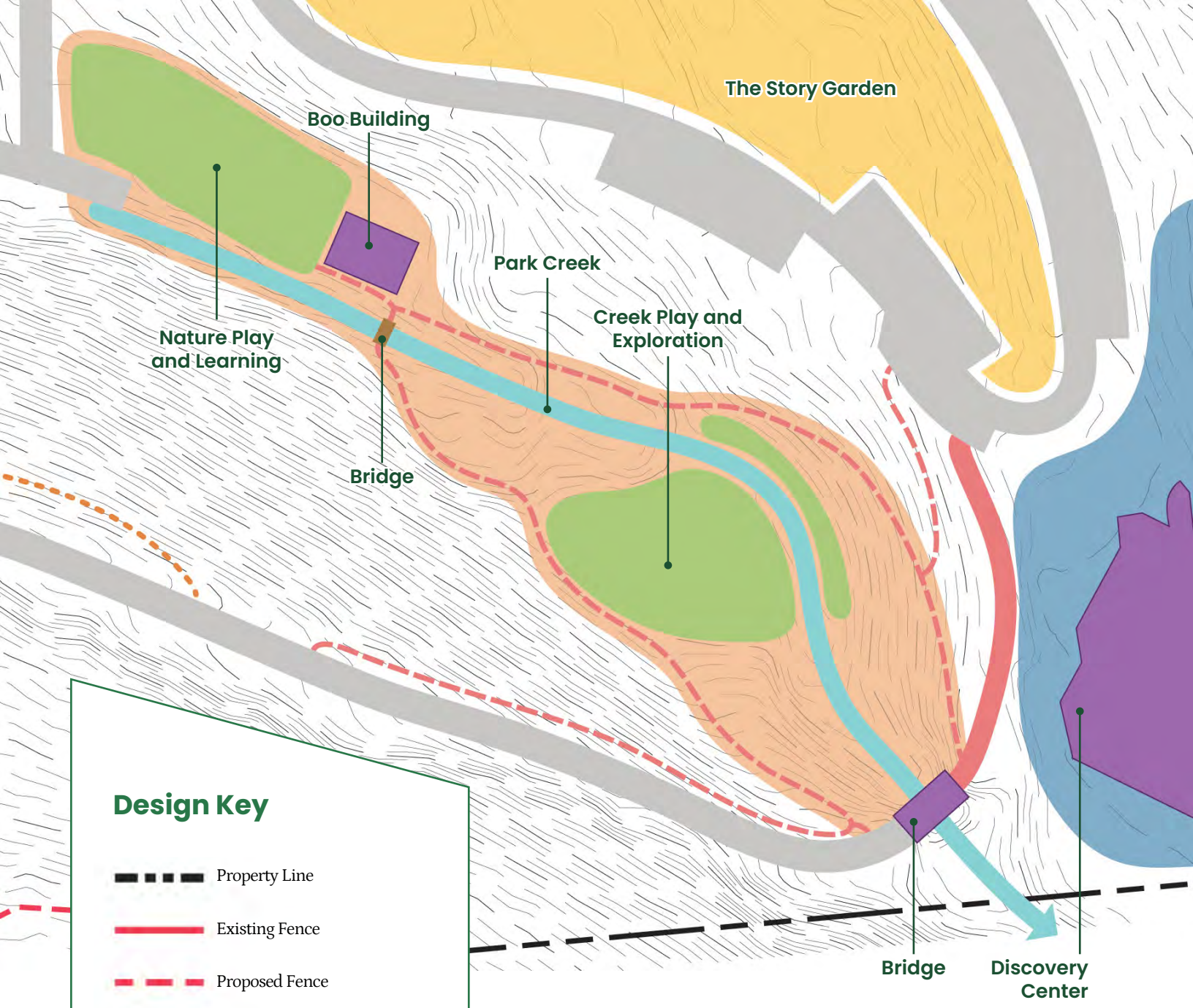


Playful Learning Forest Site Plan



Design Key

- Property Line
- Existing Fence
- Proposed Fence
- Vehicular Circulation
- Structures
- Paved Peripheral Pathway
- Secondary Pathway
- Hiking Trails
- Bike Trails
- Playful Learning Forest
- Nature Play & Learning
- Fairy Garden
- Wildlife Garden
- Activity Areas
- Water Garden
- Forest Adventure Play
- Gathering & Event Space
- Camping & Low Ropes



Design Key

- Property Line
- Existing Fence
- Proposed Fence
- Vehicular Circulation
- Structures
- Paved Peripheral Pathway
- Secondary Pathway
- Bike Trails
- Creek Exploration
- Activity Areas

Creekside Play and Learning

The Boo Building will serve as an educational hub along Park Creek creating further play and learning opportunities. A newly constructed bridge leads across the water to a trail that guides through the active space adjacent the creek; the trail's route terminates on a path leading to the Playful Learning Forest.

Design Program

OVERALL CHARACTERISTICS

Ross Park Playful Learning Forest is a place where visitors of all types can relax, de-stress, and tune into the healing effects of natural surroundings such as a labyrinth, hammocks, and/or peace garden. Playful Learning Forest goals are reflected in overall characteristics:

- Diverse:
  - Interactive, age appropriate, play & learning settings.
  - Native plant communities and wildlife habitats.
- Inclusive:
  - All abilities.
  - All ages.
  - Socio-economic circumstance.
  - Racial/ethnic background.
  - Gender identity.
  - Cultural heritage.
- Accessible
  - Tram service with direct connections to Zoo, Discovery Center, and on-site parking.
  - On-site handicapped parking.
  - ADA-compliant accessible routes (hard-surface, primary pathways).
  - Variable "degrees of challenge" of settings and pathways.
  - Hiking trails.
  - Biking trails.
- Intergenerational
  - Children, parents, grandparents, older relations, and friends.
  - Shady.
  - Trees.
  - Overhead structures.
- Seasonal
  - Native plant selections accentuate seasonal changes.
  - Special events celebrate solstices and equinoxes.
  - Programs adapt to seasonal conditions.

THE FIELDHOUSE

The Fieldhouse would ideally be constructed in the first phase to serve as a community anchor and place for programmed activities and community events. Although the largest investment, constructed as the lynchpin of the first phase would more likely guarantee long term success of the overall project. Such construction at a later phase would inevitably disrupt the site for a substantial period of time, presenting a site management and public relations challenge. The multiuse, air-conditioned facility would be serviced from the Zoo Tram Dropoff.

The Fieldhouse would serve as a program base for educational and recreational activities, including:

- Formal and informal gatherings
- Zoo programs.

Partial view of Playful Learning Forest Site.

- Scouting badgework.
- Cultural gatherings and performances.
- Community celebrations.
- Family gatherings.
- Retreats.
- Workshops.
- Corporate and nonprofit organizational events.
- Public lectures.

Fieldhouse spaces include:

- A large, flexible, event space.
- Table and chair storage.
- Exhibition wall space.
- Classrooms.
- Kitchen.
- Restrooms accessible from outside.
- Ample indoor-outdoor porch space for play and learning program activities.

The Fieldhouse is located adjacent to the Paved Peripheral Pathway (see below), Multipurpose Lawn, and flexible outdoor gathering and activity spaces, including:

- Spaces designed for small groups.
- Picnic amenities.
- BBQ facilities.

TRAIL CATEGORIES

Ross Park Playful Learning Forest is a place where movement through a diverse landscape offers multiple opportunities for play and learning by all ages and abilities.

Trail categories include:

- Paved Peripheral Pathway
  - ADA-compliant, hard-surfaced, accessible routes.
  - Sufficiently wide for walking group conversation.

- Located to maximize curvy, exploratory alignment and minimize tree loss.
- Low rail edges.

- Extended Paved Peripheral Pathway
  - ADA-compliant (with ramps for existing topography), hard-surfaced.
  - Access to Camping Areas and Free Nature Play.
- Secondary Looping Trails
  - Decomposed granite (DG), permeable surface.
  - Five-feet minimum width.
  - Low rail edges.
- Hiking Trails
  - Varying difficulty signage
  - Woodchip surface.
  - Edges marked with logs.
- Biking Trails
  - Varying difficulty signage
  - Woodchip surface.
  - Edges marked with logs.

PAVED PERIPHERAL PATHWAY – INTERACTIVE CORRIDOR

The outer boundary Peripheral Pathway offers Interactive Stations along the way that stimulate imaginative play & learning for children, youth, families and school groups, combined with opportunities to rest.

Interactive Stations may offer:

- Loose parts
- Tethered items.
- Lookouts.
- Bird watching blind, bird ID.
- Interactive signage with wildlife topics, animal ID.
- Plant ID.
- Weather response: human, other animals, vegetation, ground surface, hydrologic cycle, sky.
- Fitness stations.
- Frog tubes.
- Small critter carpet lifts.
- Historical tidbits.
- Geocaching.
- Places to sit and observe.

NATURE PLAY & LEARNING AREA

This large, interactive area is where children and students of all abilities explore diverse activity settings. Natural objects and phenomena add to love and knowledge of the natural world. Discoveries can be explored further in the Fieldhouse "lab," back home or at school.

Activity settings include:

- Swings.
- Tunnels.
- Bridges.
- Treehouse.
- Climbing/balancing.
  - Rocks, logs, equipment, structures, walls, ropes.
- Acoustic play.
- Grass maze.
- Digging/excavation.
  - Earth play.
  - Fossils.
- Habitat adventure play.
  - Eagle's nest, groundhog tunnel, spider's web.
  - Natural loose parts construction.
  - Hamill Family Play Zoo at Brookfield Zoo as precedent, including "Play Partners."
- Natural free-form construction.

TODDLER NATURE PLAY

This enclosed gardenesque area, with a self-closing gate, is designed for safe play in nature for crawling infants and learning-to-walk toddlers. Here, accompanying adults can rest, de-stress, and relax – or play with their children.

Activity settings include:

- Small, domed and/or undulating lawn to challenge children learning to walk.
- Raised beds with safe perennial, multi-sensory flowing plants.
- Keyhole beds.
- Wind chimes.
- Biophilic light textile, playfully hangings to catch the wind.
- Deck for intergenerational play.
- Micro nooks scaled to two year olds.
- Shady.

AMPHITHEATER

The amphitheater is a place with comfortable, raked seating and a stage with classical proportions expressing a sense of drama.

- Capacity TBD.
- Informal gathering space.
- Zoo special events.
- Theatrical and musical performances.
- Connection to local theater troupe
- Annual festivals.
- Formal gathering space for local organizations.

WILDLIFE GARDEN

This area is designed and managed to inspire visitors to naturalize their domestic landscapes at home, to increase the local biodiversity that the planet needs more than ever.

The Wildlife Garden offers:

- Multi-sensory walkthroughs and resting spots.
- Proof of concept.
- Pollinator/wildlife learning resources.

FAIRY GARDEN

A place for all those who believe in fairies and allied imaginary beings of the natural world. A place full of magic and sensory surprises. In weekend Fairy and Elfin Workshops children make their own costumes and invent dramatic games. Implemented by the "Imagination Forest" team, the Fairy Garden will become a place for:

- Exploration and discovery.
- Imaginary play.
- Making "fairy houses."
- Strolling.
- Finding comfortable seating.
- Joining a storytelling circle.
- Contributing as an artist to the landscape.

LOW ROPES COURSE

This place affords first experiences of low ropes, via:

- An enclosed, defined activity area.
- Informal, unsupervised use.
- Formal training programs for different ages.

CAMPING AREAS

Interest in camping was noted by survey respondents and underscored by Community Workshop participants. Camping in Ross Park is an attractive option for families who want to try it out as a first step towards more ambitious camping trips.

Camping areas include:

- Reservable Swedish style platform structures (gapskjul/slogbod) for year-round use.
- Reservable tent camping for individuals, families, youth groups.
  - Campfire location – shared
  - Limited rental equipment available (local vendor) for those wishing to test the camping experience.

FOREST ADVENTURE PLAY

Here, kids can go into the woods and go wild building shelters, playing imaginative games, collaborating with friends. The area is risk managed and lightly supervised. Local scout troops may use the woods for badgework.

Basic parameters include:

- Accessed from Paved Peripheral Pathway.
- Size between 1/3 acre and 1 acre.
- Enclosed, managed play area.
- Natural loose parts for free, spontaneous, natural construction play.
- "Animal Homes" program place.
- Adjacent to Camping Areas for co-use.

WATER GARDEN

Surface runoff from parking and other hard surface provides sufficient water to feed a pond and bog garden with diverse native aquatic plants and wildlife, supported by:

- Transverse pathway.
- Explanatory signage.
- Aquatic ecology programs

COMPONENTS THROUGHOUT

Place-enhancing physical items are distributed throughout the site to serve aesthetic enhancement, educational messaging, nature-based programming, user needs, and functional excellence.

Components include:

- Art
  - Sculptures
  - Murals
- Signage
  - Educational
  - Wayfinding
- Comfortable seating of several types for all ages.
- Trash/recycling stations.
- Drinking fountains

PARKING AND TRAM DROPOFF

Handicapped parking is offered, with limited space during low-use times during the week and low season, and tram drop-off during weekends and high season.

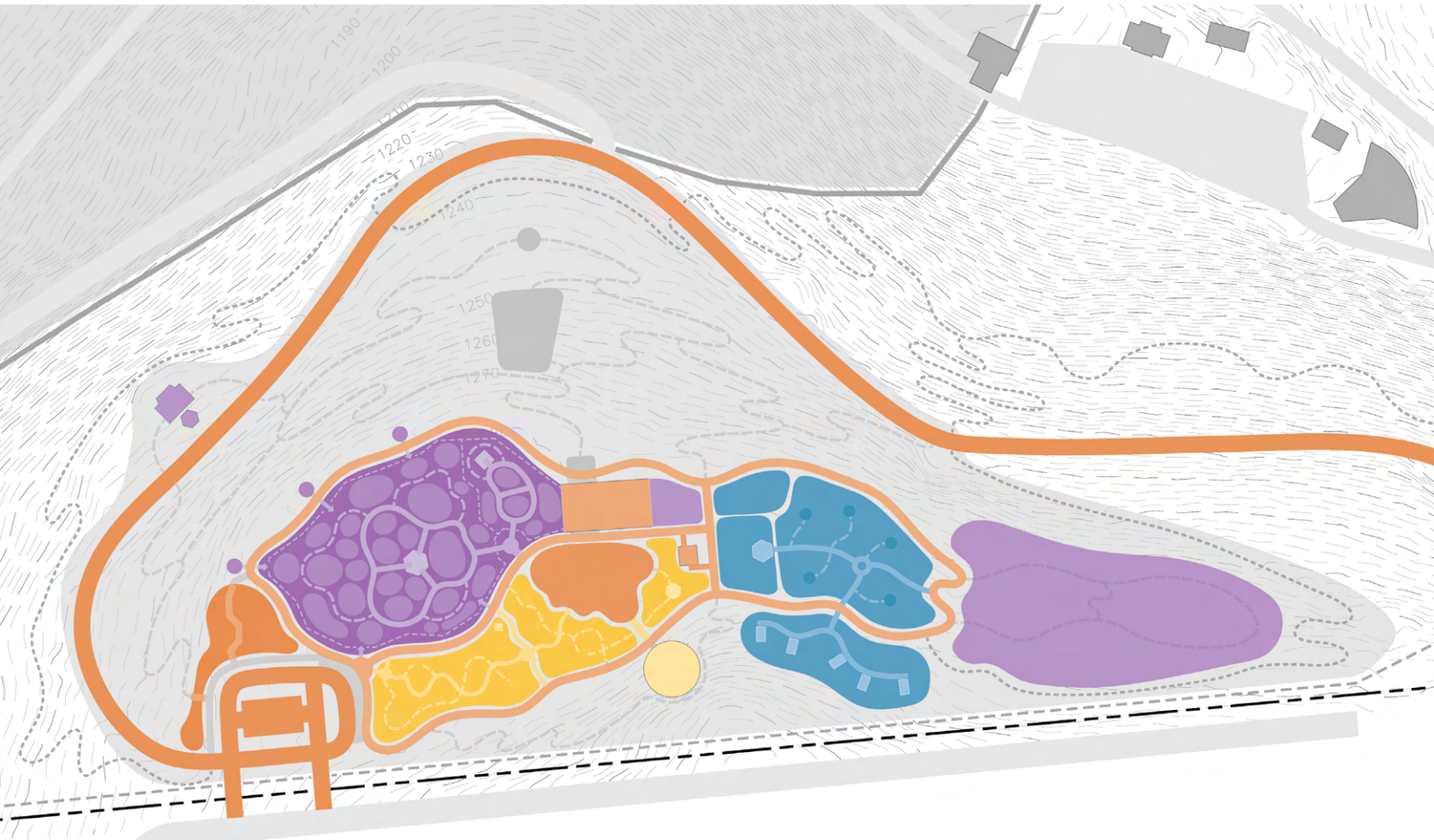
Stand of White Birch in Playful Learning Forest site.

