



City of Milwaukee  
Milwaukee County Parks

# **Copernicus Park Master Plan**

Prepared by TERRA Engineering  
May 2015







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# EXECUTIVE SUMMARY

## Study Area

Copernicus Park is a 20.4 acre county park in the Milwaukee County's 14th District that is owned and operated by Milwaukee County. The park is located on the southeast side of Milwaukee within the City's 13th Aldermanic District, also known as the Garden District because of the area's long tradition of gardening among residents and businesses. The study area for the Copernicus Park Master Plan includes the entire boundary of Copernicus Park as well as two residential lots on the east side of South 20th Street.

## Project Background

The area immediately around the park has a history of surface flooding brought on by a combination of factors, the most notable being a system of aging and undersized infrastructure that has been unable to keep up with the area's growth and development over the years. In 2010, after several historic floods caused extensive damage to property, a series of public meetings were held to brainstorm solutions to alleviate damage from future flooding events. These meetings resulted in a solution to upgrade sewer infrastructure and develop a stormwater mitigation facility. Copernicus Park was identified as a potential location for a stormwater mitigation facility because of its geographic location in relation to the flooding problem, the existing topography of the land, and proximity to the north branch of Oak Creek, an existing feature which flows from northwest to southeast through the park. The City also acquired two neighborhood properties east of South 20th Street because of damage caused to them by the flooding, with the initial thought to return the properties to the tax base. The City understood that it would need to partner with Milwaukee County Parks, which owns and manages the park, in order to proceed with providing stormwater mitigation at the Copernicus Park location.



2010 Neighborhood Flood Complaints Highlighted in Blue



Planning Process utilized for development of Park Master Plan

## Project Approach

In 2014, the City commissioned TERRA Engineering to develop the Copernicus Park Master Plan. The purpose of the plan was to develop a comprehensive vision for the parkland in context with its location, natural resources, and community vision. This vision will act as a framework for the Park's use and development. The underlying goal of the master plan is to mitigate localized flooding in the neighborhood while improving park facilities and programming opportunities. TERRA worked closely with a Task Force that was formed to represent stakeholder constituents throughout the three distinct phases of the planning process.



## 1. Phase 1- Research and Analysis

Within this phase of the planning process, the Task Force examined resources, stakeholder interests, and best practices from similar park design and programming efforts in other communities. The research and analysis phase included a review of physical conditions and site features unique to Copernicus Park and gathered input from City, County Parks, and neighborhood residents in a public workshop held at Cooper Elementary School on August 13, 2014. The data and feedback received during this phase identified priority opportunities, preliminary goals and objectives, and special considerations that guided the development of concept alternatives, and ultimately the final recommendations included in this report. The best opportunities exist where best practices, stakeholder interests, and available resources converge.



## 2. Phase 2- Concept Alternatives

The findings from the research and analysis phases, along with input from the Task Force and public workshop, served as the basis of design for three concept alternatives. The concept alternatives were presented to the Task Force and one preferred concept was selected to advance and refine. The preferred concept was presented to the stakeholders and the public at a public open house held at Cooper Elementary School on October 29, 2014.



## 3. Phase 3- Final Master Plan

Under the direction of the Task Force, recommendations were finalized and the Master Plan was completed. The entire planning process has been summarized in this Copernicus Park Master Plan report as a reference to document the vision for park improvements and recommended implementation strategies.



### Stakeholders

The stakeholders with interests in the Copernicus Park Master Plan are broad and diverse. In addition to the Task Force, other potential partners identified during the planning process should be contacted as advocates for future planning, design, programming, and maintenance stewards for the Park:

- Copernicus Park Neighborhood Association
- The Garden District Neighborhood Association
- University of Wisconsin, Milwaukee Planetarium
- Children's Museum
- Residents
- Church of Christ Southside
- St. Charles Borromeo Parish
- Cooper Public School
- Garland Elementary School
- Victory Public School
- Ideal School
- Our Father's Lutheran School
- Ronald Reagan High School

### Best Practices

Best Practices represent what other communities are doing with similar project developments relating to scope, scale, character and quality. Throughout the vision planning process, best practices were presented to the stakeholders and public to initiate the visioning process and develop ideas for the Park related to the following:

- Programming Activities
- Playing & Learning
- Green Infrastructure
- Natural Areas
- Paths, Walkways & Gathering Spaces
- Park Structures
- Public Art
- Stream Restoration

## GOALS & OBJECTIVES

### Mitigate localized *flooding* in the neighborhood.

- Incorporate new stormwater infrastructure into the Park as an amenity that will not compromise park programming.
- Implement best management practices into stormwater infrastructure to improve the water quality.

### Improve park *safety*.

- Address community concerns about the basketball court by repurposing or removing the existing basketball court.
- Provide adequate lighting throughout park.
- Consider safety precautions related to water levels when designing stormwater improvements.
- Maintain open views within the park.
- Evaluate the need for wildlife crossing signage adjacent to woodland areas.
- Implement the requirements of the Americans with Disabilities Act (ADA) and other standards that will improve the Park's safety for all.

### Enhance park with a variety of *activities* and programming for all age and interest groups.

- Incorporate both active and passive recreation opportunities.
- Provide a mix of court and field activities such as half-court basketball, tennis, volleyball, soccer, baseball, ice skating, sledding that accommodate the largest number of users.
- Develop programming for four season use of the Park.
- Integrate education into overall design theme.
- Add interpretive signage for environmental and sustainable awareness.
- Encourage community activities within the Park by providing social gathering spaces.
- Incorporate art into the park.
- Expand existing system of paths within the park to allow for more connections and uses.

### Develop an *identity* for Copernicus Park.

- Enhance Park entrances with improved signage and landscape treatments.
- Identify a focused design theme to unify all Park improvements.
- Use consistent design standards for repeating elements such as site furnishings and lighting to create a cohesive identity and reinforce the Park boundaries.

### Create a *collaborative* project that incorporate the interests of the City of Milwaukee, Milwaukee County Parks, residents, and potential stakeholders.

- Involve The City of Milwaukee, Milwaukee County Parks, residents, and potential stakeholders to work on the recommendations of the Copernicus Park Master Plan.
- Promote a collaborative dialog to make resources available to upgrade parks to benefit residents.

### Promote environmental, economic and social *sustainability*.

- Maintain and enhance the existing woodlands areas of the park.
- Eradicate buckthorn and other invasive species in woodland areas.
- Restore Oak Creek to stabilize the banks and enhance water quality.
- Encourage the use of native landscape plantings throughout the park.
- Involve Milwaukee County Parks during design and implementation of park improvements to ensure improvements align with operations and maintenance budgets.
- Plan for present and future needs of the Park users by providing adaptable activities and programming.





