

# Nature-Based Recreation

A Resilient Communities Project—GreenStep Cities Guide

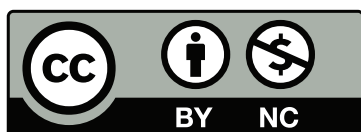


Resilient Communities Project

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### Recreational Programming for Children's Interaction with Nature in Rosemount City Parks

**UMN Course:** LS 5100: Revitalizing Environmental Reform: Re-Imagining the Arts for Public Parks UMN

**Student Authors:** Rachel Burand, Karen Ciales

**City Project Lead:** Tom Schuster, Parks and Recreation Department, City of Rosemount

**UMN Course Instructor:** Roslye Ultan, Department of Liberal Studies, College of Liberal Arts

**Original Student Report:** <https://conservancy.umn.edu/handle/11299/180465>

### Nature Based Play Evaluation

**UMN Course:** REC 3281: Research and Evaluation in Recreation, Park, and Leisure Studies

**UMN Student Authors:** Casey Bries, Jack Hickey, Katherine Hughes, Anna Lane, and Kendra Rysan

**City Project Lead:** Tom Schuster, Parks and Recreation Department, City of Rosemount

**UMN Course Instructor:** Tony Brown, Department of Recreation, Parks, and Leisure Studies, College of Liberal Arts

**Original Student Report:** <https://conservancy.umn.edu/handle/11299/180467>

### Nature-Based Play: Long-Range Management Plan for the City of Rosemount

**UMN Course:** EnEd 4315: Operations & Management

**UMN Student Authors:** Mary Beth Factor, Charlie Goudreault, Amy Hughes, Stephen Nelson, & Eleva Potter

**City Project Lead:** Tom Schuster, Parks and Recreation Department, City of Rosemount

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**Original Student Report:** <http://hdl.handle.net/11299/180468>

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## INTRODUCTION

Nature-based play principles focus on providing children with more opportunities to interact in a natural environment. With the increased prevalence of technology-based entertainment targeted towards youth, children are spending less time outdoors engaging with nature.<sup>1</sup> Nature-based play theories encourage children to be not only physically active in a space, but to also exercise active imaginations for play. Incorporating more nature-based play elements into existing parks and play areas has the potential to increase physical activity amongst local children while also improving other developmental processes.

This tool outlines the benefits of nature-based play, offers background information on the theories behind nature-based play ideas, and gives design recommendations for incorporating nature-based play elements into existing parks. Before beginning the design process, it is important to engage the intended users of the play spaces: the local youth. In order to have a space that is fully utilized, it must be relevant to the user's needs. Engaging local youth on what they would like to see in a park and what additional natural elements would be most engaging will help planners design a space that best meets the needs of the intended audience.



## Benefits of Nature-Based Play

Interaction with nature is essential to health, well-being, and proper development. In a recent *Minneapolis Star Tribune* article, Cathy Jordan, Associate Professor of Pediatrics at the University of Minnesota stated, "when kids have exposure to nature, they reap physical and emotional benefits, improve their attention and focus, and learn social skills through playing in a calming environment that has relatively little cost or risk".<sup>2</sup> In other words, nature is truly irreplaceable, and it is a necessity for healthy children.

### PHYSICAL ACTIVITY

As of 2012, 17% of children in the nation were obese.<sup>3</sup> Including play elements and structures that encourage children to engage in active forms of play has the potential to increase amounts of exercise that local youth are getting.



### DEVELOPMENTAL BENEFITS

Children who engage in more unstructured play in natural elements use more creativity in their play than children interacting on traditional play structures. Practicing creative play early can help children to develop better problem-solving skills in the future.<sup>4</sup> Encountering situations requiring problems to be solved and decisions to be made is more likely when children are playing in natural elements. This can improve executive functioning, which can in turn improve academic success.<sup>5</sup>



## SOCIAL SKILLS

Unstructured play also provides more opportunities for social interactions between children. Children engaging in more social interactions learn to cooperate, gain leadership skills, and develop emotional skills early in life.<sup>6</sup>

Children engaging in less structured, spontaneous play tend to have fewer problems with anxiety, depression, stress, and aggression.<sup>7</sup>

## BENEFITS TO ADULTS

Nature has benefits not only for children, but adults as well. Research in environmental psychology suggests that there are restorative and stress-reductive benefits to interactions with nature.<sup>8</sup> Positive associations have been found between the amount of greenspace in an area and residents' perceptions of their own general health.<sup>9</sup>

By thinking beyond the realm of standard plastic playground equipment and manicured open lawns, cities have the opportunity to introduce unique and innovative concepts into the city park system. Mud play zones and gardens are just two examples of how cities can engage diverse age groups and inspire more consistent interaction with nature.