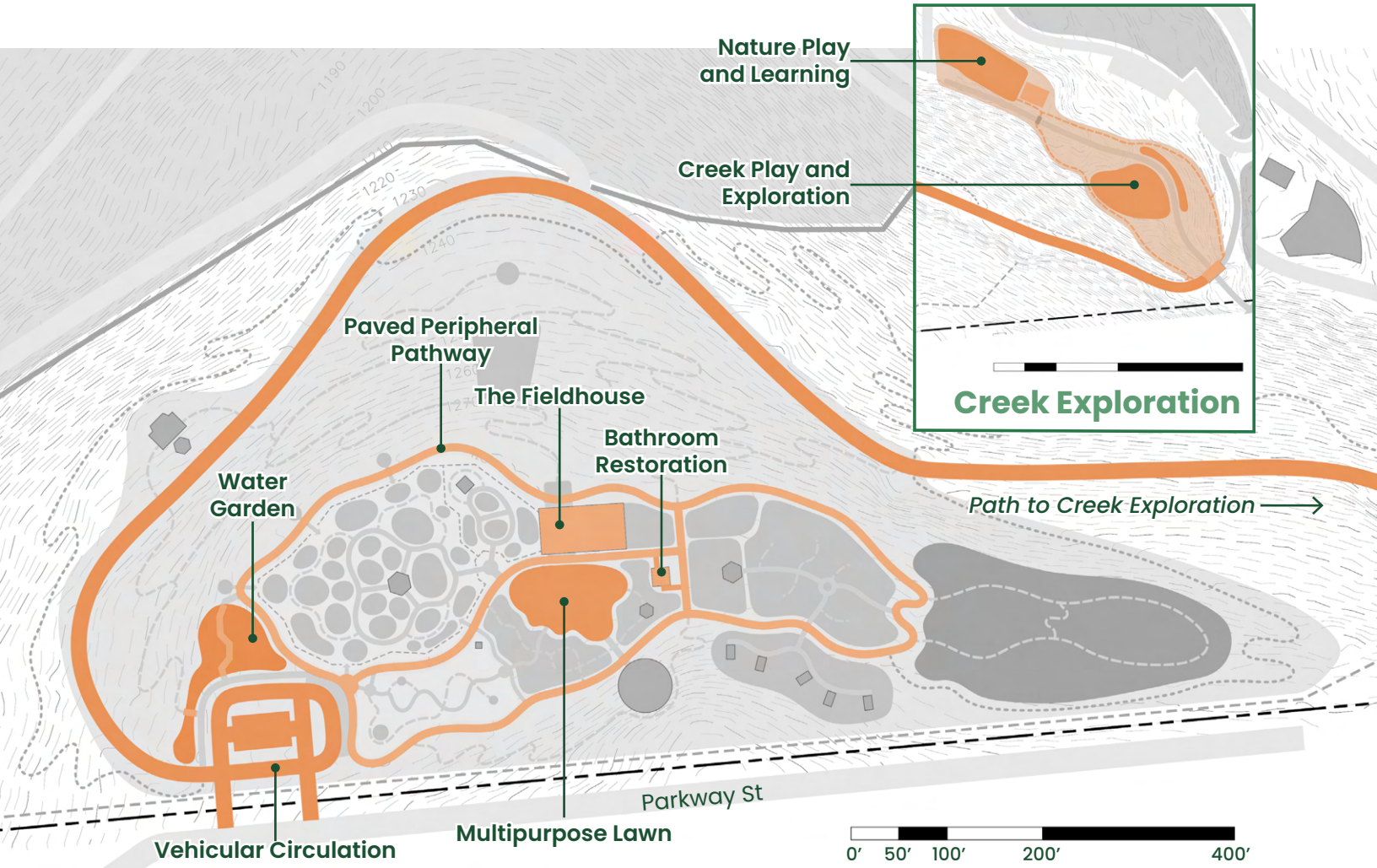
Phasing

Development of the Ross Park Playful Learning Forest as described in the Master Plan will be implemented in four phases. This strategy matches configuration of the proposed site design, is adapted to the site construction limitations, and moderates the fund-raising timeline burden. That said, as often is the case with this type of recreational/educational construction project, the initial phase is typically the most costly. However, once successfully "open for business," prospective donors are often more likely energized to help complete the project. The four phases are proposed as follows.

Phase Key: 1 2 3 4

See next pages for phasing steps →





Phase 1

Primary Plan Area

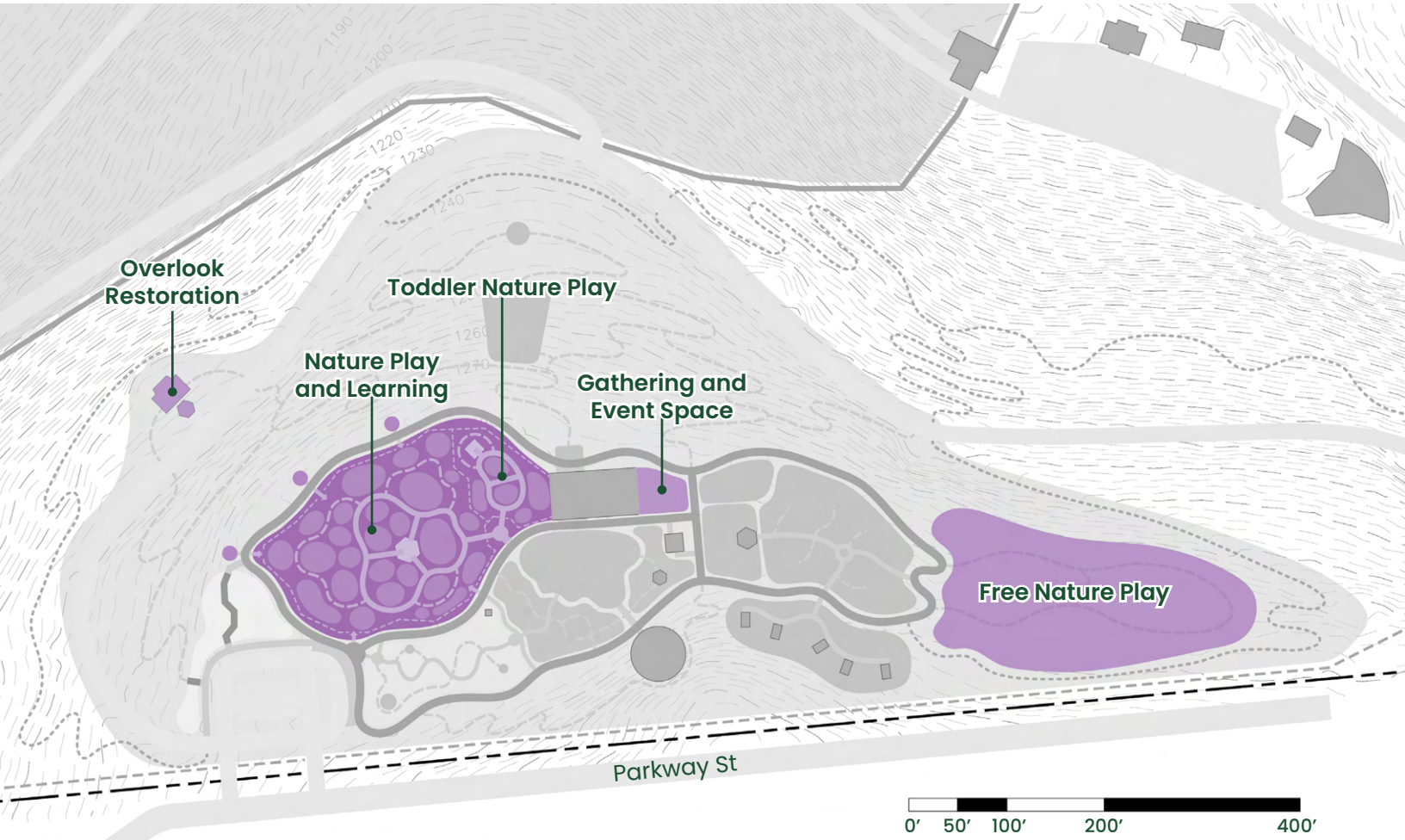
- The Fieldhouse
- Paved Peripheral Pathway
- Multiporpose Lawn
- Vehicular Circulation
- Bathroom Restoration
- Water Garden

Creek Exploration

- Nature Play and Learning
- Creek Play and Exploration

Phase 1 includes Creek Exploration, which by occupying a site along the banks of Park Creek introduces the larger project to Zoo, Story Garden, and Discovery Center visitors. The renovated Boo Building serves as a programmatic anchor connecting users to nature play and learning installations focused on science, literacy, and exploration. A bridge across the creek provides access to the creek bed and the opposite bank.

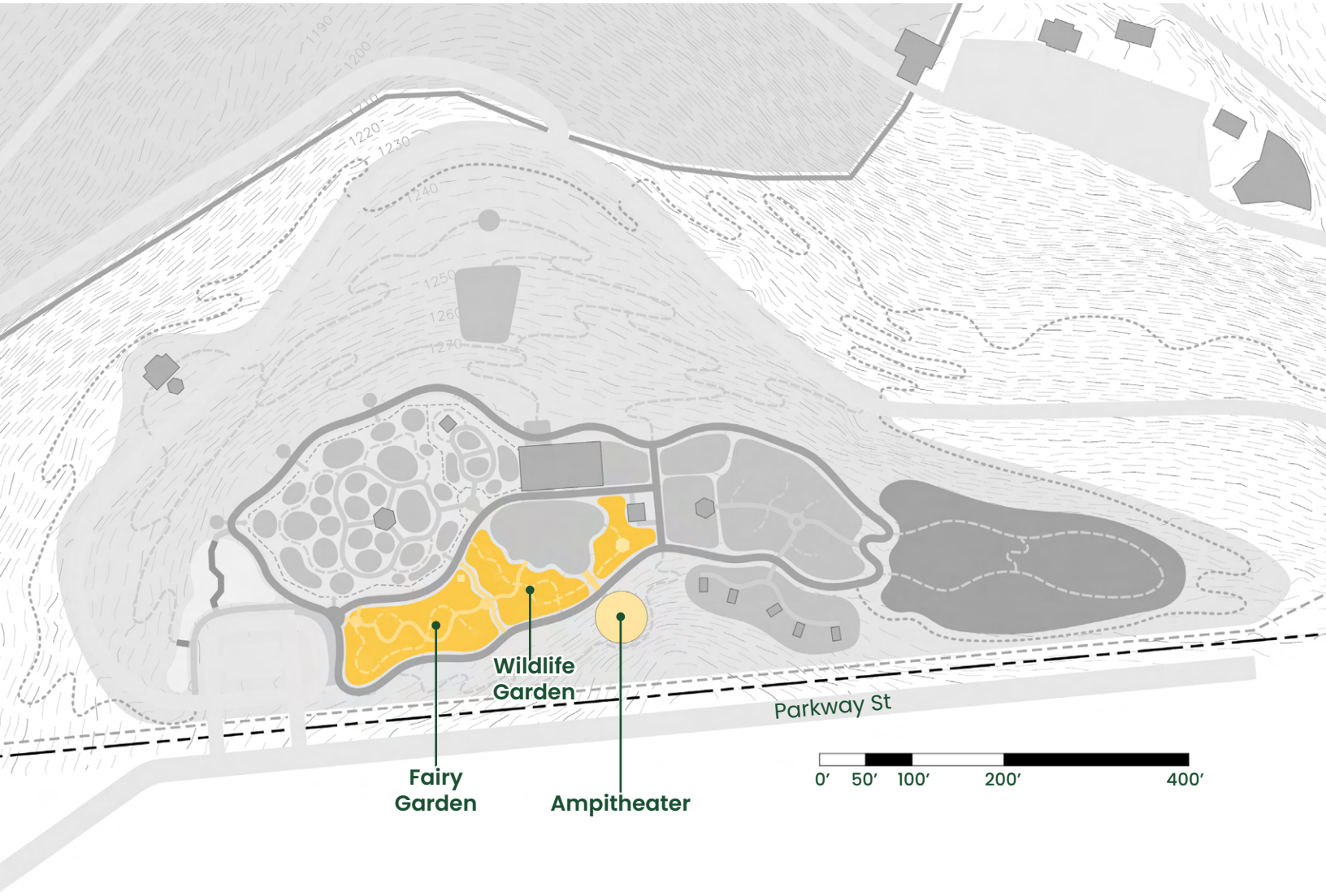
A primary pathway extends access to the Playful Learning Forest. Phase 1 basic infrastructure, includes vehicular circulation, Zoo Tram drop-off, and parking. An adjacent Water Garden, created to treat parking lot runoff, also increases biodiversity and associated learning opportunities. Construction of the Fieldhouse provides a critical anchor to facilitate diverse Phase 2 programs described in the design program. Renovation of the adjacent, historic Bathrooms building provides a necessary facility that will also serve Phase 4 overnight campers. Construction of a Paved Peripheral Pathway and cross-connections provide access to the main site, communicating a vision of future development – encouraging visitor support.



Phase 2

- Nature Play and Learning
- Toddler Nature Play
- Gathering & Event Space
- Overlook Restoration
- Free Nature Play

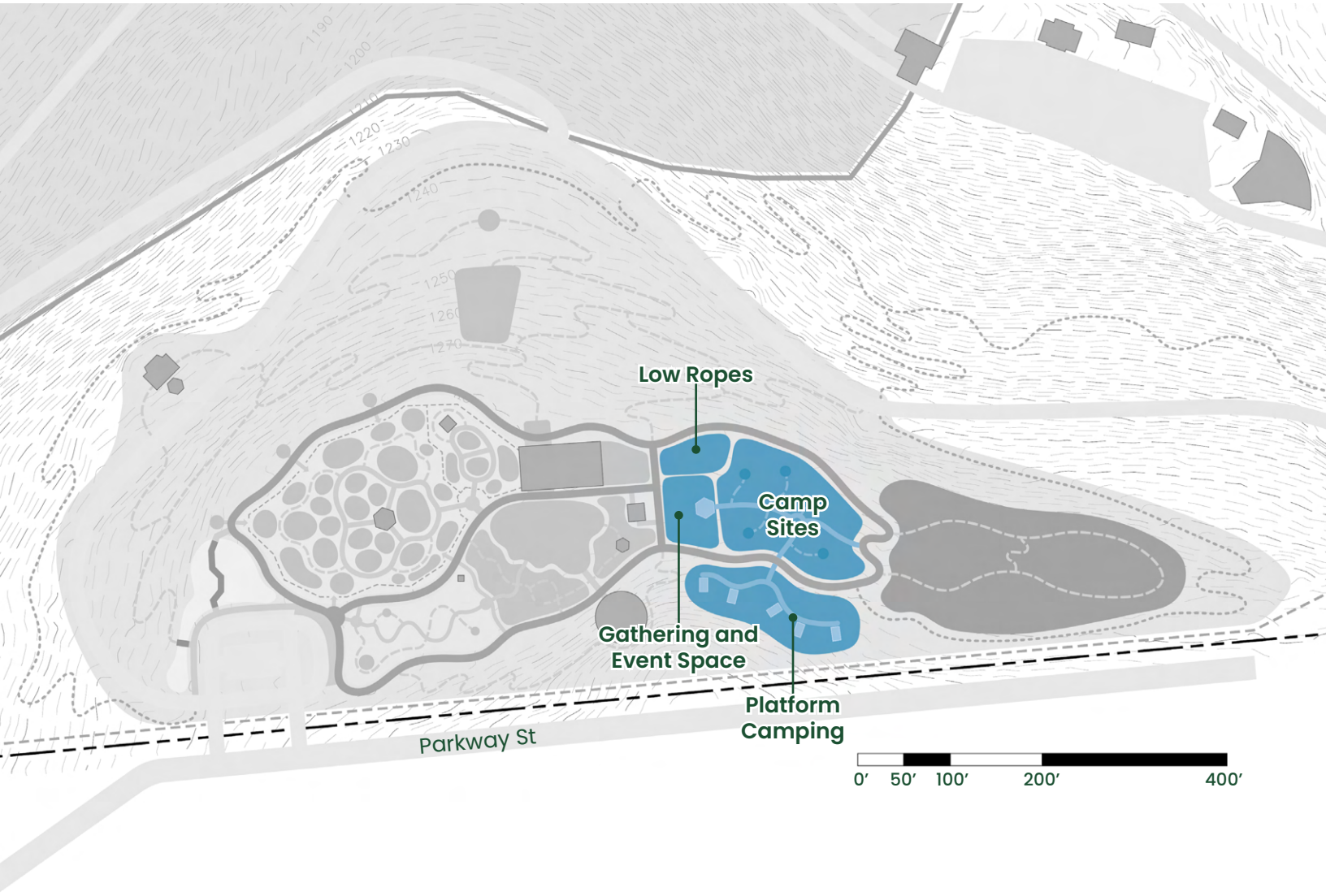
Phase 2 focuses on installation of diverse Nature Play and Learning settings, immediately west of the Fieldhouse, to activate educational programming. Playful interactive settings installed along the Paved Peripheral Pathway, extend active engagement east to the Free Nature Play area. Restoration of the historic Overlook and Shelter located on the NW edge of the site, begins in Phase 2 to provide facilities for gathering and special events.