**“...People & neighbors of the park enjoy the natural beauty the open space provides...”**

October 29, 2014 Public Open House



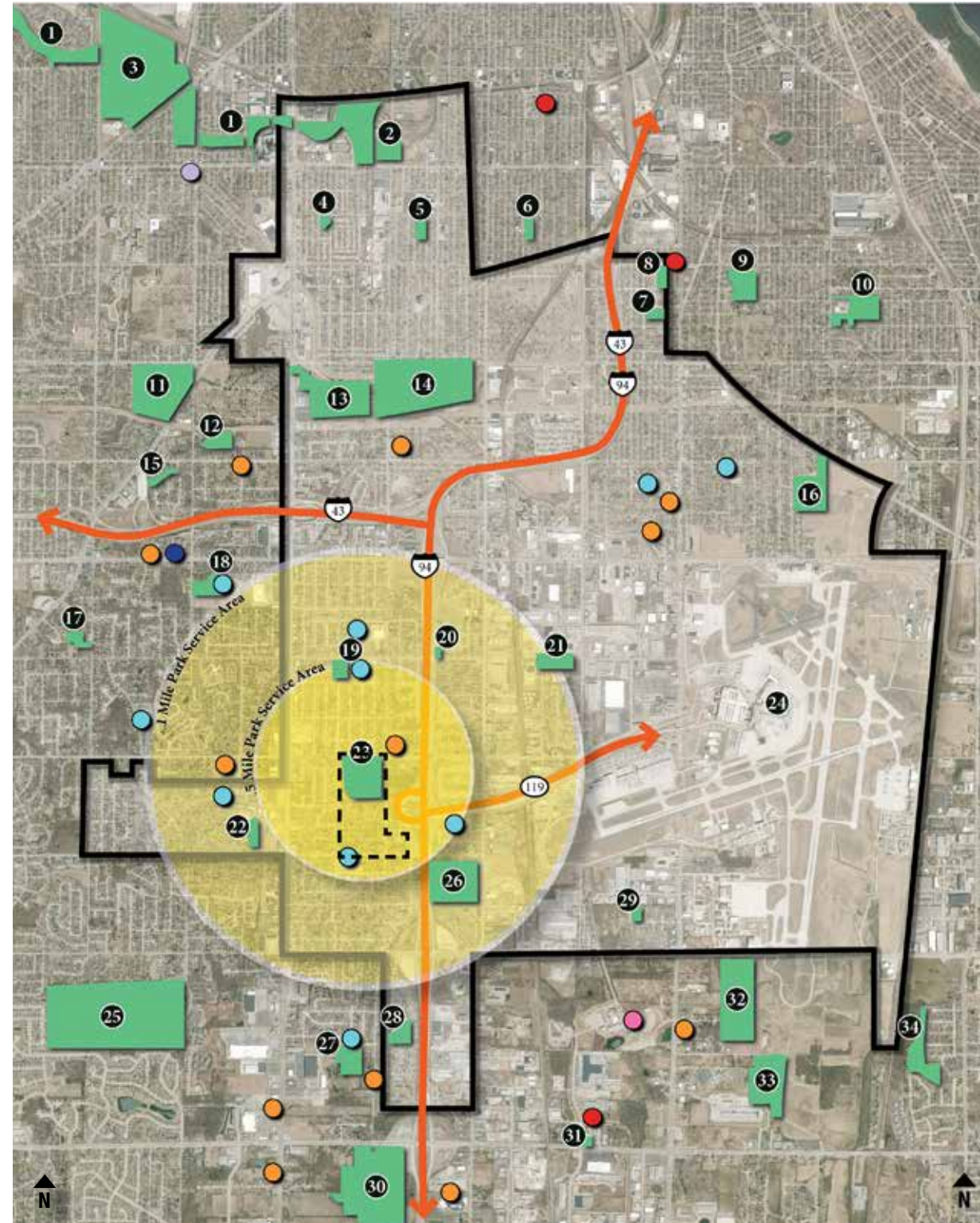
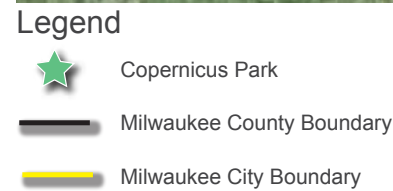
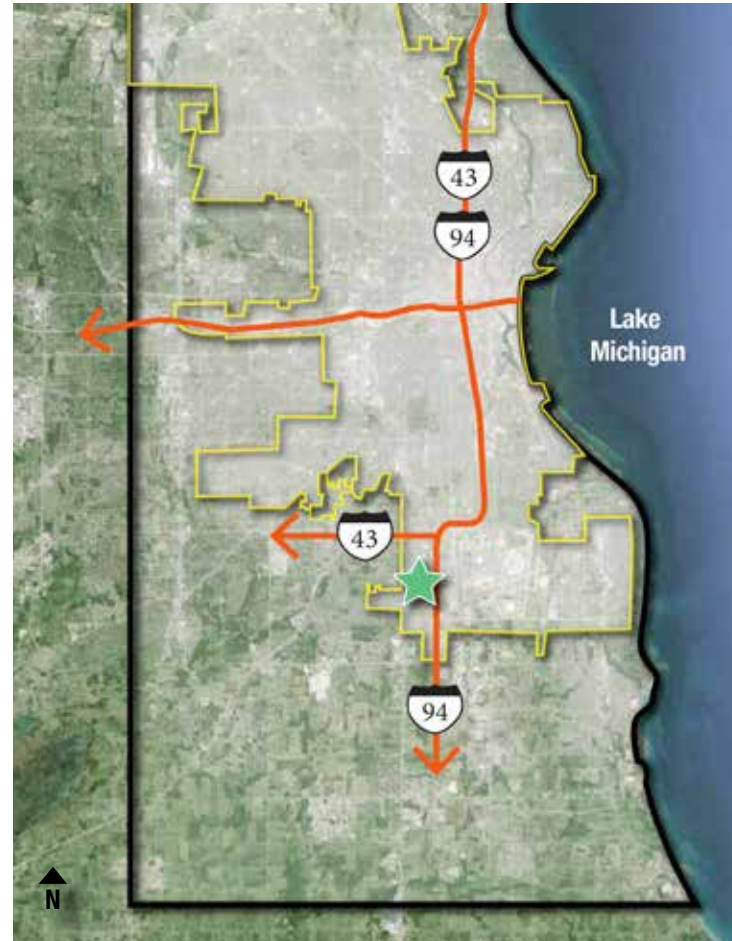
# EXISTING CONDITIONS

## Park History

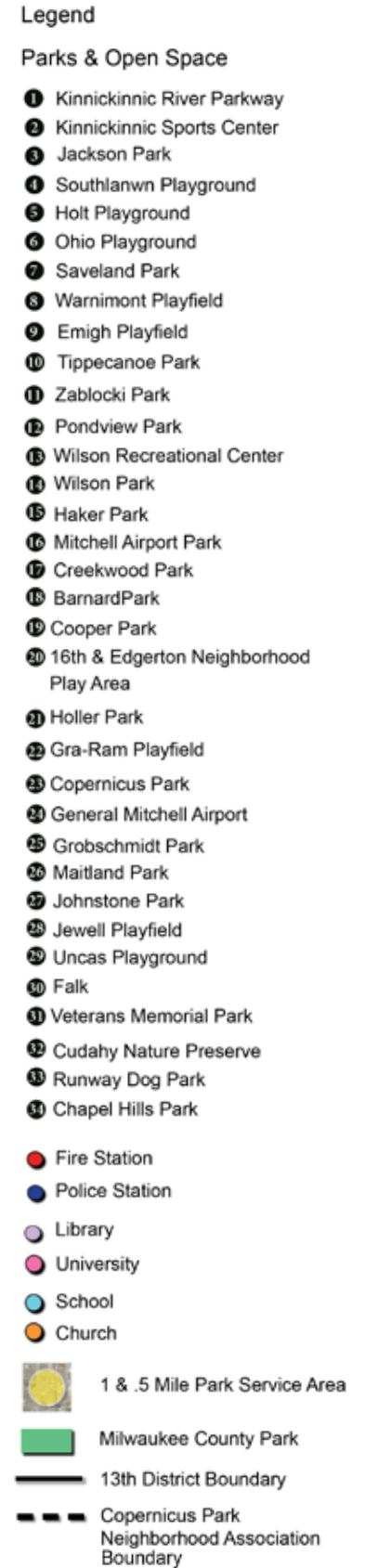
Copernicus Park is located in the south east portion of the City and County of Milwaukee as illustrated in the regional map. The Park is approximately one and half miles south of Interstate 43, and less than half a mile west of Interstate 94. Copernicus Park was established in the early 1970s, and is considered a neighborhood park with a one mile walkable service area. The current park's amenities include: open play areas, picnic shelters, a playground, and walking trails. Prior to being dedicated to the astronomer Nicolaus Copernicus, it was referred to as Park site #41 in Milwaukee County Parks Department files. In the late 1970s, there was interest in developing a planetarium in honor of the park's namesake. However, there was not enough funding to support the plans. Many of the amenities that were desired by the residents and Alderman in the historic documents support the amenities that are being proposed in present master plan document. These park amenities include: areas to gather and promote neighborhood togetherness, an ice skating rink, and open recreational spaces. Copernicus Park was named to honor Nicolaus Copernicus and to provide an opportunity for potential scientists of all ages to enjoy and learn of his revolutionary discoveries. This Master Plan embraces the early intentions of the park's Master Plan by providing educational and recreational based play that focuses on the park's name.

## Regional Context

Through map analysis, a diverse group of adjacent surrounding cultural features was revealed. The Garden District Cultural Features Map illustrates a one mile service area. This service area is primarily residential and contains six parks, two churches, five schools, and two major interstates. The residents within this service area will be the primary users of Copernicus Park.



Garden District Cultural Features Map





## Physical Site Features

Copernicus Park is comprised of three distinct areas classified as:

- Woodlands, which account for approximately 12.21 acres (60%) of the park, are comprised of dense naturalized shade tree canopy. The tree and understory plantings are not classified as floristic “high-quality”; however, are an important resource for both neighborhood residents and wildlife habitat. Oak Creek daylights from a concrete structure at the northwest corner of the site and meanders with natural banks through the park to the culvert structure under South 20th Street. Oak Creek typically has little to no water flow, except during storm events when there is high velocity flow which has eroded the banks and vegetation over time. The wooded area contains a variety of paths for access including asphalt, wood chip and dirt. There is one pedestrian bridge over Oak Creek that connects the neighborhood to the northeast and the park.
- Open space, which accounts for approximately 5.34 acres (26%) of the park, is characterized by grass fields with sporadic shade, evergreen, and ornamental trees. This space provides opportunity for passive and unprogrammed active sports recreation.
- Programmed areas, which account for approximately 2.85 acres (14%) of the park. Programmed recreational facilities consists of a recently improved full-court basketball court, an older playground, and swings with sand surface. The park has lighting throughout; however, it is irregular, particularly in the wooded areas. Site furnishings include benches and trash receptacles. For the most part, the site furnishings are old and in need of upgrade with exception of the furnishings around the basketball court which are newer.