## Design Ideas

Before beginning the process of designing a nature-based play structure or including elements of nature-based play in existing areas, it is critical to engage those who will be interacting with the space. The design process cannot begin before deciding on who is the target audience, and then including that audience in developing the design. For a nature-based play area, the target area will likely be local children and their families.

It is essential that spaces are designed with multi-season use in mind. In order to continue to have users engaged with the space year-round, winter activities and use should be considered in the design process. This may involve additional programming or alternate use of play structures to accommodate changing seasons.

Determining what the users most want will help the success of the project and can increase the amount the space is used.

## STARTING THE DESIGN PROCESS

When considering nature-based design options, first consider what could be included without major changes to the existing space. Using existing elements of the landscape not only integrates more local, natural elements, but can save financial and time resources throughout the project.

Designer Mitsuru Senda uses nature as a base for the development of his playgrounds, allowing topography, light, wind, and materiality to connect children to and teach them about nature. These kinds of designs appeal to a wide age range, encouraging more children to be physically active.



The following design ideas are organized into four design typologies: 1) Playing with the Landform, 2) Natural Materials, 3) Forests as an Asset, 4) Art and Nature. These design ideas are elements of nature-based play that have been included in other play areas. The final design decisions should, however, be shaped by public engagement processes with the intended users of the play areas.

### 1 PLAYING WITH THE LANDFORM

Integrating playground elements into the landscape, allowing for variation of use and integration of the land. Classic playground elements can be integrated into the landform, and the landform itself can be turned into a playground element. This kind of design allows children to exercise by running up and down the landform elements, and less hardscape material reduces risk for injuries. Open green space for resting, running, and rolling encourages different kinds of games.



### 2 NATURAL MATERIALS

Use of elements such as wood, stone, soil, vegetation and even water helps to integrate the playground into the landscape. Use of local materials has the added benefit of teaching children about elements native to their local landscapes. These kinds of elements can be used in different ways to stimulate children's imaginations and increase the amount of time playing outside. Furthermore, it provides a sustainable resource to recycle local materials that may have ended in a landfill.



### 3 FORESTS AS AN ASSET

Imitate the forest in a playground while also bringing the playground into the forest when possible. Integrating the play elements with nature creates a unique experience for the users. When possible, move up and down with the land and the trees to produce a multilevel experience. Wooded areas used as buffers between the park and the community can be integrated into the play elements by using the forest as an asset.



#### 4 ART & NATURE

All of the previous elements can be combined and adapted by an artist to create art pieces that represent nature and encourage children to learn while interacting with the pieces. These pieces can be permanent or temporary installations.



In addition to considering the above design typologies, the following play space characteristics have been found to encourage beneficial play<sup>10</sup>:

- incorporate living things
- provide areas for children to engage in group or solitary play
- features children can manipulate
- designed based on the scale of the child
- encourage the child's imagination to direct play
- considers climate

#### NATURAL ELEMENTS TO CONSIDER IN INTEGRATING MORE NATURE-BASED PLAY PRINCIPLES

When designing a natural play area, the elements included in the final design will depend on the needs and wishes of the community, as well as resources available to create the play space. Elements in the play space should mimic the natural elements of the greater area surrounding the park and those within the park itself when possible.

##### WATER FEATURE

There are many sensory elements to water that intrigue children and encourage them to play and explore around the water feature area.<sup>13</sup> Children can play in shallow streams or view aquatic wildlife in deeper water, such as ponds.

##### PLANTS, TREES & FOLIAGE

Plants, trees, and foliage in a natural play area are not only aesthetically pleasing, they serve as an additional element for children to manipulate and include in their play. Trees also provide a setting for designing play spaces around the idea of forests as an asset.