Phase 3

- Wildlife Garden
- Fairy Garden
- Ampitheater

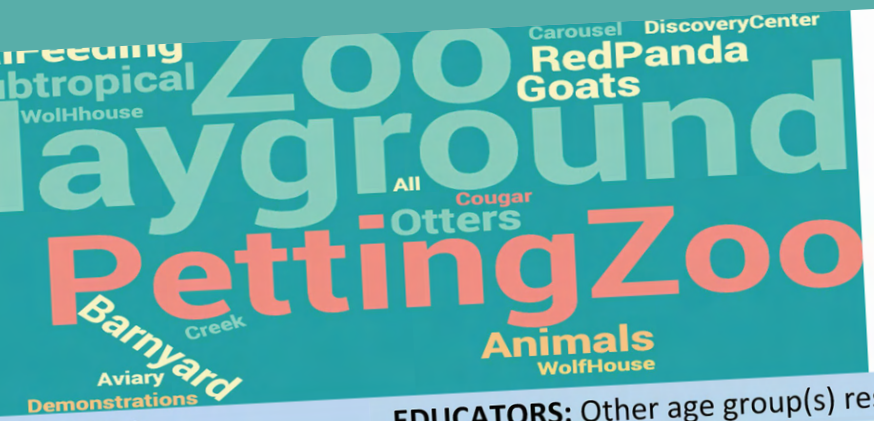
Phase 3, in addition to the multi-purpose lawn, includes installation of the Fairy Garden and Wildlife Garden. Both will increase biodiversity of native flora and fauna and broaden the range of programming in science, literature, and the arts – including drama served by an amphitheater embedded among trees on in the sloping site. Phase 3 includes initiation of hiking and biking trail systems in collaboration with local organizations.



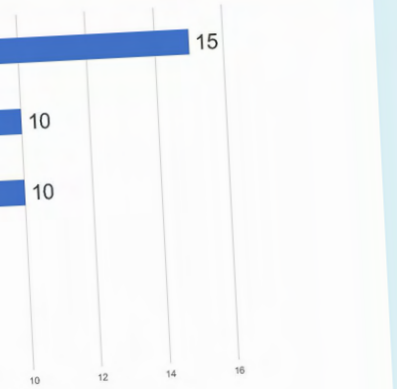
Phase 4

- Camp Sites
- Platform Camping
- Low Ropes
- Gathering & Event Space

Phase 4 includes installation of a Low Ropes Course and development of Overnight Camping, including Platform Camping along the south side hill, all served by a space for communal gathering. Phase 4 includes completion of hiking and biking trail systems.



work with?



EDUCATORS: Other age group(s) responsible for / work with?

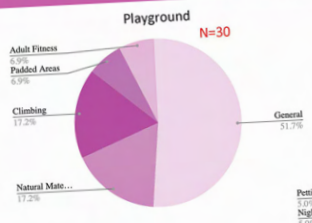
LOCAL ORGANIZA

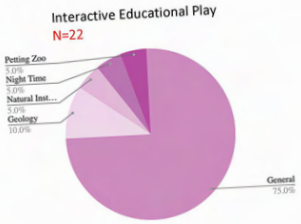
N=26

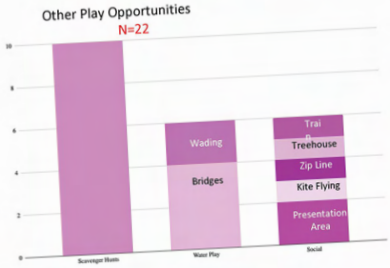
Special needs c
Youth or
Cultural
Environmental o
Public health o
Local neighborhood o

RAL PUBLIC: Features that Would Prompt Return Visits - Play

AS
ground (30)
General (15)
Natural playground equipment (5)
Climbing opportunities (5)
Padded areas for younger children (3)
Adult Fitness (2)
ractive educational play (22)
General (15)
Geology-related (2)
Natural Instruments
Night time
Petting zoo
venger hunts (10)
ater play opportunities (6)
Bridges (4)
Wading (2)
cial opportunities (6)
Presentation area (2)
Kite flying
Zip line
Train
Treehouse







EDUCATORS: Other positions?

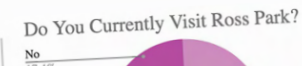
24

GENERAL PUBLIC: Do You Currently Visit Ross Park?

ROSS PARK Z

N=117

A member of th



Staff m

APPENDIX A

Community Survey Results

STEP 3: Results from each segment combined in standardized categories

(used to inform the Master Plan Design Program)

OVERALL

- Abundant nature, forest play, hide & seek, Ninja course between trees, obstacle course (6)
- Accessible, accessibility, disability needs (braille, ramps, spacing, etc.), inclusive of all abilities (8)
- Adventure encouraged without being overly risky (remove unsafe, dead trees, sharp rocks, etc.)
- Age-appropriate
- Age-group stations (younger more sensory interactive; older, more reading / cognitive).
- Auditory learning spaces, sounds/recordings or interactive apps tied to specific spaces (2)
- Calm/quiet (corners, eating/resting/ reflection, rocker benches, grounding, meditation sound of running water for children to center themselves (6)
- Children unleashed, exploring, in fresh air
- Classical music
- Colorful sensory playscape
- Encourage basic manners and kindness
- Engage children to spend time there, seating for adults
- Freedom of movement and varied possibilities for seating, standing, interacting.
- Inter-generational
- Interactive
- Recognize climate change
- Relaxing, rest & recovery (2)
- Seasonal
- Sensory items in the woods that kids can touch, smell, see, do, accessible night, monthly
- Sustainability (7)
- Sustainable natural materials in exhibits, handouts rather than single use (2)
- Tactile – touch trees. Wear mask and feel environment
- Visual – both natural and made items – sight – tree identification (2)
- Weather impact on nature and nature response.

TRAIL CORRIDOR

- Bathroom along trail
- Bikes
- Carriage rides
- Environment-related informational signage
- Gathering spaces along trails to sit and discuss lessons or relax.
- High quality walking / hiking trails
- Hiking challenge rewards
- Guided hikes (day, night (3), birdwatching (3), snowshoes, different ages) (29)
- Interactive app., encouraging path exploration

- Marked trail signs
- Mountain biking trails
- Mushroom and fungi informational scavenger hike (signage).
- Mushroom foraging (5)
- Nature scavenger hunt trail/area (2)
- Nature trails/pathways – guided hikes, walking, plant ID, wildlife ID, chipmunk alley, tree ID, scavenger, fitness, upper path, evening program lighting (28)
- Opportunities along the way (8)
- Pathways with reminder stepping stones (2)
- Peddle ride
- Primary, accessible, smooth pathway/trail surfaces for wheelchair and stroller access with levels of ability / challenge (3).
- Rentals (3)
- Seating to watch birds, squirrels, chipmunks, etc.
- Smooth pathways
- Station, water bottle refilling
- Stations – self-guided walking
- Stations with suggestions for brief nature experiences (2).
- Interactive kiosks/stations
  - Geocaching (7)
  - Exercise, fitness (9)
  - Letterboxing
  - Music
  - Observation, station, points, opportunities, changing (13)
  - Sensory station
  - Storyboards
  - Weather
- Trail expansion program (6)
- Trail safety (both signage and design strategies) (2).
- Trail – Alpine
- Trails – hiking
- Trails to learn from
- Varied picnic tables with grills along trails
- Precedents
- Trail installed at Letchworth for sensory-friendly ideas.
- Wild Center trail at Tupper Lake. Recreate their forest play area.
- "Anarchy Zone" like Ithaca Children's Garden.
- Playscape at Briar Bush Nature Center in PA

ACTIVITY SETTINGS

- Accessible bathrooms and water fountains
- Animal-themed, homes, habitat play, monkey climb, spider ropes, meerkat, prairie dog, crawling, tunnels (4), groundhog tunnels (9)
- Aquatic settings and features, water area, pond with fish, Koi, frogs for kids to watch, listen explore, observe, messy, dirt, sand, creek access, wetland (5)
- Bathrooms, public
- Bird watching/feeding/sound amplifier, designated observational areas (8)
- Bird houses – educational
- Blinds with seating for full habitat observations (birds, deer, squirrels) (3)
- Bungee jump
- Butterfly house

- Camping overnight platform tents, Swedish Shelters, cabins (3)
- Classroom "longhouse" built by participants in a program designed to learn about Native Americans/indigenous people, their use of natural resources and beliefs about nature.
- Classroom indoors/building
- Classroom outdoors, large, covered gathering
- Classroom/outdoors pavilion (2) (year-round programming, access to materials and tools).
- Cleared, open space to run, jump, walk, exercise (3) – with limited visual barriers to monitor my kids
- Compost education, community (4)
- Covered/enclosed fieldhouse, kiosks cheerfully painted, clean, maintained, sufficient space, lighting for cloudy days; multifunctional structures; room; pavilion; covered, open, prevents weathering of educational materials; educational center; flora observation stations; fauna listening stations; live specimens; virtual reality safari (13).
- Creater spaces to draw animals, etc. (2)
- Disc-golf course
- Drawing/art area in nature
- Education pavilion with various programs (2)
- Educational exhibits, play spaces
  - Ancestral lands
  - Animals/habitat, including animal footprints and sounds
  - Geology
  - Eagle's nest
  - Groundhog tunnels
  - Hydrology
  - Interactive
  - Plant ID
  - QR codes
  - Spider's web
- Fire pit
- Fossils, excavate, identify fossils, authentic or fake (2)
- Garden, edible, designated, herbs (8) – showing impact of plastic consumption and disposal on nature over time.
- Garden, fairy (7)
- Garden (17), informational, exploration, local fauna, flora, wildflower, butterfly plants (7) pollinator plantings
- Gardens, maze, play, walk through, botanical, unqualified (21)
- Garden, rock (5)
- Geology, water, local study, lab
- Gathering for groups
- Hammock area for relaxation (2)
- Historical context maps on display, park history (2)
- Interactive exhibits – like bird wingspan display by the aviary (popular with kids and families).
- Interactive exhibits such as recycling grey water from a hand washing station next to the bathrooms (3)
- Kid in the 70's, Ross Park always open to ride bikes
- Labyrinth – with tree at center
- Landscape display program sponsored by local groups (2)Learning library
- Lookouts – for birding or renovated for downtown views (2)
- Maple tap, sugar shack, maple syrup
- Maze
- Meditation space, labyrinth path, self-

guided, Zen, quiet nooks/contemplation, individual nature experience, hear sound of woods – even if taped sounds (9)

- Musical instruments made of natural objects
- Natural "chapel" for quiet reflection
- Nature playground, area, dedicated, contents (5):
  - Acorns
  - Acoustic play
  - Balancing
  - Building
  - Climbing, nature-based structure (3)
  - Climbing (2)
  - Digging (2)
  - Digging/earth play/fossils
  - Flower spinner
  - Gnome houses, with natural materials (2)
  - Hills
  - Leaves
  - Ledges
  - Logs
  - Logs
  - Logs to balance
  - Loose parts
  - Loose parts play
  - Mud kitchen (23)
  - Natural playful building with found objects/natural materials
  - Pinecones
  - Play equipment/structures
  - Playing
  - Rocks
  - Rocks
  - Rock-stacking
  - Scaling wall
  - Slide (2)
  - Structures
  - Swing
  - Swings
  - Tree canopy walks, vines, rope bridges
  - Twigs
  - Volcano
  - Walls
  - Walls
- Obstacle course (3)
- Performance space, Amphitheater – concerts, theater (2)
- Physical activity stations like Utica Zoo
- Pickleball court
- Picnic areas, nature, community meet & greet, picnics (16)
- Play area of repurposed materials/items
- Playground experiences (25)
- Playground, adult (6)
- Playground for all ages
- Playground (upgrade (3)
- Pretty stones or fossils to take home (keep stocking)
- Recycling education area with conservation tips about how using them assists wildlife
- Rest stops (2)
- Retreat spaces, safe
- Rock wall (2)
- Ropes, low, course, swings (12)
- Secondary paths/trails
- Self-discovery areas
- Sensory garden with touch and sounds related to nature (2)
- Sensory path

- Sledding area (2)
- Small gathering
- Sounds of nature garden
- Sprinkle park
- Stepping-stone path for learning numbers
- Stream access
- Storytelling circle
- Tactile stations interaction with objects – rocks, feel leaves, bark, etc.
- Thinking spots – hidden
- Tree houses, forts, unique (12)
- Towers, observation (3)
- Trampoline set in the ground – bouncy ground area
- Tubing
- Undeveloped area for independent exploration
- Vibrant, colored structures
- Water play, wading pool, hot spring, features, elements (10)
- Wildlife habitats, observable
- Write-on boards for day's observations shareable with others
- Writers' area for reading books
- Zip line (5)

COMPONENTS/FEATURES

- AR animals that someone can take a picture with.
- Animal posters
- Animal statues
- Animals, larger, reptiles, roaming native (4)
- Artwork, 2- & 3-dimensional
- Assistive devices for hearing animal sounds
- Bird feeders (2)
- Bird watching signs/details
- Bridge, over "something" (4)
- Colors – lots
- Connect people to know each other
- Educational board along a trails highlighting nature within the trail, such as a spot where an endangered species is highlighted each month (such as pangolins).
- Flora signs
- Drinking fountains (2)
- Invasive species display
- Lights
- Logs
- Looking tools (binocs, lenses) for kids to run and explore plant and animal life.
- Nature labels (2)
- Participant displays
- QR codes (2)
- Rainwater harvesting
- Seating (2), Benches (6), with view, accessible that older adults can get in and out of
- Sculptures, interactive
- Shade devices and structures
- Sign QR code to unlock hidden things (2)
- Signage – visual / artistic, interactive, animal, braille, just pictures, sounds, words, creative reminders and examples throughout the zoo, trails & nature play areas. Highlight the old lion cage, explain how conservation has changed over the years (7)
- Signage showing how to help the environment (no taking or leaving, plaques/ info stations. (5)

- Signs colorful, child-friendly, easy read, weather-proof, depicting animals in given areas, what may live there, be seen, times, frequent activities, animal facts, (8)
- Significant feature place markers
- Small-mammal feeders
- Sounds, acoustic, natural, amplified with explanatory text
- Trash and recycle receptacles.
- Tunnels
- Wildflowers (3)