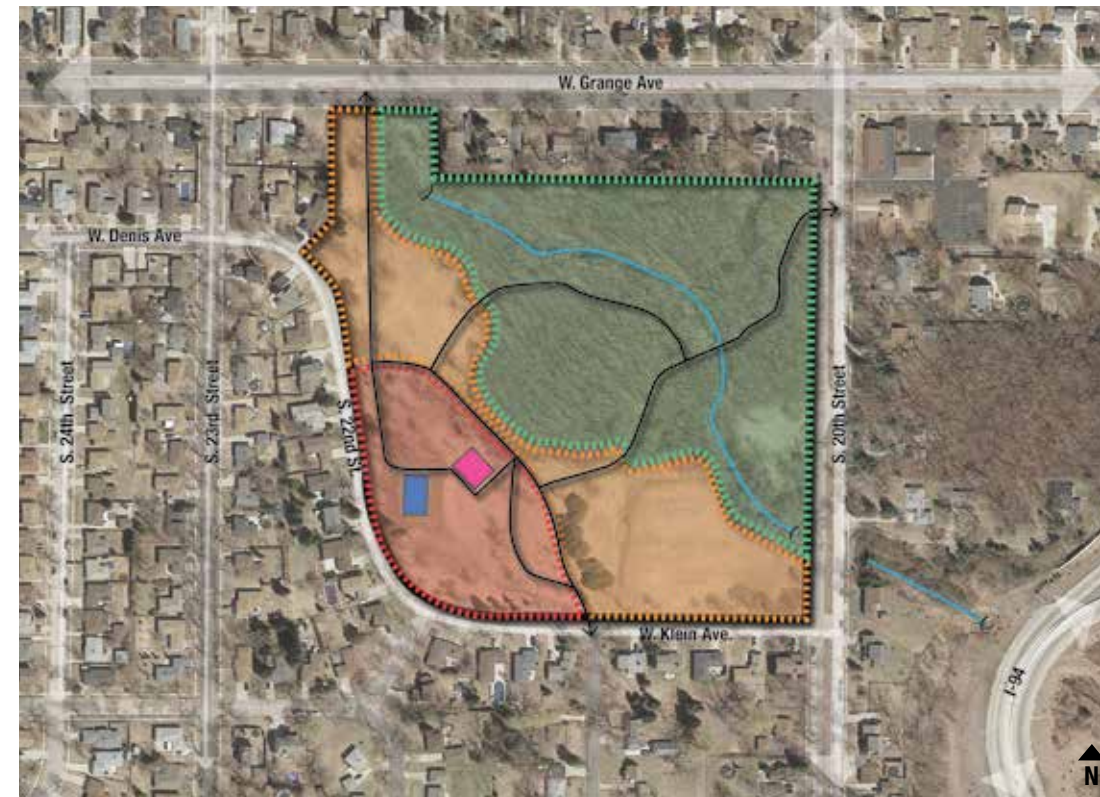
Study Area Map

### Study Area

Copernicus Park is located amongst a residential neighborhood that is bound by a grid of streets. The park is bound by Grange Avenue to the north, South 20th Street to the east, Klein Avenue to the south, and South 23rd Street to the west. The Study Area Map highlights the park boundary in yellow and some of the existing key features such as the pathways, playground, basketball court, and the North Branch of Oak Creek, a small portion of the entire creek, that runs northwest to southeast across the park.

There are two primary park access points denoted by park signage landscaping and seating areas. There is limited pedestrian circulation along the park perimeter with sidewalks only along West Grange Avenue and South 20th Street. Improved and added pedestrian connections to the park with right-of-way sidewalks will create a safer park environment.

- Legend  
Study Area
- Property Boundary
  - Park Paths
  - Playground
  - Basketball Court
  - North Branch of Oak Creek

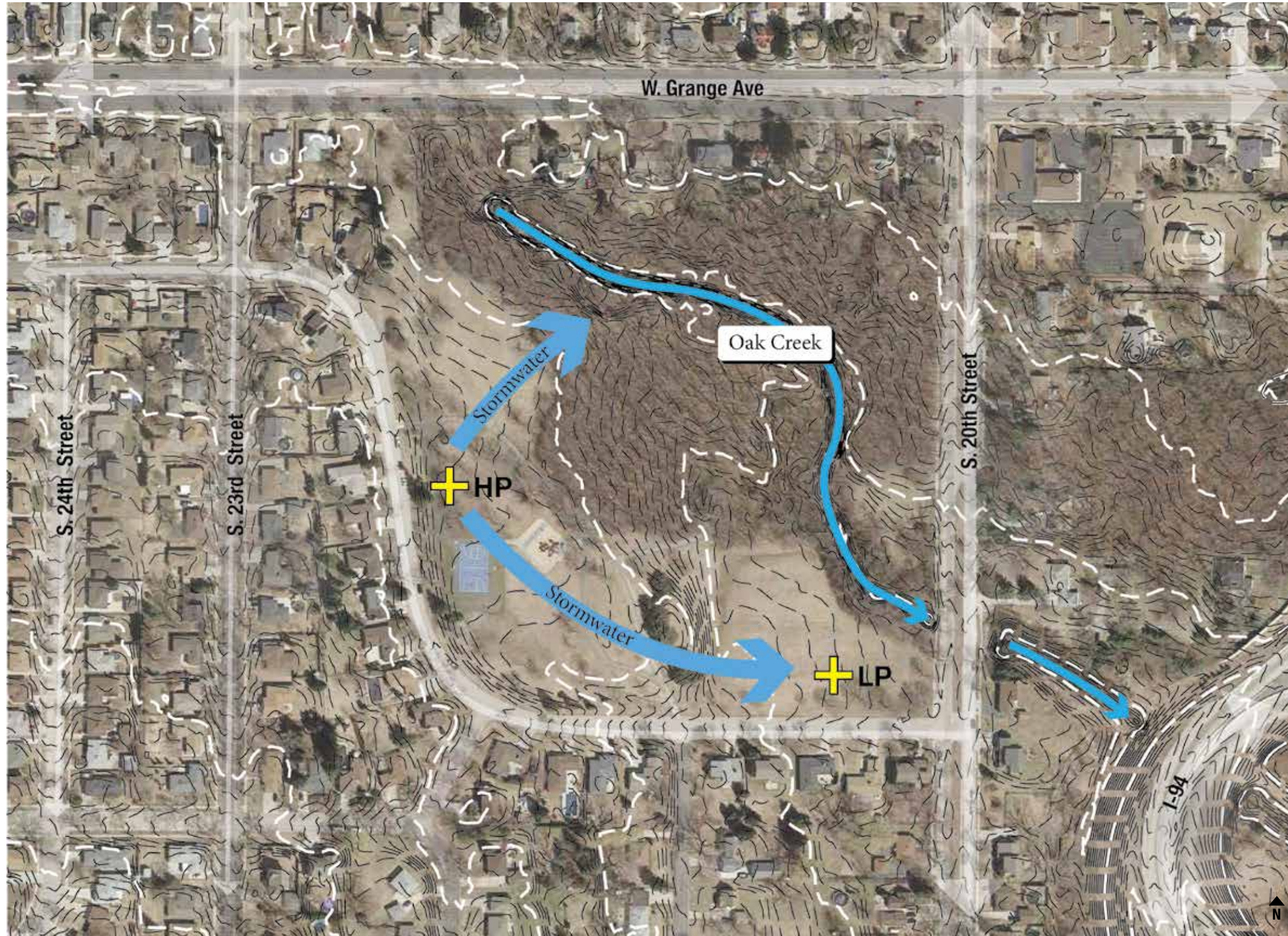


Existing Site Features Map

- Legend  
Existing Park Amenities
- Open Space (5.34 Acres)
  - Woodlands (12.21 Acres)
  - Programmed Areas (2.85 Acres)
  - Parks Paths
  - Stream
  - Existing Play Ground
  - Existing Basketball Court








**Existing Site Topography Map**



**Topography**

The Existing Topography Map illustrates the existing park topography. The open space and programmed areas of the park are relatively flat. The high point of the park lies just north of the existing playground and basketball court. The topography gets steeper as the park slopes down to Oak Creek. Two primary drainage swales exist that direct runoff from the high point to Oak Creek. The low point of the park is at the southeast corner. This low point is an unprogrammed grass field.

- Legend
-  5' Contour
  -  1' Contour
  -  High Point
  -  Low Point
  -  Drainage Flow Line