##### MULTIPLE LEVELS (STONE WALLS, STAIRS, ETC)

Giving children the opportunity to run and jump between multiple levels will encourage more physical activity, strength building, and provides additional structures for imaginative play.

##### OPEN, UN-LANDSCAPED FIELDS, SUCH AS MEADOWS

Meadows provide additional space for children to explore and to see the difference between natural grass and more manicured grass found in residential areas.<sup>11</sup>



### SAND, MULCH, PEBBLE GRAVEL

These elements encourage children to engage tactically with the environment and become involved in social, cooperative play around manipulating the loose natural elements in the play space.

### MESSY MATERIALS (MUD, SAND, TWIGS, ETC)

Messy materials encourage children to engage tactically with the play space and offers more opportunities for imaginative and social play.

### PLACES FOR CLIMBING AND CRAWLING

Structures to climb over and crawl under encourage decision making in play and provide opportunities for children to be more physically active and improve strength.

### GARDENS

Children can see seasonal changes and learn how plants grow. Vegetable gardens can also encourage children to eat more produce while providing access to healthy foods.<sup>14</sup>

### SHADED SPACES

It is important to provide shaded spaces to offer protection from the sun for both children and those accompanying them to the play space.

### ANIMAL ATTRACTING FEATURES

Animals are a resource for children to learn about natural habitats and biology. Research has also shown therapeutic effects of interacting with animals, including stress reduction.<sup>17</sup>

### MULTIPURPOSE LAWN SPACES

Open lawn space provides an opportunity for more programmed space, such as community events and large-group games.<sup>12</sup>

### GATHERING SPACES

Providing a space for community gathering can strengthen social ties and encourage more community investment.

### PATHWAYS

Pathways are used to direct how users move through a space. Pathways can encourage children to interact with a part of the play space that was previously unused or to keep children away from areas that may not be safe.<sup>15</sup> Children engage most with looped pathways. Mitsuru Senda found that children's games often involved running circular paths, an element he mirrored in his playground designs.<sup>16</sup> A hierarchy of paths accessible by multiple forms of mobility encourage children to make decisions as part of their play.

## Questions to ask when considering design options

### Does this play space...

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Encourage play?         | <input type="checkbox"/> Promote access for everyone?      | <input type="checkbox"/> Support imaginative play? |
| <input type="checkbox"/> Stimulate senses?       | <input type="checkbox"/> Allow adult-child interaction?    | <input type="checkbox"/> Support group play?       |
| <input type="checkbox"/> Stimulate curiosity?    | <input type="checkbox"/> Allow child-child interaction?    | <input type="checkbox"/> Support games?            |
| <input type="checkbox"/> Support physical needs? | <input type="checkbox"/> Support child-nature interaction? | <input type="checkbox"/> Involve art or music?     |
| <input type="checkbox"/> Support social needs?   | <input type="checkbox"/> Support active play?              | <input type="checkbox"/> Involve science?          |
|  | <input type="checkbox"/> Support creative play?            |  |

## Case Studies

### CORE VALLEY IN EAGAN, MN

Core Valley is a custom-designed fitness area that opened in June 2014 and encourages outdoor natural play for all age groups. The park features large logs placed at varying angles and heights in order to fulfill the needs of many different outdoor workouts. The City of Eagan created this outdoor fitness zone to serve general fitness, athletic development, or training for an obstacle course. The outdoor natural play and fitness area is the first of its kind in the state, and offers an excellent example of incorporating both natural elements and health/fitness elements into a suburban park (City of Eagan 2014).

### TAMARACK NATURE CENTER IN WHITE BEAR TOWNSHIP, MN

This park is large in scale, but offers elements that could be applied to any smaller scale city park. The focus of the Tamarack Nature Center is on nature discovery and play in innovative ways. The park features Discovery Hollow and Garden, with elements that allow children of all ages to “build a tree fort in The Wood, climb the cliffs to The Overlook, make a dam in The Stream, get growing in The Garden, and get muddy in The Mud Table” (Tamarack Nature Center website). This example also includes year-round accessible trails to each of its outdoor play spaces. Using natural elements has proven wildly successful in getting children to be actively engaged in the outdoors at Tamarack.