PROGRAMMING

- Acoustic explorations.
- Activities in general (8)
- Animal-body activity on natural structures – climbing, crawling, hopping, sliding, walking, running
- Animal encounters, interactions, increased (9)
- Animal facts age-related (when snow leopards are 5 they... when 10 they...)
- Animal homes adventure play/building.
- Animals (ID, feeding, games, care, footprint fun, trails, tracking, (frogs, garden, to work in, info panels, ID 11)
- Animals (including humans) live off the Earth
- Animals that kids like, chosen to answer questions and feel connected.
- Animal life education (13)
- Animals, feeding (7)
- Animals not just for people to look at. Provide information to help visitors understand the roles animals play in the ecosystem, social life, threats in the wild, etc. Excite people about nature
- Animal, bat colony implementation program to keep down mosquito populations
- Animal sounds amplified with speaker.
- Animal stories narrated as you walk
- Aquatic, pond activities, fishing, fish hatching (7)
- App with zoo games and learning and blog articles
- Arts-based expressions (play music, sing, dance, perform, dramatize, record) (2)
- Audio guided tours, education (4)
- Bats at night program
- Bike race
- Bird (watching, birdsong (2)
- Birds (watching, connect to Cornell Lab of Ornithology (2)
- Birds—owl pellet dissection (2)
- Bug search and find event
- Butterfly garden, house, Monarch butterfly life cycle stages info by milkweed (3)
- Camp, day (2)
- Catch and release
- Cell phone macros
- Charity walks
- Child-created field guide to Ross Park, showing animals, insects, plants ¬– related to the Zoo. photo contest using smart phones. (3)
- Classes on trails, at creek, in Zoo, painting (4)
- Classes, bird watching (5)
- Classes, insects (3)
- Classes for adults (3).
- Climbing.
- Crafts, nature, with things found in the woods (10)

- Discovery Center links
- Docents strategically placed
- Docent opportunities
- Earth science topics – erosion and acid rain, using examples in Ross Park
- Eco-friendly living
- Education, general (4)
- Education opportunities (2)
- Educational crafts
- Electronic interactive learning activities
- Endangered animal risks
- Equipment loans: binocs, magnifying glasses, sketch pads.
- Exhibits always changing
- Events, theatre (5)
- Events, live music (4)
- Events, seasonal, holiday (18)
  - Halloween (6)
  - General (5)
  - Winter holidays (5)
  - Egg hunt (2)
- Events, family, homeschooler
- Event lights at night, night activities, dusk hike, evening hours, twilight stroll, night under the stars (26)
  - Stargazing (4)
  - Lantern events (3)
  - Campfire & S'mores (3)
  - General (2)
  - Firefly count (1)
- Event, sponsored food
- Event – RC car Binghamton, side visit?
- Fallen foliage composts naturally, provides food that helps build soil and ecosystem
- Farmers market
- Flat stone collection to assist in erosion prevention.
- Games for learning about flora and fauna, flower/tree hunt (2). Clues. Pictures for spotting animals
- Gardening (hands-on participation, cycle of life, from compost to food and back to compost, helpful and harmful bugs, Square foot minimal space lessening impact, in our own backyards, learn about composting (7)
- Geology fun quiz
- Ground surface/soil exploration
- Habitat exploration
- Hands-on nature, activities/ learning, puzzles, problem-solving (16)
- History of area, park history, historical themes (5)
- Home study curriculum
- How DID indigenous residents survive the winter
- How many of X observed? – monthly activity goals
- Human responsibility for the natural world
- Human vs animal growth/ lifecycle.
- Human vs tree growth/ lifecycle.
- Hunts, treasure, plants, animals, wildlife, bugs, secret worlds, fossil, maps, checklists, seasonal, trails, compass-directed with set checkpoints (12)
- Hunts, scavenger (35)
- Impacts of good vs poor practices
- Incorporate 30x30 messaging and calls to action
- Invasive species – identify common
- Invite individual experts on topics such as

bee-keeping, maple syrup, lumber

- Keeper talks.
- Land and community historic connections
- Leaves (Fall collection, ID game (2)
- Microbial environment
- Movement exploration/PE/motor skills for interdisciplinary learning, storytelling (4)
- Music outdoors
- Music via wi-fi to complement area/activity. Time it takes to walk the trail rock for fast, symphony for slow – composed for the park
- Native American use of animals/trees
- Native plants, identify, explain role of biodiversity
- Native wildlife protection
- Nature book pages along trail like at state park
- Nature experience workshops
- Nature posts
- Nature walks
- Nature-based art
- Overnight camping
- Photo contest, social media
- Plant life education, (ID, native, along trails, animal associations, kids understand, milkweed-Monarch (27)
- Play
- QR codes for interactivity
- Recorded exhibits info
- Renewable energy program, reflecting local growth of solar and wind farms
- Rock formations, riverbeds, diagrams
- Rocks local ID
- Scavenger hunt, adult (3)
- School field trips – day long
- Science experiments
- Scouts/Junior Rangers, collaborate on badge work (5)
- Seasonal activities
- Seasonal life cycles of plants and wildlife
- Sensory activities, engaged with animal exhibits (3)
- Sensory activities.
- Show-and-tells
- Smell/scent-based nature activities (3)
- Solving nature mysteries.
- Sounds of nature (2)
- Sounds of music in nature
- Stories related to surroundings, with animals (2)
- Storyboards
- Stream habitat exploration
- Study local animal habitats
- Survival courses (4)
- Tactile experiences with plants, trees, etc.
- Talks about how pollution affects health of humans, plants, and animals. How generate less carbon dioxide. Effects of invasive species. Benefits that coyotes bring in terms of predator-prey balance. Water conservation (6)
- Tire swings connected to a large tree, basic, fun information about physics of swinging
- Touch-and-feel exhibits
- Trail maintenance activities geared toward specific ages
- Tree planting events (2)
- Tree identification fun quiz (2)

- Variety of materials and awareness of levels of ability and interests
- Visual search: "look for this, look at that"
- Volunteer biologists, botanists, geologists, etc.
- Walking speed race
- Water features, waterfall (2)
- Water panning for minerals and gems.
- Weather learning
- Wine night (2)
- Winter animal tracks
- Yoga, with animals (2)
- Younger ages as junior docents
- Zookeeper and animal ambassador talks (2)
- Zookeeper Jr training
- Zoomobile experiential approach to animals changes hearts and helps people become more interested in conservation

MARKETING

"What marketing actions are needed to increase admission revenue and grow other earned income areas?"

Advertising

- Weekly/monthly discounts (2)
- Target programs towards age groups and adults (2)
- Increase PR
- Increase social media more
- Illumination advertising
- Augmented reality/app
- Longer season advertising

Partnership/collaboration

- Sponsorship opportunities for stations/ waypoints along trail
- Integrate badge into Boy and Girl Scouts
- Partner with Spiedie Fest (3-day hot air balloon rally expo, live music, and more, in Otsiningo Park, Binghamton)
- Increase public funding (2)
- Organize school competitions

PURCHASED EXPERIENCES

- Memorial bricks and benches
- Butterfly release where guests pay to release a monarch butterfly
- Interactive exhibits (4)
- Animal interaction experience (3)
- Rent event space. Nature weddings and photo shoots (2)
- Add to admission for nature play activities (2)
- Discounts for members
- Mountain bike rentals


ROSS

APPENDIX B

Community Survey Results

STEP 2: Results compiled for each segment in standardized categories.

ROSS PARK ZOO COMMUNITY N=139

More than half (64%) of respondents were Zoo members.

Respondents included 18 Zoo staff, 15 volunteers / docents, and 3 board members.

Three-quarters of respondents visited Ross Park, with children across a broad age range, preschool to 18.

Ross Park visits were mainly for recreation and relaxation, equal to participation in educational and special events.

Non-visitors were retired and lacked children to accompany as they were adult and/or no grandchildren lived locally.

Favorite places for families:

- Whole zoo
- Petting zoo
- Animals in general
- Individual animals
- Playground.

Favorite because of opportunities for children unavailable elsewhere:

- Free play
- Hands-on activities
- Animal interactions.

Responses were categorized and merged from the following questions:

- "What makes a place support free-ranging children's wild adventures in nature?"
- "What makes a place support experiential learning, where children and adults can explore the natural world through self-directed activities?"
- "What makes a place support child development (intellectual, physical, social, emotional, spiritual)?"
- "What makes a place support interdisciplinary environmental education?"
- "What makes a place support different learning styles and engage visitors with varied levels of ability?"
- "What makes a place support authentic, self-directed experiences with nature?"
- "What makes a place where conservation and environmental stewardship are emphasized?"
- Results from the final question, "What marketing actions are needed to increase admission revenue and grow other earned income areas?" are included at the end of this Ross Park Zoo Community section.

OVERALL

- Inclusive of all abilities (2)
- Disability needs (braille, ramps, spacing, etc.)
- Age-appropriate
- Freedom of movement and varied possibilities for seating, standing, interacting.
- Age-group stations (younger more sensory interactive; older, more reading / cognitive).
- Inter-generational
- Interactive
- Seasonal
- Sustainable natural materials in exhibits, handouts rather than single use (2)
- Abundant nature, forest play, hide & seek, Ninja course between trees, obstacle course (6)
- Children unleashed, exploring, in fresh air
- Engage children to spend time there, seating for adults
- Adventure encouraged without being overly risky (remove unsafe, dead trees, sharp rocks, etc.)
- Relaxing, rest & recovery (2)
- Calm/quiet (corners, eating/resting/ reflection, rocker benches, grounding, meditation sound of running water for children to center themselves (6)
- Classical music
- Colorful sensory playscape
- Encourage basic manners and kindness
- Recognize climate change
- Weather impact on nature and nature response.
- Sensory items in the woods that kids can touch, smell, see, do, accessible night, monthly
- Auditory learning spaces, sounds/recordings or interactive apps tied to specific spaces (2)
- Bird call identification, birdsong classes (2)
- Tactile – touch trees.
  Wear mask and feel environment
- Visual – both natural and made items – sight – tree identification (2)

TRAIL CORRIDOR

- Primary, accessible, smooth pathway/trail surfaces for wheelchair and stroller access with levels of ability / challenge (2).
- Nature trails/pathways – guided hikes, walking, plant ID, wildlife ID, chipmunk alley, tree ID, scavenger, fitness, upper path, evening program lighting (26)
- Stations with suggestions for brief nature experiences (2).
- Interactive app., encouraging path exploration
- Pathways with reminder stepping stones (2)
- Seating to watch birds, squirrels, chipmunks, etc.
- Environment-related informational signage
- A mushroom and fungi informational scavenger hike (signage).
- Trail safety (both signage and design strategies) (2).
- Mountain biking trails
- Guided hikes (day, night, different age groups) (3)
- Gathering spaces along trails to sit and discuss lessons or relax.
- Varied picnic tables with grills along trails
- A nature scavenger hunt trail/area (2)

ACTIVITY SETTINGS

- Classroom outdoors, large, covered gathering

- Classroom "longhouse" built by participants in a program designed to learn about Native Americans/indigenous people, their use of natural resources and beliefs about nature.
- Classroom/outdoors pavilion (year-round programming, access to materials and tools).
- Covered/enclosed fieldhouse, kiosks cheerfully painted, clean, maintained, sufficient space, lighting for cloudy days; multifunctional structures; room; pavilion; covered, open, prevents weathering of educational materials; educational center; flora observation stations; fauna listening stations; live specimens; virtual reality safari (13).
- Education pavillion with various programs (2)
- Interactive kiosks/stations
  - Geocaching
  - Observation station
  - Letterboxing
  - Storyboards
  - Scavenger hunt
  - Exercise
  - Weather
- Educational exhibits
  - Plant ID
  - Animals/habitat, including animal footprints and sounds
  - Ancestral lands
  - Park history
  - QR codes
  - Hydrology
  - Geology
- Interactive exhibits – like bird wingspan display by the aviary (popular with kids and families).
- Classroom indoors
- Creater spaces to draw animals, etc. (2)
- Drawing/art area in nature
- Writers' area for reading books
- Historical context maps on display
- Learning library
- Kid in the 70's, Ross Park always open to ride bikes
- Interactive exhibits such as recycling grey water from a hand washing station next to the bathrooms (3)
- Accessible bathrooms and water fountains
- Camping overnight platform tents, Swedish Shelters, cabins (3)
- Play area of repurposed materials/items
- Playground (2)
- Playground (upgrade (3)
- Nature Play Area, dedicated
  - Mud kitchen
  - Acoustic play
  - Tree house
  - Climbing and balancing
  - Rocks
  - Logs
  - Play equipment/structures
  - Walls
  - Ropes
  - Swings
  - Loose parts play
  - Slide
  - Digging/earth play/fossils

- Natural playground climbing, building, playing, digging, rocks, logs, walls, hills, ropes, swing, structures, volcano, scaling wall, ledges, logs to balance, loose parts/ natural playful building with found objects/ natural materials, twigs, pinecones, leaves, acorns, etc., gnome houses, with natural materials (2), tree houses/forts (6), tree canopy walks, vines, rope bridges, flower spinner, mud kitchen (22 total)
- Vibrant, colored structures
- Animal-themed playground homes, monkey climb, spider ropes, meerkat, prairie dog, crawling, tunnels (2), groundhog tunnels (3)
- Animal/habitat play
  - Eagle's nest
  - Groundhog tunnels
  - Spider's web
- Bird watching designated areas (4)
- Blinds with seating for full habitat observations (birds, deer, squirrels) (3)
- Maple tap, sugar shack, maple syrup
- Garden, edible, designated, herbs (8) – showing impact of plastic consumption and disposal on nature over time
- Gardens, maze, play, walk through (4)
- Garden, informational, local fauna, flora, wildflower, butterfly plants (7) pollinator plantings
- Compost education, community (4)
- Meditation space, labyrinth path, self-guided, Zen, quiet nooks/contemplation, individual nature experience, hear sound of woods – even if taped sounds (8)
- Labyrinth – with tree at center
- Hammock area for relaxation (2)
- Musical instruments made of natural objects
- Natural "chapel" for quiet reflection
- Performance space, Amphitheater – concerts, theater (2)
- Physical activity stations like Utica Zoo
- Picnic areas in nature (2)
- Recycling education area with conservation tips about how using them assists wildlife
- Lookouts – for birding or renovated for downtown views (2)
- Ropes course
- Secondary paths/trails
- Sensory garden with touch and sounds related to nature (2)
- Sensory path
- Sledding area
- Small gathering
- Sounds of nature garden
- Stepping-stone path for learning numbers
- Storytelling circle
- Tactile stations interaction with objects – rocks, feel leaves, bark, etc.
- Undeveloped area for independent exploration
- Water area, pond with fish, Koi, frogs for kids to watch, listen explore, observe, messy, dirt, sand, creek access (4)
- Fossils, excavate, identify fossils, authentic or fake (2)
- Geology, water, local study, lab
- Pretty stones or fossils to take home (keep stocking)
- Cleared, open space to run, jump, walk, exercise (3) – with limited visual barriers to monitor my kids
- Zip line

- Disc-golf course
- Pickleball court
- Low ropes/obstacle course (3)

COMPONENTS/FEATURES

- "Looking tools" binocs, lenses for kids to run and explore shrubs and other plant life.
- AR animals that someone can take a picture with.
- Artwork, 2- & 3-dimensional
- Assistive devices for hearing animal sounds
- Benches (2) accessible that older adults can get in and out of
- Bird feeders (2)
- Bird watching signs/details
- Bridge, over "something" (2)
- Connect people to know each other
- Educational board along a trails highlighting nature within the trail, such as a spot where an endangered species is highlighted each month (such as pangolins).
- Rainwater harvesting
- Shade devices and structures
- Sign QR code to unlock hidden things
- Signage – visual / artistic, interactive, animal, braille, just pictures, sounds, words, creative reminders and examples throughout the zoo, trails & nature play areas. Highlight the old lion cage, explain how conservation has changed over the years (4)
- Signage showing how to help the environment (no taking or leaving, plaques/info stations. (5)
- Signs colorful, child-friendly, easy read, weather-proof, depicting animals in given areas, what may live there, be seen, times, frequent activities, animal facts, (8)
- Small-mammal feeders
- Sounds, acoustic, natural, amplified with explanatory text
- Tunnels
- Trash and recycle receptacles.