*Existing Conditions Map*



Existing Conditions Photographs



View of park signage at park entrance



View of path through woodlands looking southwest



View of bioswales in median of Grange Avenue



View of existing park playground looking northwest



Existing park site furnishings at playground area



View of park looking northwest at the southeast corner of site



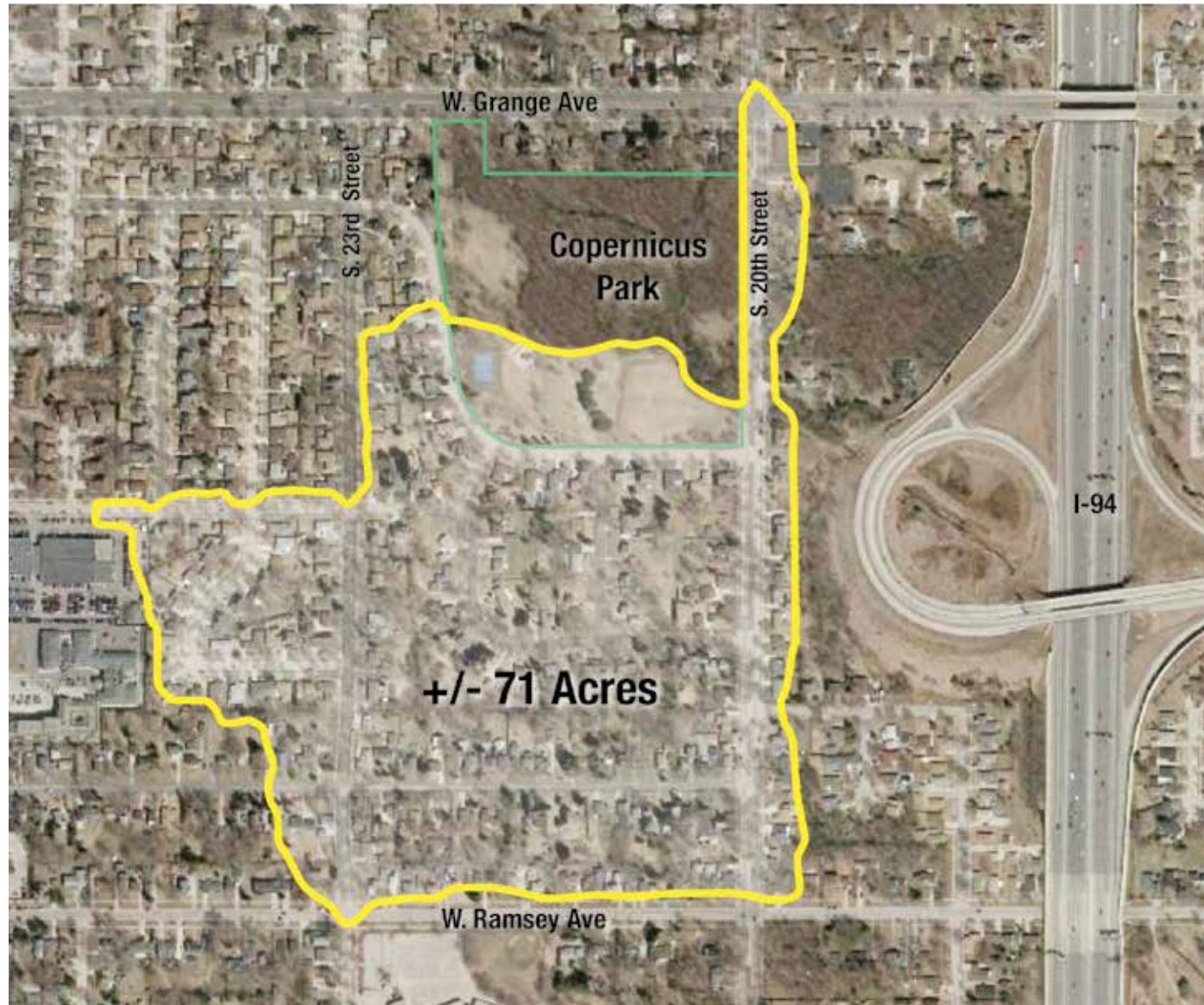
View of North Branch of Oak Creek



View of basketball court



# Flood Mitigation and Hydrology



Tributary Area Map

The tributary area map illustrates the +/- 71 acres that the proposed stormwater mitigation area is sized to accommodate.

- Legend
- Tributary Boundary
  - Copernicus Park Boundary

The Copernicus Park neighborhood has experienced a number of storm events which have caused flooded basements and damage to property. A storm event in July 2010 resulted in the City of Milwaukee receiving complaints of flooding on private property from over 30 property owners. The neighborhood consists of single-family residential properties and the open space at Copernicus Park. The drainage basin tributary area is approximately 71 acres, and generally drains from west to east, following the flow of the North Branch of Oak Creek, through a low point on South 20th Street south of West Klein Avenue, to the Wisconsin Department of Transportation right-of-way at the airport spur (STH 119).

To address the flooding issue, the City of Milwaukee has decided to pursue installing stormwater management facilities and divide up the total drainage basin area into four smaller tributary watersheds to help control and manage the intensity and volume effects of stormwater on private property. These four smaller tributary watershed areas will include a watershed approximately 30 acres in size that will be a tributary to the Copernicus Park stormwater management facility, a 36-acre watershed tributary to a stormwater conveyance area located on the east side of South 20th Street where the City has purchased two properties, and the two remaining watersheds (totaling approximately 5 acres) will discharge directly to the North Branch of Oak Creek at the existing culvert pipes under South 20th Street.

The City's intent is to provide a 100-year level of protection. The City calculated the required sizing of the stormwater management facility for Copernicus Park using hydraulic modeling (HydroCAD), and the hydraulic modeling resulted in a determination that approximately 305,000 cubic feet of storage volume was required to accommodate a 100-year level of protection. Using aerial photography from the Milwaukee County Automated Mapping and Land Information System (MCAMLIS), the City prepared a layout for a stormwater management facility, in the southeast corner of Copernicus Park, with a surface area of approximately 2.1 acres. The stormwater management facility will provide approximately 305,000 cubic feet of storage volume for storm events.

The City's conceptual design also included improvements to the storm sewers in the vicinity of the new stormwater management facility, in South 20th Street and West Klein Avenue. Smaller, more frequent storm events, up to approximately the 3-year storm event, will continue to discharge into the North Branch of Oak Creek and bypass the stormwater management facility in Copernicus Park. This design will keep the Copernicus Park stormwater management facility relatively dry during the more frequent storm events. Diversion structures built on the existing West Klein Avenue storm sewer will keep the more frequent storm events out of the stormwater management facility and allow the larger, less frequent, events to enter the stormwater management facility.

Concurrently, the City purchased two properties on the east side of South 20th Street, just south of West Klein Avenue, as those properties were damaged by flooding to the point of becoming uninhabitable. The City originally intended to repair the properties and sell them, to get them back on the property tax rolls. It was determined that these two properties will be used for a stormwater conveyance area for the approximately 36-acre tributary watershed. A portion of the existing storm sewer in South 20th Street will be diverted to the stormwater conveyance area where it will be discharged at grade and will drain by an overland conveyance path to the North Branch of Oak Creek.



## Green Infrastructure

Along with the proposed stormwater management facilities in the Master Plan the Task Force recommended that “green infrastructure”, best management practices (BMPs) be considered and included where appropriate as the project moves into final design and engineering. In addition to green infrastructure in the park, homeowners within the tributary area can have a big impact on reducing the flooding by implementing stormwater best practices on their own property, some at little cost. With small contributions homeowners can reduce the number of basement backups, the amount of polluted stormwater that enters sanitary sewers, and ultimately reducing local polluted waterways and lakes. Residents can visit [www.mmsd.com](http://www.mmsd.com) to learn more about green infrastructure and additional ways to combat stormwater runoff. Following is a list of BMPs to consider:



### Disconnecting Downspouts

The City of Milwaukee encourages residents to disconnect downspouts from the municipal sewer system and has identified the neighborhood around Copernicus Park as a priority area to implement this initiative. Disconnecting downspouts can have a significant impact on reducing flooding by diverting runoff from rooftops directly into the sewer system. It is recommended that homeowners use splash blocks or flexible drain pipes to direct downspouts away from homes or adjacent structures. The effectiveness of disconnecting downspouts can be further enhanced by incorporating rain gardens or bio-swale to further promote infiltration in soil.



### Permeable Paving

Permeable paving allows rain water to flow freely through void in the surface to infiltrate in the soil below. There are many types of permeable paving including concrete and clay unit pavers, permeable asphalt and permeable concrete. Permeable paving could potentially be incorporated in the parking lane in the street adjacent to the curb flow line.



### Rain Gardens

Rain gardens are depressed areas that are used to collect, store and improve the quality of stormwater runoff. Rain gardens can be landscaped with plants tolerant of both dry and wet conditions so that they are an attractive amenity in the yard or park.



### Rain Barrels

Rain barrels are a cost effective and easy way to collect and reuse harvested rainwater for watering gardens and landscaping. Rain barrels collect rainwater from the rooftop through a modified downspout connection. When the rain barrel reaches capacity it can be designed to overflow into a rain garden or bioswale. The Milwaukee Metropolitan Sewerage District, MMSD, provides information on where to purchase rain barrels and how to utilize rain barrels to conserve and reuse rainwater. Visit [www.freshcoast740.com](http://www.freshcoast740.com) for further information.

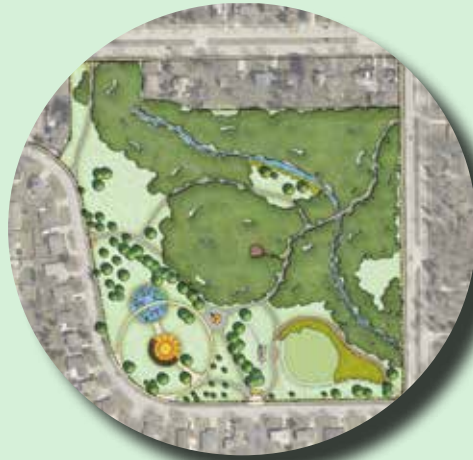


### Bioswales

Bioswales are natural planted swales used to convey surface water runoff, promote infiltration into the soil and improve water quality. Bioswales can be planted with native or ornamental plantings to create an attractive amenity. Bioswales similar to those already installed on West Grange Avenue could be incorporated in the median of South 20th Street when the street is reconstructed to increase the sewer infrastructure.



# DESIGN VISION



## Copernicus Theme

This concept is inspired by the heliocentric model of the universe formulated by Copernicus. The focus of the concept is playing and learning.



## Garden District Theme

This concept was inspired by nature and is designed as a more passive, arboretum style park that celebrates the Garden District's image.



## Sports and Recreation Theme

This concept was designed as a very active park with a variety of activities and programming for all age and interest groups.

Three distinct design and programming concepts were presented to the Task Force for evaluation during the planning process. These design concepts were formulated through the seven priority topics that were developed based on feedback received at the public workshop. Each of the three design concepts incorporates the seven topics to address the public's and Task Force's input.

Seven priority topics are as follows:

### Topic 1: Removal/ modification of basketball court.

- Remove or modify the court to deter and eliminate negative activity in the park.

### Topic 2: Hydrology and stormwater

- Mitigate the stormwater flooding issues to the surrounding neighborhoods.

### Topic 3: Activity and programming

- Provide active recreation including: sledding, soccer, basketball, physical fitness stations, and running / walking.

### Topic 4: Safety

- Enhance safety such as: Implementation of requirements for Americans with Disabilities Act throughout park, safe water levels within stormwater facilities, maintain open views, modify basketball court, improve site lighting throughout park, and provide additional right of way sidewalks.