### WHITETAIL WOODS PARK IN FARMINGTON, MN

A regional park located in Dakota County, Whitetail woods has a new natural play area called Fawn Crossing Natural Play Area. The play area includes space for fort building, an area for sand play, a water pump feature, boulders and logs in a balance area, and an interpretive art space. The space was designed to mimic the natural elements found in the rest of the park. This helps to integrate the space into the park as a whole while providing visitors an opportunity to interact with local, natural elements.

## Liability and Natural Play Areas

Modern playgrounds are regulated by safety standards designed for common play structure equipment. Implementing natural play areas can raise liability concerns. At the beginning of a nature-based play project, the city should develop a risk management protocol. Steps for developing this protocol can be found on pages 118-122 of the *Nature Play and Learning Places* national guidelines report. The protocol should be developed with the city’s risk manager and city attorneys.

Areas designed as “playgrounds” are subject to existing safety regulations meant for traditional play structures. “Play spaces”, “play areas”, and “exploration areas” are not, however, bound by the same safety regulations. If the area is called by a name other than “playground”, cities should still work with their risk manager to develop a safety protocol for the space.

## Natural Play Areas and Cost

Costs associated with natural play areas will vary greatly depending on what elements the city chooses to include. Existing play areas can be enhanced with natural elements simply by adding stumps to create a multi-level pathway. This is a very low-cost addition that can be implemented as the beginning of developing a larger natural play space.

If a city is interested in investing more resources into developing a large natural play area, costs will be greater. Installing water manipulation features and large natural play structures, for example, will be more expensive.

When developing the budget for a natural play area project, cities should consider what existing elements of the landscape could be included in the space. This will help with lowering the cost of the project and can create a natural play space that mimics the natural environment of the area.

## Conclusion

Natural play areas provide children with the opportunity to interact with nature in new ways, encouraging them to use their imaginations in play while engaging in more physical activity. The benefits of nature-based play are numerous. Both children and adults experience reduced stress levels after spending time in natural settings. Natural play areas also serve as community gathering spaces for all residents, not just children. These play areas are an asset to the community. Promoting interactions with nature through natural play spaces will help children and adults to develop stronger social ties and a greater appreciation for nature.

## Additional Resources

### Nature Play and Learning Places: Creating and Managing Places Where Children Engage with Nature

Comprehensive guidelines on planning for, designing, implementing, and managing natural play spaces.

Includes:

- Benefits and history of nature-based play
- Nature-based play and education at different developmental stages
- Design elements, recommendations, and considerations for each element
- Management suggestions, including risk management and liability issues
- Strategies for implementing natural play areas

[https://natureplayandlearningplaces.org/wp-content/uploads/2014/09/Nature-Play-Learning-Places\\_v1.2\\_Sept22.pdf](https://natureplayandlearningplaces.org/wp-content/uploads/2014/09/Nature-Play-Learning-Places_v1.2_Sept22.pdf)

### Project for Public Spaces: Elements of a Successful Playspace

Design ideas, elements to include in successful playspaces, obstacles to and solutions for developing successful playspaces

[http://www.pps.org/reference/play\\_elements/](http://www.pps.org/reference/play_elements/)

### 7 C's: An information guide to young children's play spaces

Design recommendations for outdoor play spaces for children ages 2-5. Does not specifically focus on nature-based play, but many of the suggested elements and considerations are applicable to a variety of play space designs.

<http://www.wstcoast.org/playspaces/outsidecriteria/7Cs.pdf>

### UMN Extension: Best practices and examples for designing natural play spaces

Provides an overview of nature-based play, elements to include in a nature-based play area, and offers design examples for different kinds of natural play spaces. The guide also includes several case studies of natural play areas from a variety of locations.

<http://www.extension.umn.edu/rsdp/northwest/natural-resources/connecting-children-and-nature/resources/docs/nbp-precedents-pres.pdf>

### NatureGrounds

Guidelines for retrofitting existing play equipment to include more nature play elements.

<http://www.naturegrounds.org/index.html>

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