PROGRAMMING

- Night under the stars
- Animal body activity on natural structures – climbing, crawling, hopping, sliding, walking, running
- Animal encounters
- Animal facts age-related (when snow leopards are 5 they... when 10 they...)
- Animal homes adventure play/building.
- Animal interactions
- Animals (ID, feeding, games, care, footprint fun, trails, tracking, (frogs, garden, to work in, info panels, ID 11)
- Animals (including humans) live off the Earth
- Animals kids like, chosen to answer questions and feel connected.
- Animals not just for people to look at. Provide information to help visitors understand the roles animals play in the ecosystem, social life, threats in the wild, etc. Excite people about nature
- App with zoo games and learning and blog articles
- Arts expressions (play music, sing, dance, perform, dramatize, record)
- Audio guided tours
- Bird (watching, birdsong (2)
- Birds (watching, connect to Cornell Lab of Ornithology (2)

- Butterfly garden, house, Monarch butterfly life cycle stages info by milkweed (3)
- Child-created field guide to Ross Park, showing animals, insects, plants – related to the Zoo. photo contest using smart phones (3)
- Classes on trails, at creek, in Zoo
- Talks about how pollution affects health of humans, plants, and animals. How generate less carbon dioxide. Effects of invasive species. Benefits that coyotes bring in terms of predator-prey balance. Water conservation (6)
- Crafts with things found in the woods
- Rock formations, riverbeds, diagrams
- Docents strategically placed
- Earth science topics – erosion and acid rain, using examples in Ross Park
- Eco-friendly living
- Electronic interactive learning activities
- Endangered animal risks
- Fallen foliage composts naturally, provides food that helps build soil and ecosystem
- Flat stone collection to assist in erosion prevention.
- Games for learning about flora and fauna, flower/tree hunt (2). Clues. Pictures for spotting animals
- Gardening (hands-on participation, cycle of life, from compost to food and back to compost, helpful and harmful bugs, Square foot minimal space lessening impact, in our own backyards, learn about composting (7)
- Geocaching
- Ground surface/soil exploration
- Hands-on activities/ learning, puzzles, problem-solving (8)
- Home study curriculum
- Human responsibility for the natural world
- Human vs animal growth/ lifecycle.
- Human vs tree growth/ lifecycle.
- Hunts, scavenger, treasure, plants, animals, wildlife, bugs, secret worlds, fossil, maps, checklists, seasonal, trails, compass-directed with set checkpoints (12)
- Impacts of good vs poor practices
- Incorporate 30x30 messaging and calls to action
- Invite individual experts on topics such as bee-keeping, maple syrup, lumber
- Keeper talks.
- Land and community historic connections
- Leaves (Fall collection, ID game (2)
- Microbial environment
- Native American use of animals/trees
- Native wildlife protection
- Nature book pages along trail like at state park
- Nature experience workshops
- Nature posts
- Nature-based art
- Overnight camping
- Plants (ID, native, along trails, animal associations, kids understand, milkweed-Monarch (11)
- QR codes for interactivity
- Recorded exhibits info
- Renewable energy program, reflecting local growth of solar and wind farms
- Rocks local ID
- School field trips – day long
- Seasonal life cycles of plants and wildlife

- Sensory activities, engaged with animal exhibits (3)
- Sensory activities.
- Smell/scent-based nature activities (3)
- Solving nature mysteries.
- Sounds of nature (2)
- Stories related to surroundings.
- Storyboards
- Stream habitat exploration
- Study local animal habitats
- Tactile experiences with plants, trees, etc.
- Tire swings connected to a large tree, basic, fun information about physics of swinging
- Touch-and-feel exhibits
- Trail maintenance activities geared toward specific ages
- Tree planting events (2)
- Variety of materials and awareness of levels of ability and interests
- Volunteer biologists, botanists, geologists, etc.
- Water features, waterfall (2)
- Water panning for minerals and gems.
- Weather learning
- Younger ages as junior docents
- Zookeeper and animal ambassador talks (2)
- Zookeeper Jr training
- Zoomobile experiential approach to animals changes hearts and helps people become more interested in conservation

MARKETING

- "What marketing actions are needed to increase admission revenue and grow other earned income areas?"
- Advertising
- Weekly/monthly discounts (2)
- Target programs towards age groups and adults (2)
- Increase PR
- Increase social media more
- Illumination advertising
- Augmented reality/app
- Longer season advertising
- Partnership/collaboration
- Sponsorship opportunities for stations/ waypoints along trail
- Integrate badge into Boy and Girl Scouts
- Partner with Spiedie Fest (3-day hot air balloon rally expo, live music, and more, in Otsiningo Park, Binghamton)
- Increase public funding (2)
- Organize school competitions

PURCHASED EXPERIENCES

- Memorial bricks and benches
- Butterfly release where guests pay to release a monarch butterfly
- Interactive exhibits (4)
- Animal interaction experience (3)
- Rent event space. Nature weddings and photo shoots (2)
- Add to admission for nature play activities (2)
- Discounts for members
- Mountain bike rentals

EDUCATORS

N=41

Forty-one respondents were educators (less than 10%). Of those, 14 were public school teachers.

Other educators were mainly college faculty or retired. The remainder covered a broad range of educational roles.

Students taught ranged from preschool to high school to college.

Nearly all educators visited Ross Park, mainly for recreation and special events. Less for education.

Main content areas mentioned:

- Natural history
- Conservation
- STEM
- Health education.

Respondent comment:

> *"STEAM, not STEM.*
> *Do not leave the arts out of the trail."*

"If trail contained preferred content areas, how often would you visit with your students?"Answers ranged from "at least once a month" to "more than twice a year" to "not sure" to "My students would help with educational visits by others."

"What educational features would encourage repeat visits?"

TRAIL CORRIDOR

- Trail installed at Letchworth for sensory-friendly ideas.
- Wild Center trail at Tupper Lake. Recreate their forest play area.

ACTIVITY SETTINGS

- "Anarchy Zone" like Ithaca Children's Garden
- Natural playgrounds
- Playscape at Briar Bush Nature Center in PA
- Bird viewing/feeding station with sound amplifiers
- Rope swings
- Self-discovery areas
- Self-guided walking stations
- Trampoline set in the ground – bouncy ground area
- Write-on boards for day's observations shareable with others

DISPLAYS/SIGNS

- QR codes
- Animal posters
- Nature labels (2)
- Participant displays
- Significant feature place markers

PROGRAMMING

- Seasonal activities
- Cell phone macros
- Arts-based activities
- Discovery Center links
- Educational crafts
- Equipment loans: binocs, magnifying glasses, sketch pads
- Events
- Exhibits always changing
- Show-and-tells
- Geocaching
- Geology fun quiz
- Hands-on-nature (2)
- History of area
- How DID indigenous residents survive the winter
- How many of X observed? – monthly activity goals
- Identify common invasive species
- Habitat exploration
- Identify native plants, explain role of biodiversity
- Interactive play
- Movement exploration/PE/motor skills for interdisciplinary learning, storytelling (4)
- Encourage climbing
- Scavenger hunt (2)
- Tree identification fun quiz
- Speaker with animal sounds
- Sounds of music in nature
- Acoustic explorations
- Winter animal tracks

LOCAL ORGANIZATIONS N=26

Twenty-six (5%) of respondents were local organizations.

Interests included special needs, youth, culture, music, environment, naturalist, hiking, public health, group home, charitable giving, local business, The Story Garden.

Organizations served all age groups.

All used Ross Park, mainly for recreation, relaxation, de-stressing, and special events. Few for education.

Favorite places were similar to other groups and used for similar reasons.

"What would encourage repeat visits?"

TRAIL CORRIDOR

- Marked trail signs
- Natural trail
- Nature trails
- Smooth pathways
- Trail – Alpine
- Trails – hiking
- Trails to learn from

ACTIVITY SETTINGS

- Building/pavilion
- Mud kitchen
- Nature-based climbing structures
- Observable wild habitats
- Birdhouses - educational
- Bird feeding station with observation area
- Bird viewing
- Playground for all ages
- Pond or wetland
- Public bathrooms
- Safe retreat spaces
- Slide
- Sprinkle park
- Thinking spots – hidden
- Unique tree houses
- Bungee jump
- Exercise stations (2)
- Group gathering
- Meditation area
- Music stations
- Sensory station

COMPONENTS/FEATURES

- Animal statues
- Benches (2)
- Benches with a view
- Logs
- Peddle ride
- Tunnels (2)
- Bridges
- Drinking fountains (2)
- Flora signs
- Colors – lots
- Invasive species display
- Park history display
- ACTIVITIES
- Climbing
- Geocaching
- Tree identification

PROGRAM

- Music via wi-fi to complement area/activity – perhaps in time it takes to walk the trail rock for fast, symphony for slow – composed for the park
- Animal stories narrated as you walk
- Observation points of interest – changing
- Charity walks
- Docent opportunities
- Evening hours, twilight lighting for evening stroll
- Visual search: “look for this, look at that”

DISCOVERY CENTER PARENTS N=14

12 of 14 respondents visited the park

Nonvisitors (2):

- Live too far away
- "Had a baby and thought he would be too young to enjoy – will return when he's older"

Accompanied children

- Mainly under 5 to 8 years old.

Favorite places:

- Storybook Garden (4)
- Animal exhibits (3)
- Zoo trails

Reasons for being favorite:

- Interacting with animals (3)
- Financially accessible for community who otherwise can't afford
- Being outdoors in nature
- Great place for a shady walk
- Easy for my special needs child
- Hands on experiences

"What would encourage repeat visits?"

TRAIL CORRIDOR

- Opportunities along trail (8)

ACTIVITY SETTINGS

- Picnic area
- Play area (2)
- Stream access
- Rest stops (2)
- Treehouse
- Water play
- Fairy garden exploration

COMPONENTS/FEATURES

- Bridge
- Seating (2)
- Accessible

ACTIVITES

- Education opportunities (2)
- Hands-on activities (2)
- Climbing
- Digging play
- Bird watching
- Night/dusk hike
- Rock stacking
- Science experiments
- Tubing/sledding
- Water play

PROGRAM

- Outdoor music
- Bats at night program
- Lights at night event
- Bike race
- Bug search and find event
- Family events
- Homeschool event
- Nature walks (3)
- Owl pellet dissection (2)
- RC car event (RC Binghamton), side visit?
- Speed walking race
- Sponsored food event

"If provided, how often visit?"

- Majority more than twice a year.

GENERAL PUBLIC

N=259

Half the respondents (54%) were General Public. Of these, 82% said they visited Ross Park.

Accompanied children were mainly under 8 years old.

Reasons for not visiting Ross Park included living too far away, having no children or children grown up, accessibility issues.

Park visits mainly for recreation, relaxation, and de-stressing, and to participate in special events. A minority of visits were for education.

Main attraction Zoo animals

- Penguins
- Wolves
- Otters
- Big cats.

Other animals mentioned:

- Arctic fox,
- Goats,
- Monkeys
- Owls
- Peacock,
- Polar bear
- Sloth
- Red panda (signature species but low mention rate).

Favorite space in Ross Park

- Upper Trail (three times more popular than the Lower Trail), followed by the "park in general."

Spaces attractive because:

- Visitor fondness for animals
- Quality of animal observations
- Trail / hiking qualities
- Ambient natural, shady, relaxing aesthetic
- Positive family experiences

"What physical settings, features or activities would encourage repeat visits?"

TRAIL CORRIDOR

- Trail expansion program (6)
- High quality walking / hiking trails
- Fitness stations (6)
- Rentals (3)
  - Bikes
  - Snowshoes
  - Carriage rides
- Guided hikes (20)
  - Guided night hikes (2)
  - Birdwatching hikes (3)
- Hiking challenge rewards
- Bathroom along trail

ACTIVITY SETTINGS

- Natural playground
- Interactive educational play spaces
- Aquatic settings and features
- Gardens (17)
  - Fairy garden (5)
  - Animal themed (6)
  - Wildflower (3)
  - Rock garden
  - Botanical garden
- Water features (5)
  - Pond activities (3)
  - Wading pool
  - Hot spring
- Picnicing activity area (4)
  - Fire pit
  - Water bottle refilling station
  - Lights
  - Benches
- Observation towers (3)
- Landscape display program sponsored by local groups (2)

COMPONENTS/FEATURES

- Accessibility
- Interactive sculpture
- QR codes (2)
- Signage (3)

ACTIVITIES

- Playground experiences (23)
  - Ropes course (7)
  - General (5)
  - Zip Line (4)
  - Treehouse (3)
  - Rock wall (2)
  - Maze
  - Water elements
- Animal-related
- Feeding animals (7)
  - Hands-on (5)
  - Observation (2)
- Increased animal interaction (8)
  - General (3)
  - Fishing (2)

- Fish hatching
- Catch and release
- Butterfly House
- Yoga with animals
- Story times with animals

- Observation opportunities (8)
  - Roaming native animals (4)
  - Reptiles (2)
  - Aquatic
  - Larger animals
- Bat colony implementation program to keep down mosquito populations
- Geocaching (3)
- Scavenger hunts (33)
- Adult-related
- Adult Playground (6)
- Adult scavenger hunts
- Mushroom foraging (5)
- Night activities (5)
  - Wine night (2)
  - Historical themes (2)
- Classes for adults (3)
  - Painting
  - Yoga

PROGRAMMING

- Nature craft sessions (9)
- Sustainability (7)
- Day camps (2)
- Scouts/Junior Rangers (5)
- Survival courses (4)
- General education (4)
- Plant life education (16)
- Education about history
- Animal life education (13)
  - Bird watching classes (5)
  - Insects (3)
- Audio education (3)
- Seasonal/Holiday events (18)
  - Halloween (6)
  - General (5)
  - Winter holidays (5)
  - Egg hunt (2)
- Night events (13)
  - Stargazing (4)
  - Lantern events (3)
  - Campfire & S'mores (3)
  - General (2)
  - Firefly count (1)
- Community meet & greet (5)
  - Picnics (2)
- Theatre events (5)
- Live music (4)
- Farmers market
- Social media photo contests
- Hot air balloon viewing events (2)

APPENDIX C

Community Survey Results

STEP 1: Results compiled for each segment by question.

The community survey was transmitted to a list of 4,683 email addresses. Responses were received from 479 – a %10 rate. Predefined community segment responses were in the following rank order:

- ROSS PARK ZOO COMMUNITY, 139
- EDUCATOR OR EDUCATIONAL ORGANIZATION, 41
- LOCAL ORGANIZATION, 26
- DISCOVERY CENTER PARENT, 14
- GENERAL PUBLIC, 259

TOTAL RESPONSE: 479

ROSS PARK ZOO COMMUNITY N=139

More than half (64%) of respondents were Zoo members.

Respondents included 18 Zoo staff, 15 volunteers / docents, and 3 board members.

Three-quarters of respondents visited Ross Park, with children across a broad age range, preschool to 18.

Ross Park visits were mainly for recreation and relaxation, equal to participation in educational and special events.

Non-visitors were retired and lacked children to accompany as they were adult and/or no grandchildren lived locally.

Favorite places for families:

- Whole zoo
- Petting zoo
- Animals in general
- Individual animals
- Playground.

Favorite because of opportunities for children unavailable elsewhere:

- Free play
- Hands-on activities
- Animal interactions.

"What makes a place support free-ranging children's wild adventures in nature?"

OVERALL

- Abundant nature, forest play, hide & seek, Ninja course between trees, obstacle course (6)
- Children unleashed, exploring, in fresh air
- Engage children to spend time there, seating for adults
- Adventure encouraged without being overly risky (remove unsafe, dead trees, sharp rocks, etc.)
- **Relaxing, rest & recovery (2)**

TRAILS

- Trails designed for children that meanders, with climbing, different colors, confidence course (9), marked for kids to use with general direction, "just stay on the trail," accessible, free of plants, twigs, leaf piles that may harbor tics, etc.
- Upper exploration trail for plants and animals

SETTINGS

- Writers' area for reading books
- Cleared, open space to run, jump, walk, exercise (3) ¬– with limited visual barriers to monitor my kids
- Pickleball court
- Ropes course
- Sledding area
- Disc-golf course
- Stepping-stone path for learning numbers
- I was kid in the 70's, Ross Park always open to ride bikes
- Vibrant, colored structures
- **Playground** (upgrade (3)
- **Natural playground** climbing, building, playing, digging, rocks, logs, walls, hills, ropes, swing, structures, volcano, scaling wall, ledges, logs to balance, loose parts/natural playful building with found objects/natural materials, twigs, pinecones, leaves, acorns, etc., gnome houses, with natural materials (2), tree houses/forts (5), vines, rope bridges, flower spinner, mud kitchen (21 total)
- Animal-themed playground homes, monkey climb, spider ropes, meerkat, prairie dog, crawling, tunnels (2), groundhog tunnels (3)
- Space with pretty stones or fossils to take home (keep stocking)
- Wildflower gardens, butterfly plants
- Sounds of nature garden
- Children's garden (2)

COMPONENTS

- Bird feeders (2)
- Small-mammal feeders
- Wildlife that "might" live there
- Bridge over "something"
- "Looking tools" binocs, lenses for kids to run and explore shrubs and other plant life.
- Signs colorful, child-friendly, weather-proof, depicting animals in given areas (3)

PROGRAMMING

- Hands-on activities/puzzles/ problem-solving (4)
- Animal interactions
- Child-created field guide to Ross Park, showing animals, insects, plants ¬– related to the Zoo. photo contest using smart phones (3)

- Games for learning about flora and fauna, flower/tree hunt (2). Clues. Pictures for spotting animals
- Geocaching

"What makes a place support experiential learning, where children and adults can explore the natural world through self-directed activities?"