### Topic 5: Environment

- Maintain and enhance the woodlands and natural features of the park.

### Topic 6: Park identity

- Creating park identity through signage, unified site furnishings, and improved site amenities.

### Topic 7: Policy

- Facilitate collaboration between Milwaukee County and the City of Milwaukee, and create guidelines for future partnerships.

The Task Force determined that the design should celebrate the Park's namesake and selected the Copernicus Theme to develop as the preferred concept. Nicolaus Copernicus was a renaissance astronomer that formulated the idea that the sun was the center of the universe, and that the earth revolved around it. Moving forward with his philosophy as the design inspiration, the recommendations include a central plaza space and astronomy themed park amenities connected by walkways which represent the orbit of the planets around the sun. The educational aspect of this theming will be carried out via signage and other interpretive features throughout the park.

Comprehensively the Park Master Plan accommodates many of the overall design features such as, new right-of-way sidewalks along West Klein Avenue and South 22nd Street to provide improved pedestrian circulation around the park's perimeter. In addition, within the park are proposed resurfaced pathways to provide opportunities for multiple recreational activities such as biking, running, and walking. Fitness stations have been incorporated to provide additional active recreation opportunities for users.

Overall, the proposed design provides many new park amenities along with ample open space for both passive and active recreational activities while providing the necessary stormwater mitigation facility. The park's design features are further elaborated in the design summary, and are highlighted in greater detail through plan enlargements.

Three concept alternatives presented to the task force.



Park Master Plan



Legend

- 1 Entry Gateway
- 2 Native Planting
- 3 Picnic Shelter
- 4 Sled Hill
- 5 Sports Field / Open Space
- 6 Amphitheater
- 7 Educational Signage
- 8 ROW Sidewalk
- 9 Playground
- 10 Modified Basketball
- 11 Labyrinth Garden
- 12 Copernicus Plaza
- 13 Council Ring
- 14 Woodland Restoration
- 15 Creek Restoration
- 16 Open Space
- 17 Multi-use Trail





# Copernicus Plaza Plan Enlargement



- 1 Sled Hill
- 2 Picnic Shelter
- 3 Educational Signage
- 4 Labyrinth Garden
- 5 Formal Garden
- 6 Copernicus Plaza
- 7 Basketball Court
- 8 Playground

## Woodlands

Preservation and restoration of the existing woodlands was a common goal of many of the stakeholders, therefore, an invasive species eradication project is strongly encouraged to improve the quality of the woodlands. Along with the eradication project, a series of wood chip trails throughout the wooded area are recommended to provide better access and reduce erosion. A woodland clearing is proposed near Oak Creek with amenities such as a council ring that can function as an outdoor classroom or meeting space for students, local community clubs, and groups. In addition, restoration of Oak Creek stream bank revives an already present site feature. The preservation and restoration recommendations for the natural areas will improve habitat, and provide an improved resource for the neighborhood.

## Copernicus Plaza

The plan enlargement to the left highlights the sun shaped plaza that is the central feature of the programmed park space. Copernicus Plaza has formal garden plantings on the west side, and a park shelter and pergola that can be utilized for picnics and neighborhood gatherings on the east side. Park features surrounding Copernicus Plaza include a new themed playground with interpretive earth and moon play surfaces along with modifications to the existing basketball court surfacing and hoop locations which represent Saturn. The circular path dividing the playground and basketball court are an interpretation of the path in which the planets orbit around the sun.

## Open Space

Within the framework of all the design considerations is the mandate to provide a facility that will mitigate the stormwater flooding issues of the surrounding neighborhood. Through the public input process and direction of the Task Force, it was determined that in order to provide the maximum level of protection in flood events and provide the least amount of impact in the Park, that the stormwater facility should include both the site and the properties immediately across South 20th Street to the east. The design accommodates this facility at the southeast corner of the park in the form of a recessed stormwater mitigation area that functions as an unprogrammed open space during dry periods. The open space is large enough to accommodate a U10 sized sports field. The earthwork required to create the facility allows for the construction of a sledding hill on the west side. In addition, an amphitheater with walkways for all park users is tucked into the hillside. Naturalized plantings, consisting of flowering forbs and grasses, are recommended on the north side of the open space because these plants are tolerant of the both wet and dry conditions and will provide an attractive transition between the open space and existing woodlands.



Open Space Plan Enlargement



- 1 Native Planting
- 2 Sports Field / Open Space
- 3 Amphitheater
- 4 Accessible Walkways
- 5 ROW Sidewalks
- 6 Entry Gateway
- 7 Open Space



N Scale 1" = 80' 40 0 40 80 160



# Copernicus Plaza





Open Space / Stormwater Mitigation Facility

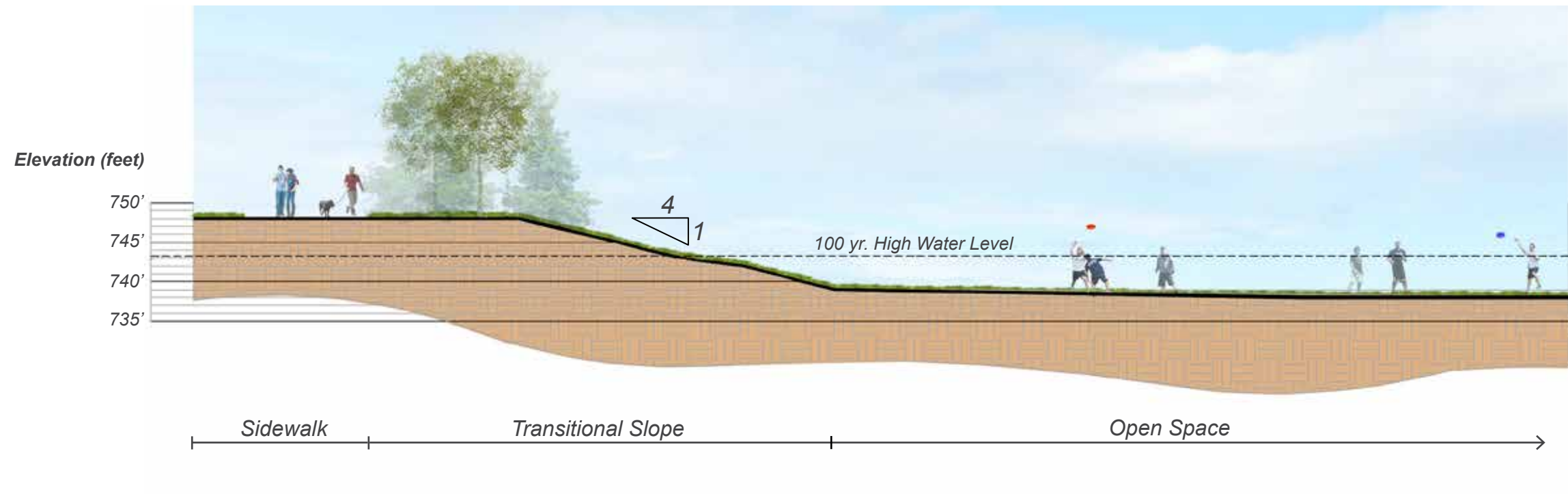




# Open Space Cross Section



▲ Key Map



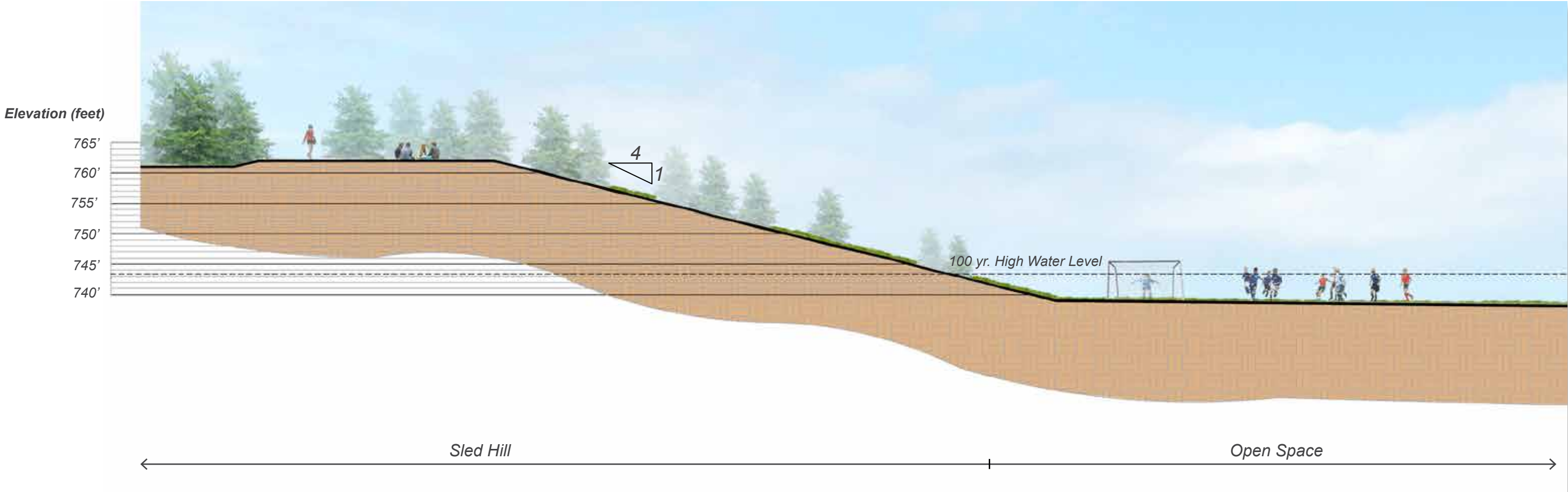
Section A-A' \*Estimated drain down time for the stormwater management facilities is 24 to 48 hours.