SETTINGS

- Trails/pathways (guided hikes, walking, plant ID, wildlife ID, chipmunk alley, tree ID, scavenger, fitness, upper path, evening program lighting (14
- Covered/enclosed fieldhouse, kiosks cheerfully painted, clean, maintained, sufficient space, lighting for cloudy days; multifunctional structures; room; pavilion; covered, open, prevents weathering of educational materials; educational center; flora observation stations; fauna listening stations; live specimens; virtual reality safari (13).
- Labyrinth with tree at center
- Koi pond

PROGRAMMING

- Docents strategically placed
- Audio guided tours
- School field trips – day long
- Sensory activities.
- Stories related to surroundings.
- Storyboards
- Stream habitat exploration
- Water panning for minerals and gems.
- Weather learning
- Zookeeper Jr training
- Hunts (scavenger, treasure, plants, animals, wildlife, bugs, secret worlds, fossil, maps, checklists, seasonal, trails, compass-directed with set checkpoints (12)
- Plants (ID, native, along trails, animal associations, kids understand, milkweed-Monarch (11)
- Animals (ID, feeding, games, care, footprint fun, trails, tracking, (frogs, garden, to work in, info panels, ID 11)
- Birds (watching, connect to Cornell Lab of Ornithology (2)
- Rocks local ID
- Leaves (Fall collection, ID game (2)
- Human vs animal growth/ lifecycle.
- Human vs tree growth/ lifecycle.
- Nature book pages along trail like at state park
- Nature posts
- QR codes for interactivity
- Recorded exhibits info

COMPONENTS

- Signs (children/easy read, mini (3)

"What makes a place support child development (intellectual, physical, social, emotional, spiritual)?"

OVERALL

- Age-appropriate
- Inclusive of all abilities (2)
- Calm/quiet (corners, eating/resting/

reflection, rocker benches, grounding, meditation sound of running water for children to center themselves (6)

- Classical music
- Colorful sensory playscape
- Encourage abundant basic manners and kindness
- Physical activity stations like Utica Zoo
- Planting garden beds or herb garden in designated areas.
- Playground (2)

SETTINGS

- Gathering spaces along trails to sit and discuss lessons or relax.
- Gardens (maze, play, walk through (4)
- Low ropes/obstacle course
- Messy play areas (water, dirt, sand, etc.)
- Natural "chapel" for quiet reflection
- Excavate, identify fossils (authentic or fake)
- Maple tap, sugar shack, maple syrup
- Meditation (space, labyrinth path, self-guided (3)

COMPONENTS

- Trail seating to watch birds, squirrels, chipmunks, etc.

PROGRAMMING

- Home study curriculum
- Overnight camping
- Native American use of animals/trees
- Nature-based art
- Animal encounters
- Animal body activity on natural structures – climbing, crawling, hopping, sliding, walking, running
- Butterfly garden, house, Monarch butterfly life cycle stages info by milkweed (3)
- Bird (watching, birdsong (2)
- Ground surface/soil exploration
- Sensory activities, engaged with animal exhibits (3)
- Study local animal habitats
- Microbial environment
- Tire swings connected to a large tree, basic, fun information about physics of swinging
- Touch-and-feel exhibits
- Water features, waterfall (2)
- "What makes a place support interdisciplinary environmental education?"

OVERALL/TOPICS

- Climate change
- Weather impact on nature and nature response.
- Freedom of movement and varied possibilities for seating, standing, interacting.
- Accessible smooth PATHWAY surfaces for wheelchair and stroller access.
- Age-group stations (younger more sensory interactive; older, more reading / cognitive).

SETTINGS/FACILITIES

- Camping overnight platform tents, Swedish Shelters, cabins.
- Classroom "longhouse" built by participants in a program designed to learn about Native Americans/indigenous people, their use of natural resources and beliefs about nature.

- Education pavillion with various programs (2)
- Classroom indoors
- Historical context maps on display
- Classroom/outdoors pavilion (year-round programming, access to materials and tools).
- Lab for local geology and water study.
- Learning library
- Creater spaces to draw animals, etc. (2)
- Musical instruments made of natural objects
- Fossil field / "excavation" site
- Interactive exhibits (2)
- Meditation spaces
- Pond / water area with fish, frogs for kids to watch, listen to, and observe
- Quiet settings to hear sound of woods (even if it's a room with taped sounds).

COMPONENTS

- Benches/accessible benches that older adults can get in and out of
- Labels on natural elements.
- Natural sounds amplified with explanatory text.
- Signs/plaques/info stations.

PROGRAMMING

- "Night under the stars."
- Animal homes adventure play/building.
- Animals (including humans) live off the Earth
- Animals kids like, chosen to answer questions and feel connected.
- Endangered animal risks
- Zoomobile experiential approach to animals changes hearts and helps people become more interested in conservation
- Animals not just for people to look at. Provide information to help visitors understand the roles animals play in the ecosystem, social life, threats in the wild, etc. Excite people about nature
- Arts expressions (play music, sing, dance, perform, dramatize, record)
- Earth science topics – erosion and acid rain, using examples in Ross Park
- Fallen foliage composts naturally, provides food that helps build soil and ecosystem
- Gardening (hands-on participation, cycle of life, from compost to food and back to compost, helpful and harmful bugs, Square foot minimal space lessening impact, in our own backyards, learn about composting (7)
- Flat stone collection to assist in erosion prevention.
- Eco-friendly living
- Impacts of good vs poor practices
- Renewable energy program, reflecting local growth of solar and wind farms
- Human responsibility for the natural world
- Keeper talks.
- Land and community historic connections
- Native wildlife protection
- Seasonal life cycles of plants and wildlife
- Classes on trails, at creek, in Zoo
- Solving nature mysteries.
- Trail maintenance activities geared toward specific ages
- Volunteer biologists, botanists, geologists, etc.

"What makes a place support different learning styles and engage visitors with varied levels of ability?"

OVERALL/ MULTISENSORY

- Quiet spaces / trail
- Auditory learning spaces, sounds/recordings or interactive apps tied to specific spaces (2)
- Bird call identification, birdsong classes (2)
- Sensory things in the woods that kids can touch, smell, see, do, accessible night, monthly
- Tactile – touch trees. Wear mask and feel environment
- Visual – both natural and made items – sight – tree identification (2)

SETTINGS

- Trails – accessible with levels of ability / challenge (2).
- Sensory garden with touch and sounds related to nature.
- Tactile stations to encouraged touch and interaction with objects – pick up rocks, feel leaves, bark, etc.
- Touch everything safely

COMPONENTS/ TECHNOLOGY

- Disability needs (braille, ramps, spacing, etc.)
- Signage – visual / artistic, interactive, animal, braille, just pictures, sounds, words
- Assistive devices for hearing animal sounds
- AR animals that someone can take a picture with.
- Connect people to know each other
- Interactive app., encouraging path exploration
- Scan a QR code to unlock hidden things

PROGRAMMING

- Animal facts age-related (when snow leopards are 5 they… when 10 they…)
- App with zoo games and learning and blog articles
- Crafts with things found in the woods
- Diagrams about rock formations, riverbeds, etc.
- Hands-on activities/ learning/spaces (4)
- Variety of materials and awareness of levels of ability and interests
- "What makes a place support authentic, self-directed experiences with nature?"

TRAILS

- Nature trails (4)
- Trail hikes (7)
- Stations with suggestions for brief nature experiences (2).
- Trail safety (both signage and design strategies) (2).
- Environment-related informational signage
- A nature scavenger hunt trail/area (2)
- Guided hikes (day, night, different age groups) (3)
- Varied picnic tables with grills along trails

SETTINGS

- Picnic areas in nature
- Camping areas
- Undeveloped area for independent exploration
- Edible garden
- A mushroom and fungi informational scavenger hike (signage).

- Local flora informational garden
- Meditation/zen garden (3)
- Private spaces for individual nature experience
- Hammock area for relaxation
- Drawing/art area in nature

ANIMAL INTERACTIONS

- Bird watching signs/details
- Designated bird watching areas (3)
- Observation blinds with seating for full habitat observations (birds, deer, squirrels) (2)
- Local wildlife plaques (what may be seen, times, frequent activities, animal facts, etc.).

PROGRAMMING

- Nature experience workshops
- Electronic interactive learning activities

SENSORY EXPERIENCE

- Interactive exhibits – like bird wingspan display by the aviary (popular with kids and families).
- Smell/scent-based nature activities (3)
- Sounds of nature (2)
- Tactile experiences with plants, trees, etc.

"What makes a place where conservation and environmental stewardship are emphasized?"

SETTINGS

- Composting education area (2)
- Community compost (2)
- Recycling education area with conservation tips about how using them assists wildlife
- Interactive exhibits such as recycling grey water from a hand washing station next to the bathrooms,
- Edible garden showing impact of plastic consumption and disposal on nature over time. (4)
- Local flora/wildflower garden (2)
- Play area of repurposed materials/items

COMPONENTS

- Creative signage, reminders and examples throughout the zoo, trails & nature play areas. Ex) Highlight the old lion cage (explain how conservation has changed over the years) (4)
- Signage showing how to help the environment (no taking or leaving, etc.) (4)
- Local flora and fauna (2)
- Educational board along a trails highlighting nature within the trail, such as a spot where an endangered species is highlighted each month (such as pangolins).
- Pathways with reminder stepping stones (2)
- Natural materials in exhibits
- Rainwater harvesting
- Sustainable handouts rather than single use

PROGRAMMING

- Tree planting events (2)
- Zookeeper and animal ambassador talks (2)
- Conservation talks about how pollution affects health of humans, plants, and animals. How generate less carbon dioxide. Effects of invasive species. Benefits that coyotes bring in terms of predator-prey balance. Water conservation (6)

- Invite individual experts on topics such as bee-keeping, maple syrup, lumber
- Incorporate 30x30 messaging and calls to action
- Younger ages as junior docents

"What marketing actions are needed to increase admission revenue and grow other earned income areas?"

ADVERTISING

- Weekly/monthly discounts (2)
- Target programs towards age groups and adults (2)
- Increase PR
- Increase social media more
- Illumination advertising
- Augmented reality/app
- Longer season advertising

PARTNERSHIP/COLLABORATION

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- Increase public funding (2)
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SETTINGS

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- Playscape at Briar Bush Nature Center in PA
- Rope swings
- Self-discovery areas
- Self-guided walking stations
- Trampoline set in the ground – bouncy ground area
- Write-on boards for day's observations shareable with others
- Encourage climbing

ANIMAL-RELATED

- Bird feeders
- Bird viewing station with sound amplifiers
- Habitat exploration

DISPLAYS/ SIGNS

- QR codes
- Animal posters
- Nature labels (2)
- Participant displays
- Significant feature place markers

SENSORY ENHANCEMENT

- Sounds of music in nature
- Acoustic explorations

PROGRAMMING

- Seasonal activities
- Cell phone macros
- Arts-based activities
- Discovery Center links
- Educational crafts
- Equipment loans: binocs, magnifying glasses, sketch pads
- Events
- Exhibits always changing
- Show-and-tells
- Geocaching
- Geology fun quiz
- Hands-on-nature (2)
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- How indigenous residents survived the winter
- How many of X observed? – monthly activity goals
- Identify common invasive species
- Identify native plants, explain role of biodiversity

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- Winter animal tracks

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Favorite places were similar to other groups and used for similar reasons.

"What would encourage repeat visits?"

TRAILS

- Marked trail signs
- Natural trail
- Nature trails
- Smooth pathways
- Trail – Alpine
- Trails – hiking
- Trails to learn from

SETTINGS

- Building/pavilion
- Mud kitchen
- Nature-based climbing structures
- Observable wild habitats
- Birdhouses - educational
- Bird feeding station with observation area
- Bird viewing
- Playground for all ages
- Pond or wetland
- Public bathrooms
- Safe retreat spaces
- Slide
- Sprinkle park
- Thinking spots – hidden
- Unique tree houses
- Bungee jump
- Exercise stations (2)
- Group gathering
- Meditation area
- Music stations
- Sensory station

COMPONENTS

- Animal statues
- Benches (2)
- Benches with a view
- Logs
- Peddle ride
- Tunnels (2)
- Bridges
- Drinking fountains (2)
- Flora signs
- Colors – lots
- Invasive species display
- Park history display

ACTIVITIES

- Climbing
- Geocaching
- Tree identification

PROGRAMMING

- Music via wi-fi to complement area/activity – perhaps in time it takes to walk the trail rock for fast, symphony for slow – composed for the park
- Animal stories narrated as you walk
- Observation points of interest – changing
- Charity walks
- Docent opportunities
- Evening hours, twilight lighting for evening stroll
- Visual search: "look for this, look at that"

GENERAL PUBLIC

N=259

Half the respondents (54%) were General Public. Of these, 82% said they visited Ross Park.

Accompanied children were mainly under 8 years old.

Reasons for not visiting Ross Park included living too far away, having no children or children grown up, accessibility issues.

Park visits mainly for recreation, relaxation, and de-stressing, and to participate in special events. A minority of visits were for education.

Main attraction Zoo animals

- Penguins
- Wolves
- Otters
- Big cats.
- Other animals mentioned:
- Arctic fox,
- Goats,
- Monkeys
- Owls
- Peacock,
- Polar bear
- Sloth
- Red panda (signature species but low mention rate).

Favorite space in Ross Park

Upper Trail (three times more popular than the Lower Trail), followed by the "park in general."

Spaces attractive because:

- Visitor fondness for animals
- Quality of animal observations
- Trail / hiking qualities
- Ambient natural, shady, relaxing aesthetic
- Positive family experiences

"What physical settings, features or activities would encourage repeat visits?"

TRAILS

- Trail expansion program (6)
- High quality walking / hiking trails
- Fitness stations (6)
- Rentals (3)
  - Bikes
  - Snowshoes
  - Carriage rides
- Guided hikes (20)
  - Guided night hikes (2)
  - Birdwatching hikes (3)
- Hiking challenge rewards
- Bathroom along trail

SETTINGS/FEATURES

- Accessibility
- Natural playground
- Interactive educational play spaces
- Aquatic settings and features
- Garden space.