**Open Space Cross Section**



▲ Key Map



Section B-B' \*Estimated drain down time for the stormwater management facilities is 24 to 48 hours.



## Best Practices

Best practices represent a comparison of surrounding communities that have similar project developments relating to scope, scale, character and quality. Throughout the planning process, best practices presented to the stakeholders and public are a visioning tool utilized to aid in development of ideas to address topics such as, recreational education, recreational activities, park amenities, park access, and maintenance of natural areas within the parkland.



### Education

Creation of an identity for Copernicus Park through a unified park theme. Themed playground, interpretive park signage, and interactive art provides diverse educational opportunities.

### Activities

Open spaces allow for four season use of the park through a range of activities that provide play for all age groups. The final design incorporates activity spaces for active and passive recreation. Active activities included but are not limited to; soccer, frisbee, exercising, and sledding. Passive activities include bird watching, nature walks, and kite flying.





**Park Amenities**

Improved shelters, site furnishings, and amenities provide attractive safe spaces for gatherings. Amphitheater seating allows for recreational sports viewing, seating for outdoor movies, and special events. The final design incorporates a picnic shelter and pergola for seasonal use of the park.

**Park Pathways**

Enhancement of existing walkways and creating new walkways provide improved circulation in and access to the park. Loop multi-use trail allows for activities such as walking, biking, and running as well as creating seating opportunities.

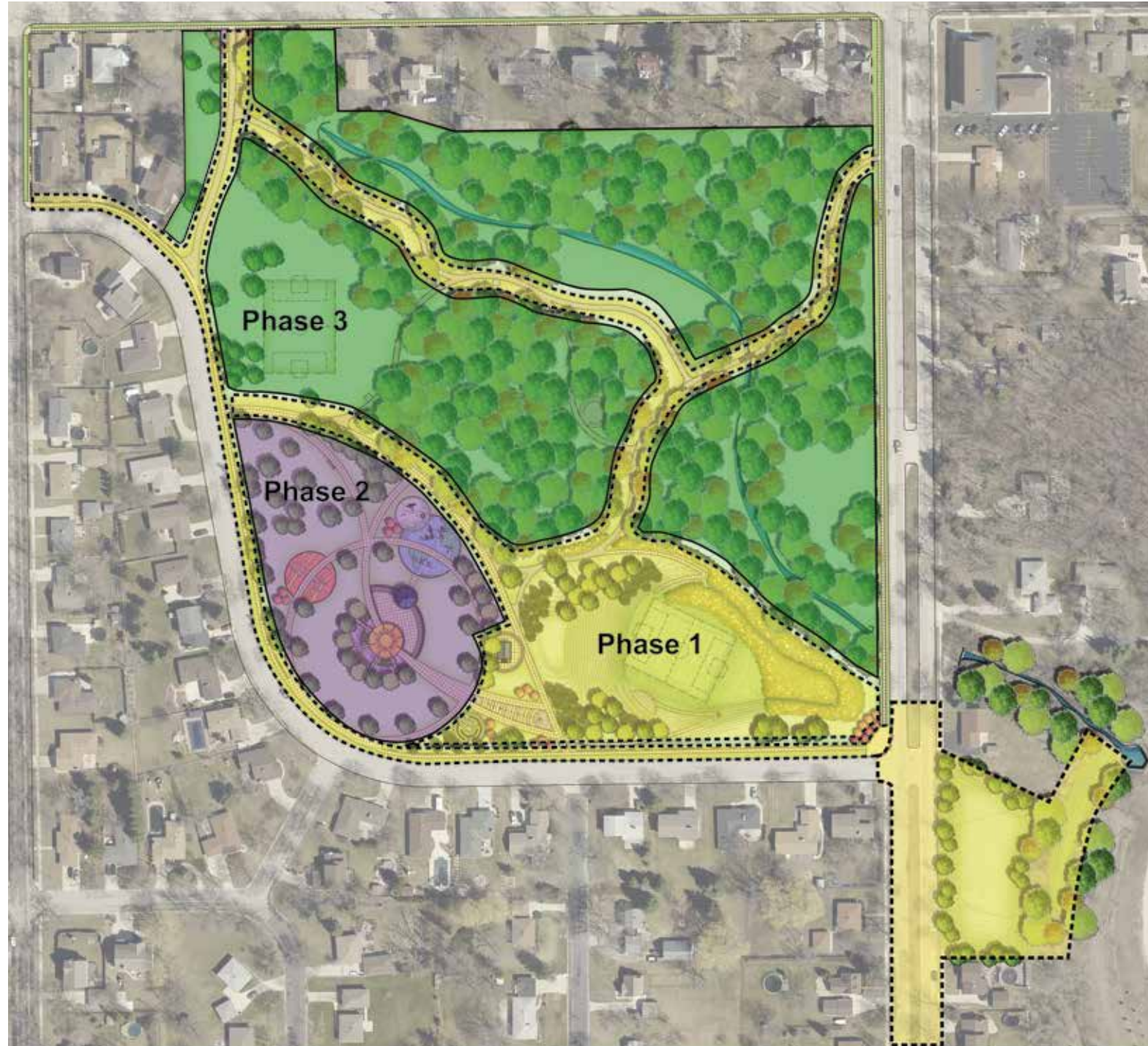
**Natural Areas**

The native flowering forbs and grasses transitioning from the stormwater mitigation facility to the North Branch of Oak Creek stream channel will be attractive and provide opportunity for environmental education.



## IMPLEMENTATION PHASING

A phased approach is recommended to construct the Copernicus Park improvements. The advantage of phasing is that it allows for the allocation of funding over several budget cycles and the ability to manage development in a way that minimizes impact to existing park use. It is recommended that preliminary design and engineering commence for the entire project at one time in order to seamlessly design the improvements and to maximize efficiencies in acquiring survey and geotechnical data that will inform the park design. Final design and engineering should immediately follow for the Phase 1 development area. Phases 2 and 3 should be scheduled and constructed based on future funding availability.



### **Phase 1 - Estimated Cost \$3,450,000**

The Phase 1 development is the largest of the three development phases in terms of capital expenditure. Phase 1 will include the new open space / stormwater mitigation facilities on the east and west sides of 20th Street and reconstruction of approximately 700 feet of 20th Street to accommodate new sewer infrastructure. The existing park playground, basketball court, and trails outside the limit of construction would remain open for use during construction. New park amenities included in Phase 1 development include:

- Stormwater mitigation facilities
- Sports field/ open space
- Picnic shelter
- Educational Signage
- Entry gateway
- 20th Street reconstruction
- Sewer infrastructure
- Park sidewalks
- Multi-use trail
- Park lighting
- Amphitheater
- Sled hill
- Park entry plazas and signage
- Solar system interpretive feature
- Labyrinth
- Lawn restoration, trees & landscape plantings

### **Phase 2 - Estimated Cost \$1,400,000**

Phase 2 includes the main Copernicus Plaza features and interpretive elements. Key elements in Phase 2 include:

- Copernicus Plaza
- Park shelter and pergola
- Walkways
- Exercise Stations
- Playground and tot lot
- Reconfigured basketball court
- Interpretive paving and signage
- Garden plantings
- Drinking fountain
- Park lighting
- Lawn restoration, trees & landscape plantings

### **Phase 3 - Estimated Cost \$400,000**

Phase 3 work encompasses the restoration of the woodlands and Oak Creek. The design and engineering for this phase of work includes evaluation of the existing trees to determine species, size, condition, and habitat value as well as hydraulic analysis of Oak Creek to determine impact of cutting the bank to create a more gradual slope. Bank restoration may include both erosion control blanket and other “bio-engineer” techniques to improve conveyance, water quality, wildlife habit and mitigate erosion.

- Removal of invasive trees and understory
- Stream bank grading
- Bank stabilization
- Woodland trails
- River cobbles
- Native riparian and woodland planting
- Sports field / open space
- Council ring
- Interpretive signage



# MAINTENANCE AND OPERATIONAL RECOMMENDATIONS

## Funding

The Copernicus Park Master Plan improvements will be primarily funded through a combination of City and County general obligation funds. In addition to City and County funding there are elements within each implementation phase that provide opportunities for grant funding. The Wisconsin Department of Natural Resources administers several grants that could provide additional funding opportunities.

The following grants fall under the Knowles-Nelson Stewardship Local Assistance Grant Program:

- Aids for the Acquisition and Development of Local Parks (ADLP)
- Urban Green Space (UGS) grants
- Urban Rivers (UR) grants
- Acquisition of Development Rights (ADR)

The following federal recreational grant programs are also administered through the Local Assistance Stewardship Grant Program:

- Land and Water Conservation Fund (LWCF)
- Recreational Trails Act (RTA)

Other potential WDNR funding opportunities include:

- County Forest Wildlife Habitat Grant

US Department of Transportation Grants:

- Transportation Investment Generating Economic Recovery (TIGER)



## FINANCIAL SUSTAINABILITY

Copernicus Park lends the opportunity to generate program revenue through programming activities within the park which can aid in long term financial sustainability for Copernicus park.

Programming opportunities include:

- Renting picnic shelters
- Rental of winter sporting equipment for the sled hill
- Rental of plaza space for program events

Upon completion of the park improvements, proper maintenance will be required for upkeep and to protect the resource. Hartung Park, a park of similar size and function which was a collaborative project between the City of Milwaukee and City of Wauwatosa estimated an annual budget of \$8,000 to \$10,000 per year. Developing partnerships with local stakeholder groups can help defray some of the costs. For example, tapping local neighborhood associations or gardening clubs to assist in maintaining gardens or removal of invasive species in the woodland area can have a big financial savings as well as the added benefit of providing volunteers with a sense of stewardship and community pride in their park.

The maintenance of Copernicus Park will be under the operation of Milwaukee County Parks, and the new open area east of South 20th Street is to be maintained by the City of Milwaukee. Basic maintenance duties currently provided at Copernicus Park that shall continue to be included:

- Mowing
- Tree trimming and removal
- Snow removal
- Play equipment inspection and repair
- Graffiti removal
- Electrical / lighting system repair and maintenance

The table below identifies some maintenance tasks that can be performed by volunteers (under supervision) and those that should be performed by professional only.

Volunteer Tasks	Professional Tasks
Mulch and line trails	Fertilizer application
Seed and maintain herbaceous plantings	Tree pruning
Clean up litter and debris	Chipping trees into mulch
Planting native plant materials	Application of any disease or pest controls
Shrub pruning	Electrical repairs and maintenance
Landscape bed maintenance	Mowing
Clearing noxious weeds along trails	Snow removal

It is recommended that the native planting and woodland areas included in the Copernicus Park improvements receive a higher level of maintenance than what is currently performed at the park. Mowing, burning, and the eradication of weeds and invasive plants are all tasks that should be performed in order to keep the natural areas attractive and safe for the residents. Some of these tasks, as identified above, can utilize the assistance of neighborhood groups and garden clubs to help offset the labor cost; however, the technical tasks such as mowing, burnings, and application of herbicides will need to be done by experienced professionals. This can either be performed by Milwaukee County Park's staff or subcontracted out to a local natural resources contractor. Maintenance requirements specific to the native planning will be most intense during the first few years and will taper down with establishment as follows:

### Initial Maintenance (Years 1-2):

- Mow cover crop to a height of 6-8 inches after it reaches 1-2 feet in height
  - Removal of noxious weeds, either by hand or herbicide application
- Approximate cost for initial maintenance is \$3,000 per year\*

### Follow-up Maintenance (Years 3-5):

- Prescribed burns in spring
  - Occasional mowing to keep weeds down
  - Noxious weed management
- Approximate cost for follow-up maintenance is \$4,000 per year\*

### Annual Maintenance (Year 5 and beyond):

- Prescribed burns
- Approximate cost for annual maintenance once established is \$1,500 per year\*

\* Maintenance costs are based on data from *Natural Landscaping for Public Officials: A Sourcebook*. Chicago: Northeastern Illinois Planning Commission, 2004.



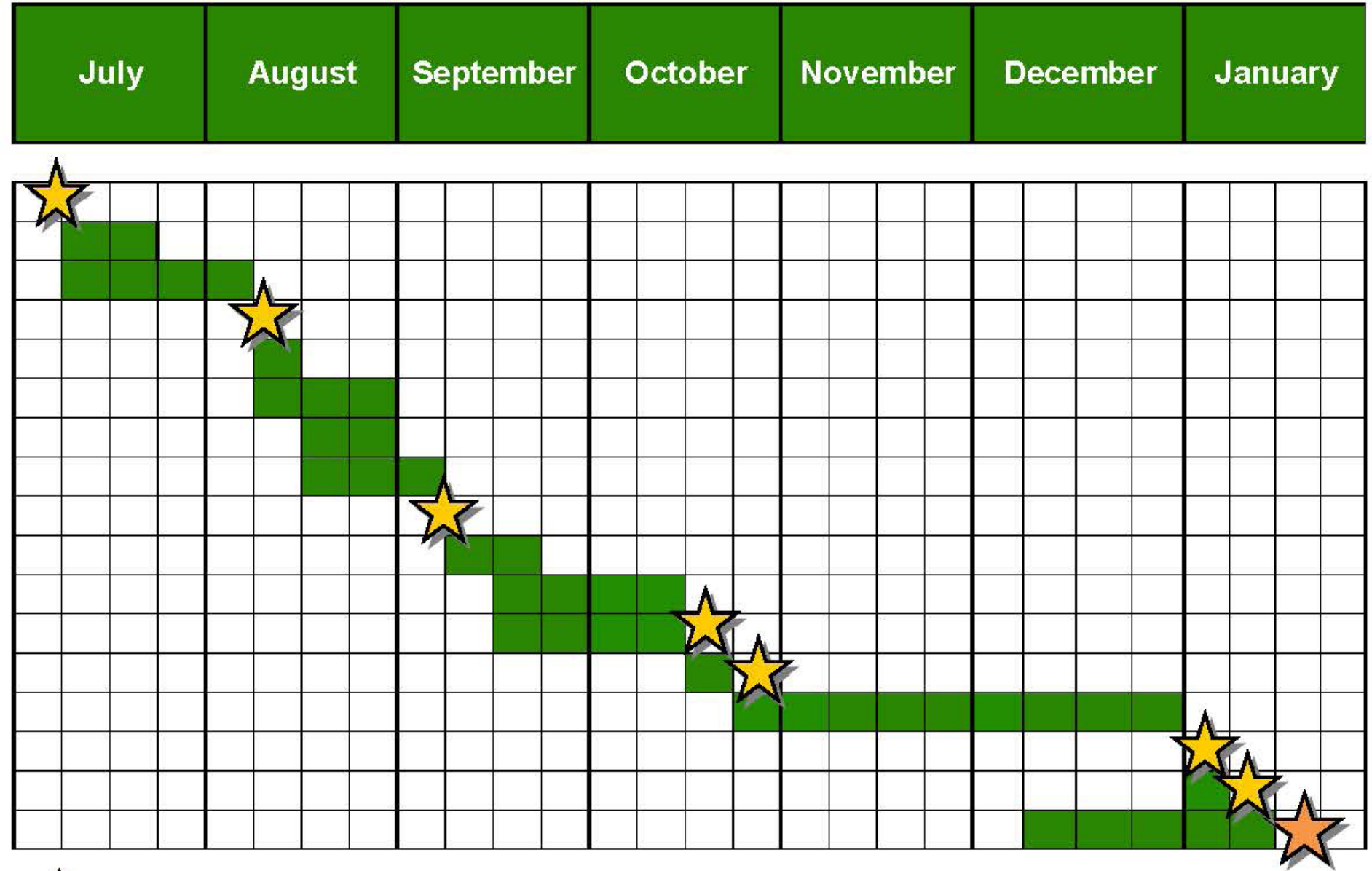
# **APPENDIX**



Project Schedule

**Master Plan**

- 1 Project initiation KO meeting (mtg. #1)
- 2 Project Input Framework
- 3 Data Collection
- 4 Programming Workshop (mtg #2)
- 5 Develop Project Goals / Vision
- 6 Environmental Impact Analysis
- 7 Develop Site Suitability Map
- 8 Develop Concept Alternatives
- 9 Concept Presentation (mtg #3)
- 10 Develop Preferred Alternative
- 11 Implementation Strategy
- 12 Preferred Alt. Pres. (mtg. #4)
- 13 Open House (mtg. #5)
- 14 Preliminary Master Plan
- 15 Task Force Mtg. (mtg. #6)
- 16 Final Presentation (mtg #7)
- 17 Draft Final Master Plan



★ Review / Meeting Points  
(actual dates to be determined)



# Public Workshop Visioning Matrix

## Copernicus Park Public Workshop Visioning Matrix

Subject: Copernicus Park Public Workshop Meeting  
 Day/Time: August 13, 2014 6:30 p.m.  
 Location: Cooper Elementary School



Removal of Basketball Court	Hydrology & Stormwater	Activity & Programming	Safety	Environment	Park Identity	Policy
1	2	3	4	5	6	7
<i>(Priority Dot) Total: 34</i>	<i>(Priority Dot) Total: 23</i>	<i>(Priority Dot) Total: 23</i>	<i>(Priority Dot) Total: 7</i>	<i>(Priority Dot) Total: 7</i>	<i>(Priority Dot) Total: 6</i>	<i>(Priority Dot) Total:</i>
Remove basketball court, to alleviate security and drug issues. (15)	Put detention Pond east of Klien on 20th Street (16)	Keep sledding, soccer area. (10)	Deer crossing sign on 20th. (7)	Maintain woodlands. (6)	Improve look, more natural, flowers, around creek. (4)	Park renovation will impact our property taxes.
1/2 court basketball, lower hoop for younger children. (15)	Water retention needed, safety needs to be main concern. (4)	Community Garden, Vegetable, Flowers. (7)	Security = top priority	Enhance the natural areas of the park	Restroom in park. (1)	No current H.O., County above city residents.
Convert basketball court into a tennis court. (4)	No retention pond in Park. (2)	Keep green space. (3)	Supervise and patrol basketball court.	Buckthorn eradication project.	New street name. S. 20th street becomes Copernicus Way. (1)	
Replace Basketball court with children facilities.	French drain system. (1)	Activities for all ages, baseball, soccer, etc.. (1)			Improve pavements on paths.	
Relocate basketball court, because it is too close to toddler playing area.	No dry pond in park.	Exercise stations. (1)			Add, and improve trash cans.	
Split court in half by installing benches back to back.	Do not take precious park space for retention ponds.	Natural flooding area. (1)				
Keep Basketball court, older kids need recreational areas as well.		More activities for kids to do, besides just a playground.				
Convert basketball court into a or obstacle court.		Running path.				
		Replace sand with rubber mats.				
		More open, not designated "play" areas.				
		Gravitate towards younger children.				
		More seating, benches, etc.				