ACTIVITIES

Family-related/children's play

- Scavenger hunts (33)
- Guided playground experiences (23)
  - Ropes course (7)
  - General (5)
  - Zip Line (4)
  - Treehouse (3)
  - Rock wall (2)
  - Maze
  - Water elements
- Nature craft sessions (9)

Education-related

- Sustainability (7)
- Day camps (2)
- Scouts/Junior Rangers (5)
- Survival courses (4)
- General education (4)
- Plant life education (16)
- Mushroom foraging (5)
- Education about history
- Animal life education (13)
  - Bird watching classes (5)
  - Insects (3)
- Audio education (3)
- Interactive displays (5)
  - General (2)
  - Solar system
  - Animal
  - Geology
- QR codes (2)
- Signage (3)

Adult-related

- Adult Playground (6)
- Night activities (5)
  - Wine night (2)
  - Histoical themes (2)
- Adult scavenger hunts
- Geocaching (3)
- Activity classes for adults (3)
  - Painting
  - Yoga
- Farmers market
- Social media photo contests

Animal-related

- Feeding animals (7)
  - Hands-on (5)
  - Observation (2)
- Increased animal interaction (8)
  - General (3)
  - Fishing (2)
  - Fish hatching
  - Catch and release
  - Butterfly House
  - Yoga with animals
  - Story times with animals
- Observation opportunities (8)
  - Roaming native animals (4)
  - Reptiles (2)
  - Aquatic
  - Larger animals
- Bat colony implementation program to keep down mosquito populations

Interactive site enhancements

- Gardens (16)
  - Fairy garden (5)
  - Animal themed (6)
  - Wildflower (3)
  - Rock garden
  - Botanical garden
- Water features (5)
  - Pond activities (3)
  - Wading pool
  - Hot spring
- Interactive sculptures (4)
- Picnicing activity area (4)
  - Fire pit
  - Water bottle refilling station
  - Lights
  - Benches
- Observation towers (3)
- Landscape display program sponsored by local groups (2)

Events

- Seasonal/Holiday events (18)
  - Halloween (6)
  - General (5)
  - Winter holidays (5)
  - Egg hunt (2)
- Night events (13)
  - Stargazing (4)
  - Lantern events (3)
  - Campfire & S'mores (3)
  - General (2)
  - Firefly count (1)
- Community meet & greet (5)
  - Picnics (2)
- Theatre events (5)
- Live music (4)
- Hot air balloon viewing events (2)

Ross Park Zoo and Park – Binghamton, NY

Playful Learning Forest

Preliminary Design Program

Stakeholder Workshop & Site Visit

FINAL REPORT

APPENDIX D

Stakeholder Workshop Report

Facilitated / Recorded by the Natural Learning Initiative (NLI)

NC State University, Raleigh, NC

- **Robin Moore**, Dipl.Arch, MCP, Hon. ASLA
- **Brandon Dupree**, MLA

Venue: Ross Park Zoo Gift Shop
November 30, 2022

Participants

- **Anne Clark** –
  Binghamton University, Biological Sciences
- **Carolyn Wilczynski** –
  Binghamton High School
- **Jason Shaw** – Binghamton City Legislature,
  Southern Tier Land Conservancy
- **Jessica Gorman** –
  Ross Park Zoo, Education Manager
- **Olivia Gorman** –
  Ross Park Zoo, Executive Assistant
- **Michelle Knuepfer** –
  Waterman Conservation Education Center
- **Jessica Locke** – The Discovery Center
- **Amanda Florance** – Broome County Parks
- **Christina Sheehan** – Ross Park Zoo
- **Phillip Ginter** –
  Ross Park Zoo, Executive Director
- **Michael Grasso** –
  Roberson Museum and Science Center
- **Jake Brigham** – City of Binghamton Parks
- **Beth Roberts** –
  Cornell Cooperative Extension

Pre-workshop preparation

The workshop agenda and community survey preliminary results were transmitted to workshop participants.

Workshop opening

Phillip Ginter, Ross Park Zoo Executive Director, briefed the workshop participants about the nature play and exploration trail project, the purpose of the workshop, and the Natural Learning Initiative (NLI) role (community survey; workshop agenda, facilitation, recording, and report production). Participants and NLI introduced themselves.

Site considerations previously identified

Purpose: Share with workshop participants location-related and programmatic issues, identified during workshop planning, to be addressed:

- Entries/access and parking
- Location of future Nature Center – potential gateway from the zoo to nature trails?
- Integration of nature play/exploration/ educational exhibits along the Zoo trail up to the top of the zoo?
- Location of future dedicated Nature Playscape.
- Location of future Nature Preschool.
- Field lab/educational space near the creek.

Project boundaries and location-related issues

Purpose: Reach agreement on the nature play and exploration trail boundaries, connections to existing facilities, and location of new facilities. The topic was tabled for further discussion following the site visit. Points made were integrated into the site visit observations. Copies of the following maps were shared:

- "Historic Trails at Ross Park" (Appendix 1).
- "Walking Path Slope at the Ross Park Zoo" (Appendix 2).

A rough sketch was created during the Stakeholder Workshop after the site visit (Appendix 3).

Follow-up discussions with Phillip Ginter resulted in a feasibility study by NLI of potential access routes to the Nature Play and Exploration Trail area from the proposed site of the future Forest Kindergarten and Discovery Center area (Appendix 4).

Personal Images of the future Ross Park Nature Play and Exploration Trail

Purpose: Offer participants an opportunity to express their own ideas about the future Ross Park Nature Play and Exploration Trail, expressed in their own words and graphic imagery. Results were shared around the group, as follows:

- Nature trail, the city comes into play, what the overlook could be, Chenango Valley State Park, Ross Park is a legacy park (Beth Roberts).
- Overlook downtown, carousel, tying in the Discovery Center, bring back camping, opportunities should be free (Jake Brigham).
- Look at the larger picture, do not duplicate services in Broome County, seasonal opportunities (Michael Grasso).
- Creek as a learning space, conserve, educate (Phillip Ginter).
- Not organized play, free roam play, imagination, relaxation, exploration (Christina Sheehan).
- Exploration, history (Amanda Florance).

- Natural sculpture park, habitat stats for biology, preservation, exercise stretching stations (ex. Tucker Lake), snowshoe rentals, picnic area (Jessica Locke).
- Education along the trail, habitat education, curiosity, zoo 'species' focus to park 'habitat' focus (Michelle Knuepfer).
- Engagement, interaction, birding spots, history (Olivia Gorman).
- Interactive education, free play, native species info flora fauna, ancestral lands to the Onondaga Nation, intergenerational and community, Binghamton University students teaching children about water (Jessica Gorman).
- Coming in through the old entrance, amphitheater (ex. Tuscarora amphitheater), work off a legacy idea, 'Zoo Unbound' installation on how have zoos changed over time – take bars of the lion cage and bend them (Jason Shaw).

Community use, access for wheelchairs and limited mobility, tree house or tree trail up off the ground (ex. The Wild Center at Tupper Lake), a place for students to collect data –post to set up a camera to look at the view with the opportunity to see the difference over time, photo collection data could be accessed over the years, there is an issue of online maintenance (Carolyn Wilczynski).

Behavioral Ecologist, ways to develop trails so kids can get away from parents, the loop is private for the kids, secret stops, supply shed with borrowable items such as whiteboards to write notes to each other or writing what they saw, rendezvous points with tables, birders do come here, but the ground birds have plummeted due to the amount of deer, deer have urbanized – breeding birds, Anne can provide a list of flora fauna for the site (Anne Clark).

Text commentary contained in the images was codified into design programming categories by NLI following the workshop.

Personal expression of the future Nature Play and Exploration Trail (See Appendix E for all expressions).

Programmatic goals/objectives

- Ancestral lands of Onondaga Nation
- Accessibility: wheelchairs and limited mobility
- City connection
- Community-engagement-use-intergenerational (4)
- Conserve
- Discovery Center connection
- Educate (2)
- Flora & fauna-native (Anne Clark can share lists)
- Geographic context, nonduplication of Broome County services
- Habitat focus-education-stats
- History (2)
- Legacy park framing idea (2)

- Opportunities offered free of charge
- Preservation
- Zoo species connections
- Zoo Unbounded – zoo changes over time – bars off lion cage and bend them

Activities/affordances

- Birders use Ross Park (bird feeders at homes outcompete park populations. Bird populations (ground) plummeted due to deer, deer have urbanized – breeding birds,
- Camping
- Curiosity
- Exploration (2)
- Interactive (2)
- Imagination
- Play-free-roaming-spontaneous
- Relaxation
- Sculpture-natural
- Seasonal opportunities
- Snowshoe rental
- Students teaching children about water
- Student data collection camera posts, documenting changes over time, long-term photo data, online maintenance

Facilities/Settings

- Amphitheater (Tuscarora)
- Birding spots
- Carousel
- Creek learning space
- Exercise stations (Tucker Lake)
- Kids-only loop away from parents, private, secret stops borrowable tools and supplies, white boards to record observations and thoughts, rendezvous points with tables,
- Learning trail
- Old entrance
- Overlook to downtown-reimagined
- Picnic area
- Trail-nature
- Treehouse
- Tree trail off slope (Wild Center, Tupper Lake)

Precedents

- Chenango Valley State Park
- Wild Center, Tupper Lake
- Tuscarora Park

What is the overall mission/vision of the Ross Park Nature Play and Exploration Trail?

Purpose: To share initial thoughts and ideas about the mission/vision of the trail to distinguish it from the overall mission of Ross Park Zoo, and to form the basis of an initial draft by NLI. Ideas included:

- Self-guided learning
- Exploration
- Destination & Expansion
- Inspiration
- Conservation
- Land acknowledgment, those who came before us, awareness of the legacy
- A third amenity to the site
- Connection to...
- Natural environment
- Habitat integration
- Sparking empathy and action
- Inclusive and accessible
- For whom?

Mission and goals of the Nature Play and Exploration Trail

The mission and goals were discussed as rough drafts/ keywords during the Workshop and finalized by NLI post-workshop, as below.

Proposed Mission

The inclusive, accessible Ross Park Nature Play and Exploration Trail supports interaction with local habitats, stimulates self-guided learning, sparks empathy with nature, inspires conservation action, and recognizes the legacy of those who came before.

What are the goals of the Ross Park Nature Play and Exploration Trail?

Purpose: To create a list of keywords framing goals that should drive the trail project. The following list resulted:

- Optimize & Enhance
- Identify & Prioritize
- Functional for all, Inclusive, and Accessible
- Education
- Recreational
- Health
- Habitats and the Organisms
- Ecosystems

Proposed Goals

1. Identify, prioritize, and optimize the experiential values of Ross Park.
2. Assure a functional, inclusive, accessible, and safe destination for all.
3. Create a healthy, enjoyable educational/ recreational human-nature ecosystem.
4. Conserve and improve habitat quality to protect wildlife and organisms.
5. Collaborate with state and local governmental and nongovernmental organizations to implement and effectively manage Ross Park Nature Play and Exploration Trail.

WHO WILL THE USERS BE?

Purpose: Share observations of current users. Identify potential future users. Suggestions were categorized as follows:

Suggested user groups:

Informal, individual/group users

- Families
- All ages
- Walkers
- Dog walkers
- Bikers
- Arts-related, individual artists/painters
- Photographers
- Naturalists/birders
- Foragers: mushrooms, blueberries
- Tourists

Formal/intuitional/ programmatic users

- Childcare programs
- School groups
- High school science students/teachers
- Higher education students/faculty
- Afterschool groups
- Educators
- Scouts
- Birder groups
- Volunteers

Special events

- Birthday parties
- Music / Drama
- Weddings
- Catering
- Venue for team building, training

What settings are needed?

Purpose: Share ideas about how user needs expressed above could be supported by specific activity settings.

Suggested Activity Settings:

General criteria

- Low impact
- Artifacts that connect to history
- Creek access

Specific activity settings

- Entrances that connect
- Primary trail
- Loops off primary trail, hillside cowpaths
- Gathering spaces, programs, informal gathering
- Picnic area
- Bathrooms
- Mud kitchen, 'mud, mud, glorious mud'
- Lean-to open shelter
- Benches, prospect & refuge
- Renovate existing overlook
- Tree canopy walks
- Climbing space, low ropes
- Photo op spots

Site visit: observations, queries and ideas

Purpose: Learn about the overall site (Zoo and Park) extent, connections, contents, and characteristics. The following grouped observations, thoughts, and ideas (including those from the beginning of the workshop), were shared.

Site visit: observations, queries, and ideas:

Historical

- Postcards on eBay and YouTube videos of historic Ross Park showing the train, etc.
- The historic south access, currently unused, provides an interesting, special character.
- Broome County is the carousel capital with the oldest carousel in Ross Park.
- A carousel museum used to be on the property in the stone building which used to hold zoo animals. The building has also been a band stand for performances.
- The structure for the carousel is registered as historic but could potentially come down in the future.
- The zoo has had a master plan in the past; Phillip recalls one from 1970's.
- The portion of creek between the Boo building and the Discovery Center used to feature an amphitheater with a performance area across the creek on the south side.

Physical

- Ross Park encompasses the Ross Park Zoo and the Discovery Center.
- A connection between zoo and trails.
- Is there a potential gateway from the zoo to the nature trails? Yes, in the future if the zoo switched from paid entry to free entry model.
- Park Creek is a unique aspect of the site but is currently a challenge to access. A designated access point needs to be created. Park Creek conditions offer different experiences. The east end has shallow, rippling water. Near the Boo Building the creek has shale slabs underfoot. Opportunities exist for healing/ restoration. The Boo building has potential as an outdoor classroom.

- A connection to the creek and a space to support education is important.
- Bayless Creek to Park Creek – adjacent to roads.
- There is a low-lying swamp area in the southwest corner of the site; the city has expressed interest in connecting the trails to the historic gate in the northwest corner through this low-lying area.
- The site contains different biomes with different habitats and related diverse wildlife.
- Connect the Ross Park Zoo and Discovery Center with a sidewalk.
- The carousel that is being renovated will move uphill adjacent to the parking lot and park shelters.
- The location of the future Nature Center could be at the top of the hill where the rainforest exhibit is currently.
- The south forest contains three existing historic park features: the overlook which used to have a covering, a set of restrooms, and a small shelter with a fire pit (see photos).
- For security, according to Binghamton Police, the south side should be enclosed with a boundary.

Activities

- Mountain bikers use the site for recreation.

Programming

- How can we add value to Ross Park?
- Potential for forest preschool (ex. Brookfield Zoo, Brevard Zoo, Cincinnati Nature Center).
- Boards of Cooperative Educational Services (BOCES) provides programs for ages K-12.
- The Discovery Center is a hands-on activity center with daycare, afterschool, and camp programs. It is a universal pre-k site and serves up to 12 yrs. The demographic is younger, and they lease from the city.
- Use the trails to support health and wellness; work with Anthony Folk (Chenango Point Cycles) and Binghamton Area Mountain Bike Initiative (BAMBI).
- The zoo already has an "eagle's nest" for use.
- Canopy Strategic Partners has produced an education and conservation plan.

Funding

- Funding for onsite compost program.
- A Consolidated Funding Application (CFA) is an application for state funding.
- The zoo has been growing its contact list and will utilize it to recruit donors for the project.

Legal/administrative.

- The Southern Tier Zoological Society leases 60 acres from the city but only uses 25 acres.
- Ross Park Zoo wants to be AZA accredited again.

What are the next steps in developing the design program and master plan?

Next Steps

- Community Survey Results – Report (NLI)
- Create a preliminary concept plan – with alternatives, if necessary (NLI)
- Appoint a project Task Force of 5-7 members responsible for reviewing progress and recommending action (RPZ)
- Provide the City of Binghamton with project visualization, including implementation, management, and maintenance strategies (NLI).

Existing Ross Park trail alignment:

Park Creek, adjacent to the bridge

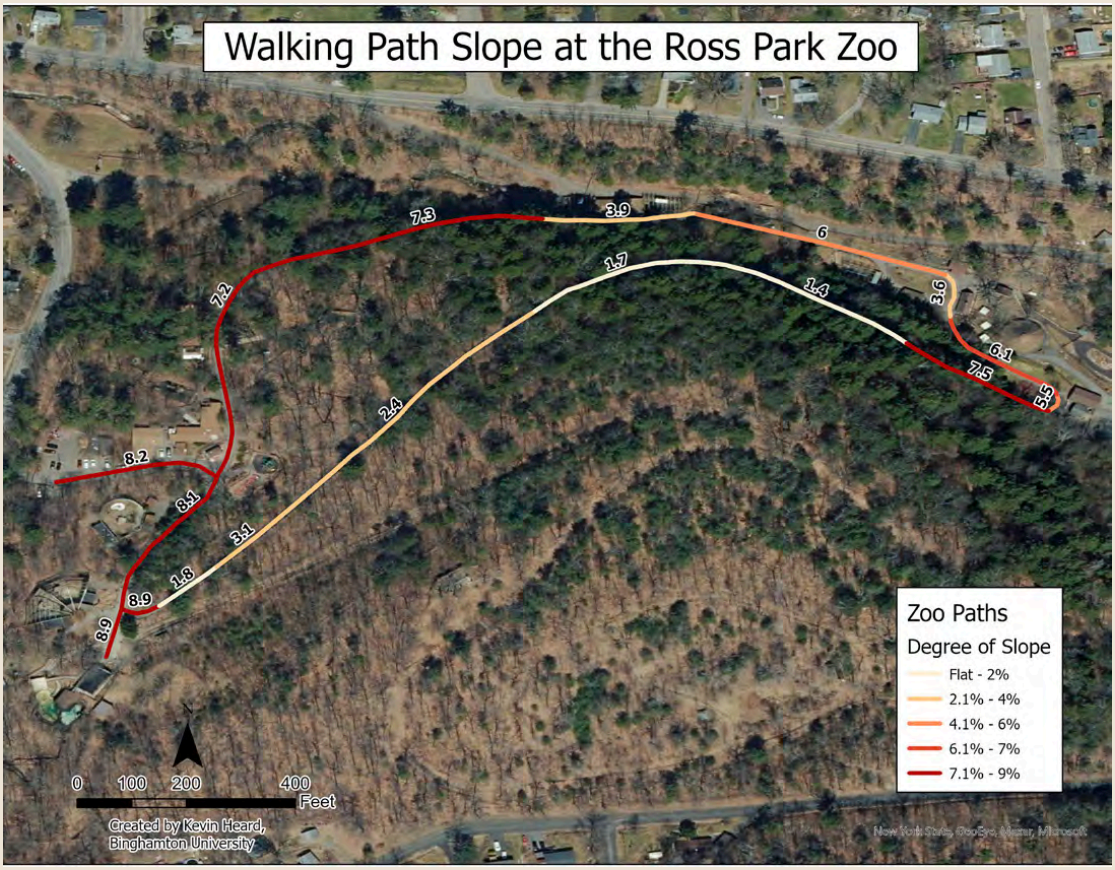
with observations shared by Phillip Ginter, Ross Park Zoo Executive Director (right) and Brandon Dupree, NLI (left).