Concept Alternatives



Copernicus Concept



Garden District Concept



Sports Concept

October 29th, 2014



Copernicus Park Master Plan  
Milwaukee, WI





## Public Workshop Summary

August 13, 2014 6:30 p.m. - 8:30 p.m.

Cooper Elementary School

### Task Force Attendees:

Zafar Yousuf – City of Milwaukee DPW  
Timothy Thur – City of Milwaukee DPW  
Kevin Haley – Milwaukee County Parks  
Jason Haas – Milwaukee County Board Supervisor  
Terry Witkowski – Alderman, City of Milwaukee  
Peter Nilles – TERRA Engineering, LTD  
Bill Schmidt – TERRA Engineering, LTD  
Dustin Erickson – TERRA Engineering, LTD  
Brooke Davis – TERRA Engineering, LTD  
Ashley Johnson - TERRA Engineering, LTD

### Participants:

Task Force committee members, Milwaukee County Parks, City of Milwaukee, TERRA Engineering, Neighborhood association members, and the general public. The workshop was promoted through announcements that were sent out to the surrounding community, and yard signs displayed around the park's perimeter.

### Objective:

To familiarize the public with the Task Force's work to-date, and cooperatively develop recommendations for site amenities identified by the public through the workshop visioning process.

### Objective:

Participants were introduced to the study area's existing conditions, surrounding context, and visioning process through a presentation by the consultant group, County, and City staff. The presentation reviewed the opportunity analysis up to date through the illustration of the surrounding cultural features, physical site amenities, neighborhood hydrology, and best practices for Copernicus Park.

### Process:

The group was asked to divide into small groups to generate issues and opportunities pertaining to Copernicus Park. Next, the feedback was collected and grouped into similar overarching categories. Lastly, each participant was asked to mark three topic areas of their highest priority. At the end, each comment was reviewed and discussed to reveal the participant's prioritized list of vision elements for the future of Copernicus Park.

### Outcome:

A detailed list of priorities regarding stormwater mitigation issues, park programming opportunities, and goals and objectives for the Master Plan. A matrix was developed by the consultant team displaying the issues and opportunities from the seven different categories; Hydrology & Storm water, Environment, Activity, Park Identity, Safety, Policy, Removal of Basketball Court.



*Task Force Presentation*



*Small breakout group discussion*



*Group placing priority dots on overall topics*



*Discussion on highlighted topics.*

### Next Steps:

With an established community vision for Copernicus Park, the next steps of the process will be to develop alternative concepts for the park utilizing the Task Force and communities' input. After review from the City and County a preferred design will be chosen, and an open house will be held to review with the Task Force and general public. A final Master Plan document will be assembled and a final presentation will be given to Milwaukee County Parks, and Milwaukee DPW for adoption.



## Open House Summary

October 29, 2014 6 p.m. - 9 p.m.

Cooper Elementary School

### Task Force Attendees:

Zafar Yousuf – City of Milwaukee DPW  
Timothy Thur – City of Milwaukee DPW  
Kevin Haley – Milwaukee County Parks  
John Dargle – Milwaukee County Parks  
Jason Haas – Milwaukee County Board Supervisor  
Terry Witkowski – Alderman, City of Milwaukee  
Don Janicki – Neighborhood Association Member  
Patricia Najera - Neighborhood Association Member  
Peter Nilles – TERRA Engineering, LTD  
Bill Schmidt – TERRA Engineering, LTD  
Dustin Erickson – TERRA Engineering, LTD  
Brooke Davis – TERRA Engineering, LTD

### Participants:

Fifty-four residents from the neighborhood were documented on sign in sheets. The open house was promoted through flyers that were sent out to the surrounding community, yard signs displayed around the park's perimeter and through the project website at [www.copernicuspark.com](http://www.copernicuspark.com).

### Objective:

To receive feedback and recommendations on the conceptual park improvements from neighborhood residents and stakeholders.

### Presentation Format:

The presentation format used was an informal open house where participants signed in, received comment sheets, and viewed exhibit boards that included a summary of the public workshop, park concept plan, plan enlargements, perspective renderings of proposed improvements and precedent images of activities, features and park theme that depict the potential character of the improvements. Task force members were available at each exhibit board to explain the plan and answer questions.

### Open House Feedback Summary:

The result of the open house was written comments from the public on their overall thoughts of the proposed park improvements. Twenty-three written comments were received from participants. Overall consensus was in favor of the proposed improvements. Following is a summary of the comments arranged into eight overall topics.

#### 1. General Park Feedback (7 Comments)

Summary: These participants' comments expressed how they felt the proposed design will be an improvement for the neighborhood. In addition some the comments stated that the parks theme could be simplified in relation to initial cost of the improvements and long term maintenance.

#### 2. Protection of the existing woods & Preservation of Green Space. (4 Comments)

Summary: These participants' comments focused on the importance of the existing woods, and they express how existing trees should not be removed as part of the improvements. Preservation of open space is also important to these participants, and they stated that the open field in the north corner of the park should be left untouched, and should not be used for programmed sports.

#### 3. Leaving the park in its current state. (3 comments)

Summary: These participants' expressed disagreement with the preferred alternative design. These participants stated that they believe the current state of the park is the optimal use of the park and do not agree that the existing park amenities need to be updated or changed. These comments also discussed the detention pond location, and how it should not be located in the park, but instead it should only be located on the east side of 20th street.

#### 4. Park completion timeline. (3 Comments)

Summary These participants' comments were all in agreement with the preferred concept design, and would like the park to move forward in a timely manner. They also expressed how they would like to see a construction timeline posted somewhere so they could be kept up to date with the progress.

#### 5. Flooding Issues & Proposed Resolutions (2 Comments)

Summary: These participants' comments focus on evaluating the existing infrastructure and waterways as well as the proposed infrastructure for stormwater management. They are concerned that the existing sewer infrastructure is need repair before moving forward. Also the statement was made to focus on the flooding issues surrounding the park first and foremost.

#### 6. Long term park maintenance. (2 Comments)

Summary: These participants' are concerned about the long term care for the park after the improvements are in place. They expressed that care for the park's proposed site amenities might be too difficult to maintain for the county, and feel this topic needs to be addressed.

#### 7. Park Safety. (1 Comment)

Summary: This participants' comment states that they would like the improvements in the park not to attract unwanted activity. They expressed that areas for gathering in the woods could attract this type of activity and should be reconsidered.

#### 8. Stream restoration. (1 Comment)

Summary: This participants' comment states that creek restoration needs to be the first priority for the park improvements.

### Next Steps:

With an established community vision for Copernicus Park, the next steps of the process will be to finalize the preferred alternative for the park utilizing the Task Force and communities' input. After review with the City and County a final project schedule, budget, and phasing implementation will be developed for Milwaukee County Parks, and Milwaukee DPW for adoption.



## Public Workshop & Open House Participants

Amanda Akridge	Christopher & Cheryl Strankowski	Jerry Wesoloski	Leo Nowak	Richard & Deborah Bock
Amber Krajewski	Dale & Sherry Schwark	Jeff Capstran	Lydia Torres	Rick Mueller
Arthur Kordus Jr.	Dan Nikolaus	Jeff Krusick	Marlene Stachowiak	Robert & Linda Domrois
Barbara Court	Dave & Peggy Anderson	Jill Waltersdorf	Marvin & Scott Grzechowiak	Robert Viktora
Bill & Sue Fuchs	David Czajkowski	Joe & Ellen Burton	Mary Moder	Ross Milton
Bob & Pat Skrobis	David Durovy	Joe Klinkiewicz	Manuel & Holly Silva	Ruben Morales
Bob Domrois	Dawn Bigalk	John Miller	Miguel & Irene Garcia	Shannon Lopez
Bob & Gerry Belter	Dick Kubacki	John Nelson	Jeff Capstan	Sharon Delong
Bob Raneew	Dick & Patricia Haak	John & Kathleen Avery	Jeff Krusick	Sal Santaro Jr.
Bob & Judi Free	Don Janicki	John & Kathleen Pruitt	Mike Garcia	Steve & Sandy Grams
Brian & Lori Otzelberger	Ed Clasen Jr.	Joyce Randou	Myron Strong	Steve & Carol Blonien
Brian Jaworski & Corinne Scaglione	Eric Durvoy	Judith Free	Oscar & Rosa Castaneda	Steve Duncan
Brian & Mary Zydzik	Frank & Pam Picciolo	Judy Kolz	Pat Kreil	Todd Johnson
Carl & Mary Czajka	George Legath	Julio & Rita Santiago	Pat Szmurlo	Tom Chopp
Chad & Cheri Meyer	James & Nancy Skwarek	Kathryn Nowak	Paul & Patricia Najera	Tom Geraets
Cheryl Spsychalla	Jeff & Helen Ray	Kelly Hughbanks	Paul Ihlenfeld	Tom Tarkowski
Chris Binter	Jeff & Leslie Thiele	Kelly O'Neill	Ralph Zielinski	Val Ness
Connie O'Malley	Jerry & Kathy Motz	LeAnn Mantes	Ray & Pat Franecki	Wayne Ray
			Renee Stanley	Wayne & Mary Bellinger

\*Participants names were transcribed from the public workshop, and open house sign-in sheets.



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