APPENDIX 1:

Historic Trails at Ross Park n.d. (Note: Trail along the west boundary does not exist).

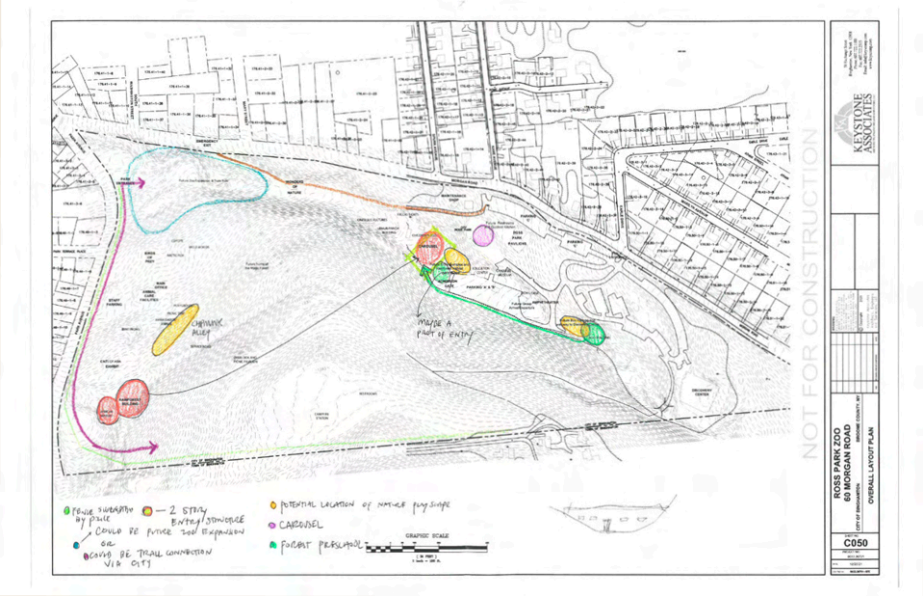
APPENDIX 2:

Walking Path Slope at the Ross Park Zoo (created by Kevin Heard, Bingamton University).



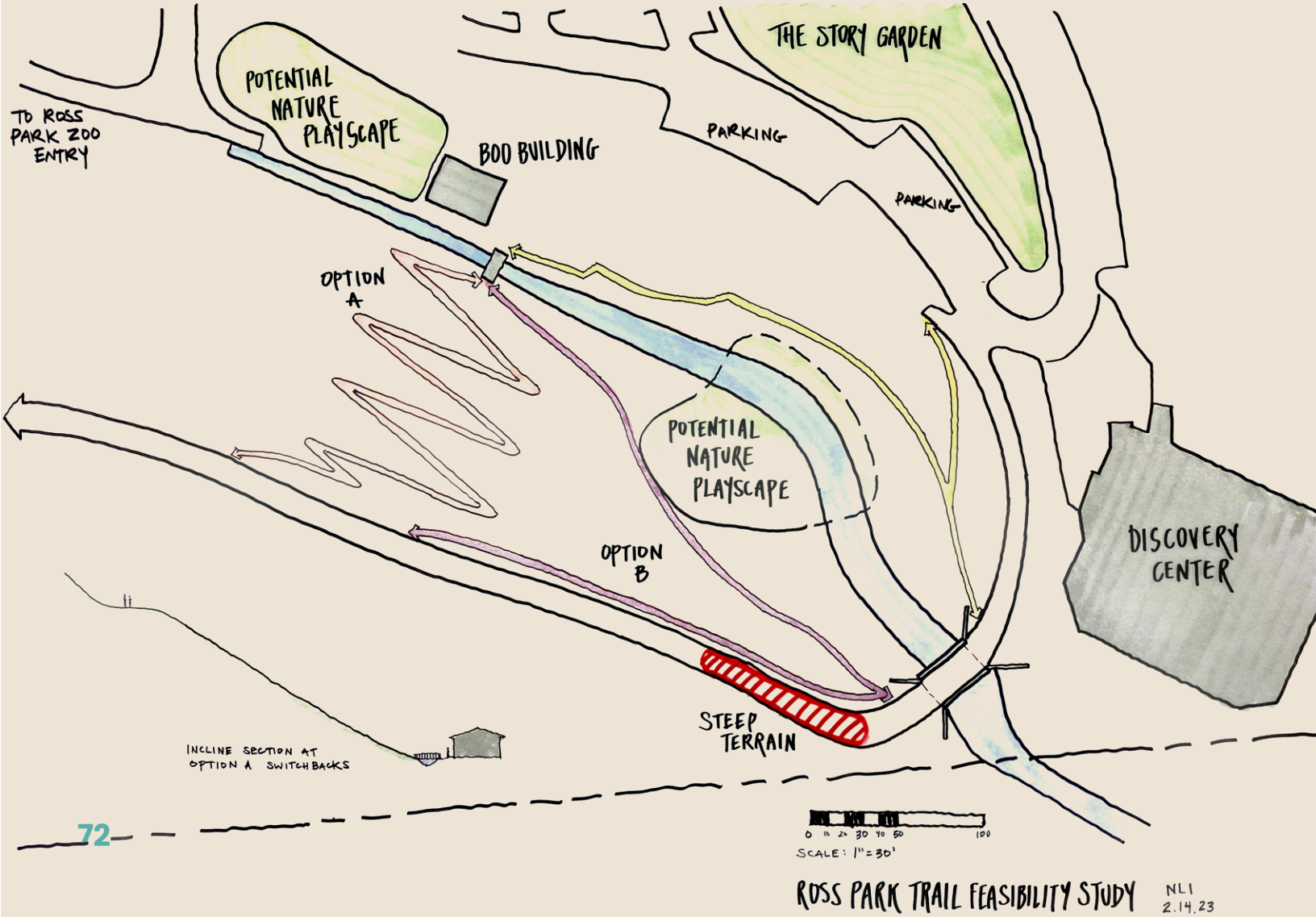
APPENDIX 3:

A rough sketch was created during the Stakeholder Workshop after the site visit.



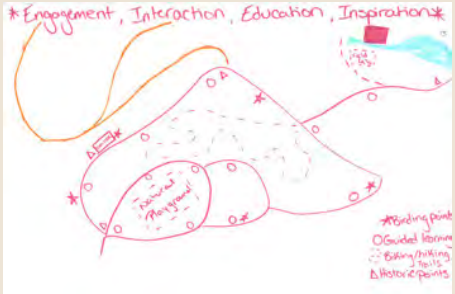
APPENDIX 4:

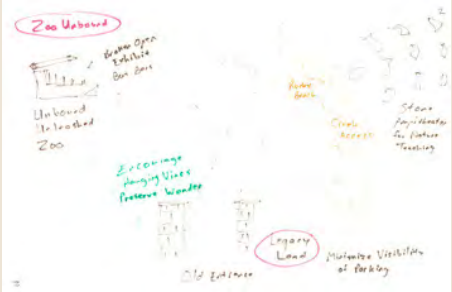
Follow-up discussions with Phillip Ginter, Executive Director, resulted in a feasibility study by NLI of potential access routes from the proposed future Forest Kindergarten and existing Story Garden and Discovery Center to the future location of the Nature Play and Exploration Trail.

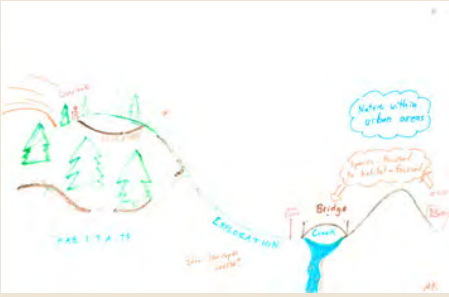


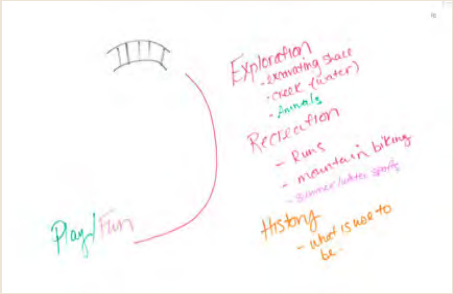
APPENDIX 5:

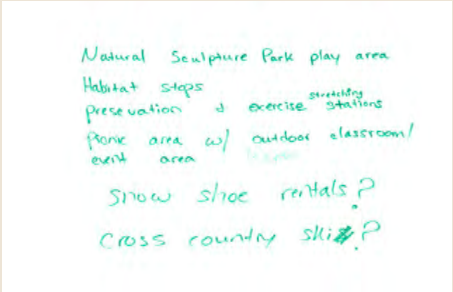
Participant personal Images of the future Ross Park Nature Play and Exploration Trail Participants' own ideas about the future Ross Park Nature Play and Exploration Trail, expressed in their own words and graphic imagery. Results were shared around the group.

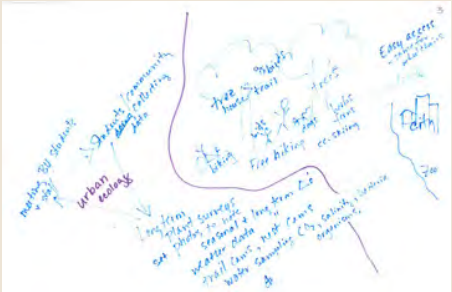


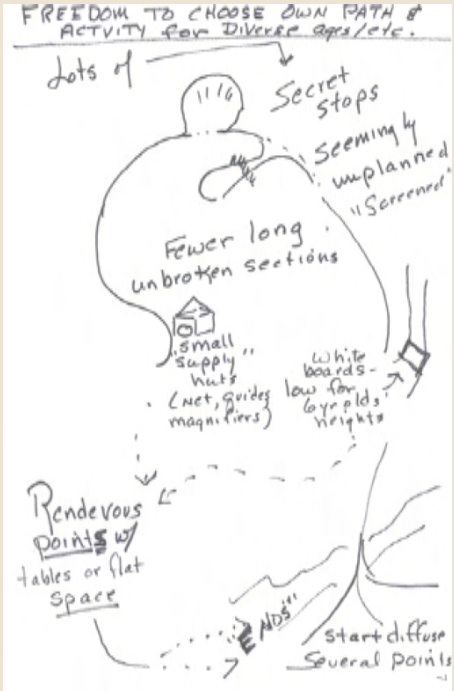


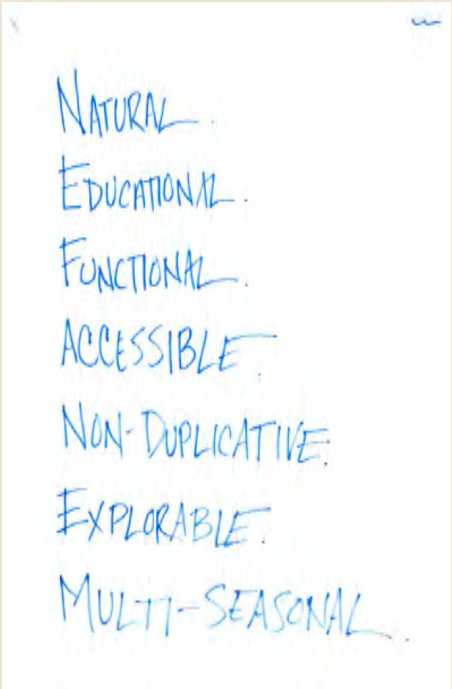


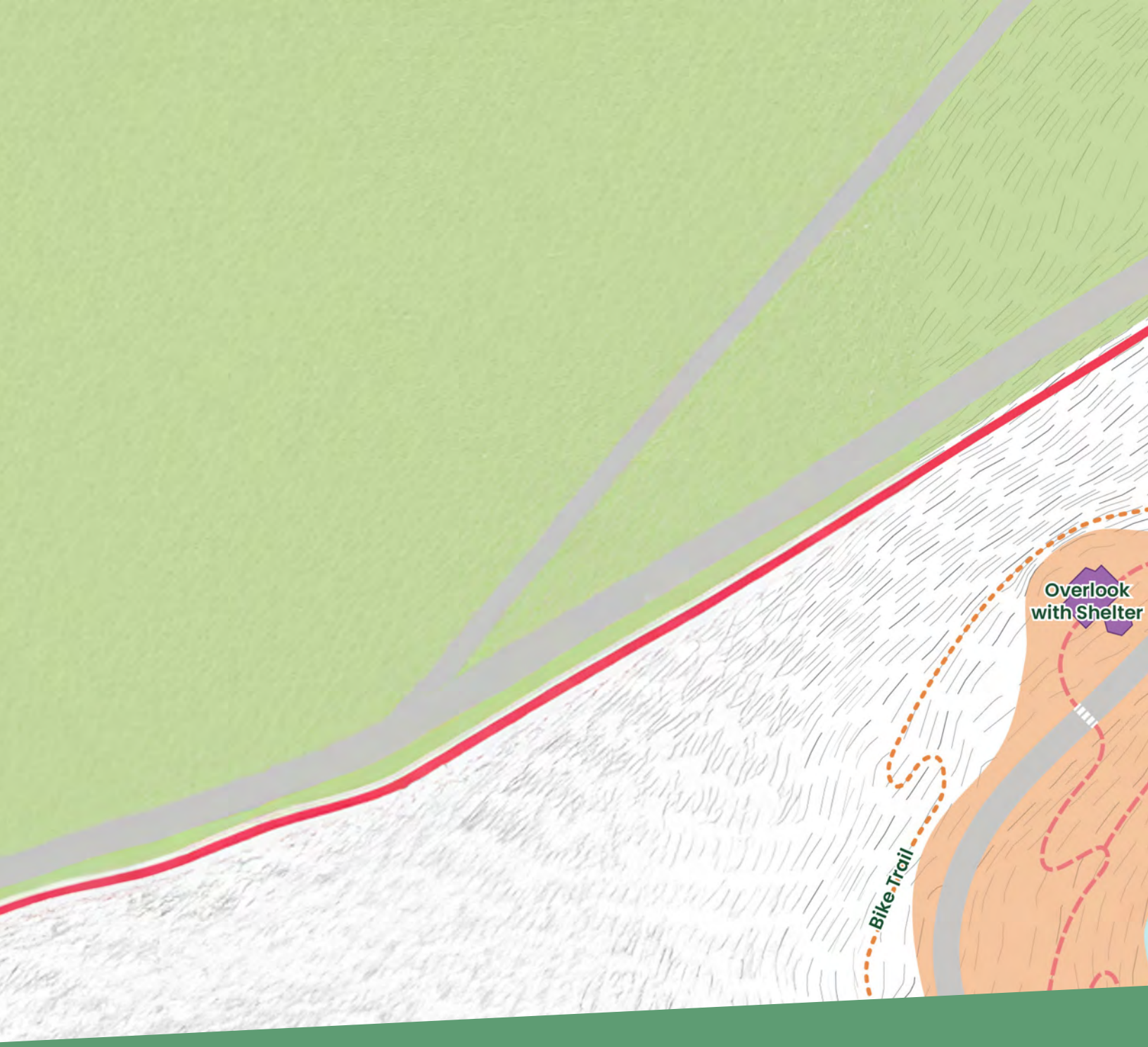











Overlook
with Shelter
Bike Trail