# A NEW URBAN BOTANICAL PARK AND CONSERVATORY

## Re-envisioning Mitchell Park and its Domes for the Next 50 Years

## A Business Plan and Conceptual Design

ArtsMarket

Engberg Anderson ARCHITECTS

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PRESERVE, LLC

DURKIN ASSOCIATES

Plan developed for Milwaukee County Parks Department.

With deep appreciation to the Domes Task Force that worked for three years to develop a vision and pathway forward for this iconic Milwaukee park, architecture, and plants collection.

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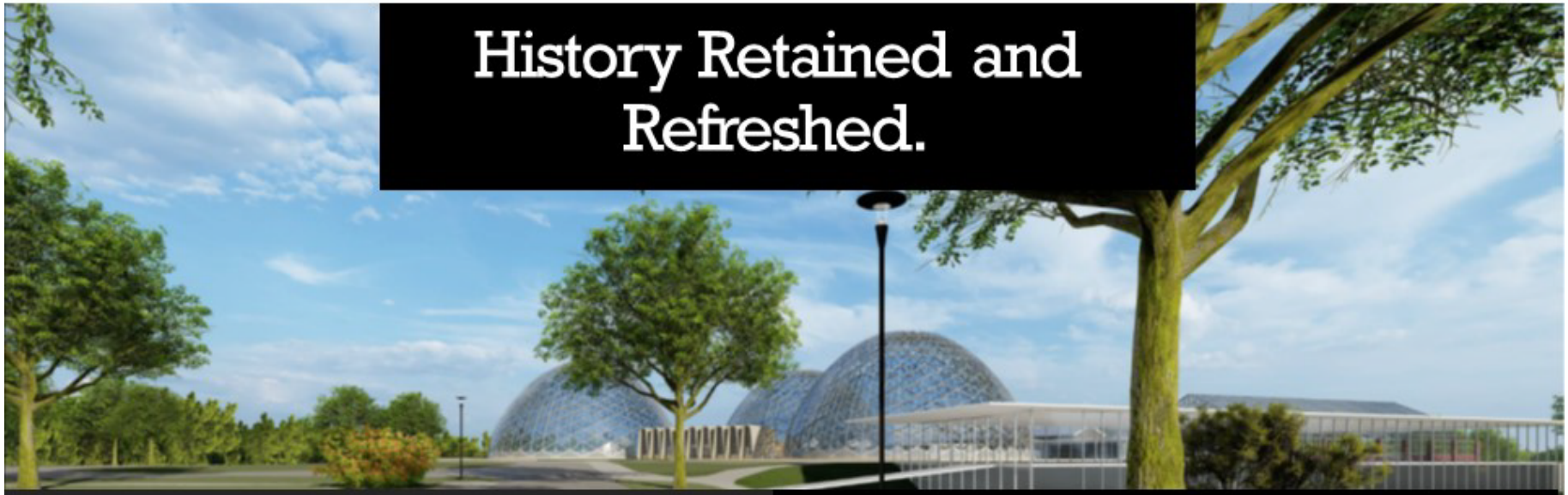
# Executive Summary

"Architecture is not simply the stage set in which we live our lives. It is also a reflection of how we live our lives and who we are."

*CityLab, July 22.2019

# History Retained and Refreshed.



Mitchell Park is Milwaukee's original horticultural and botanical park. In 1890 it was designed as one of Milwaukee's first five public parks, by the same architect who did the Pfister Hotel and Milwaukee City Hall. In the mid-1960's, the Domes, again designed by a Milwaukee architect, Donald Grieb, replaced prior conservatory buildings that had been on this site even before it became a public park. The Domes are considered on par with the world-famous St. Louis "Arch" as iconic mid-century American architecture, were the first conoidal buildings anywhere in the world, and remain the world's only conoidal glass structure spanning a conservatory. They are an architectural and engineering feat, awarded a US Patent. Visible for miles they symbolize Milwaukee: losing them would be like losing the heart of the City.

The Domes will be retained and reinterpreted. The "arid" and "tropic" Domes that in the 1960's brought Milwaukee residents their first taste of diverse climates will be rehabilitated following national historic preservation guidelines. Inside, the climates they feature will become integral to interpreting the global places and cultures the represent. Each year will bring different worlds of plants, people and culture. The deserts of Africa, the rainforests of Costa Rica, and the tree canopy of Wisconsin. Each will illuminate the changes in our global ecosystem, including here in Wisconsin. Each will include focused learning opportunities, curriculum, cultural exploration and celebration. Supporting them: a new Welcome and Education Center will be added, providing classrooms, research centers, exhibit and retail space.


Mission:
Connecting and inspiring people through the world of plants.
A New Vision for Mitchell Park & Domes.
A place for wonder and fun, learning and exploration, involvement and community.
Programming the Domes and Park with changing/touring exhibits per a museum, multi-faceted education and community programs.
Activity hubs throughout the Park.
Children's gardens.
Youth and teen apprenticeship and stewardship programs.
Adult health and wellness, urban gardens programs.

# The Park that is the Heart of Milwaukee.

Mitchell Park and Domes Restored, Vibrant, Sustainable.

Milwaukee's 21st Century Urban Botanical Park, relevant, green, and vibrant, built for the next 50 years.

Freshly programmed and animated Domes, bringing the world of plants, their ecosystems and cultures to Milwaukee all featuring changing exhibits and programs.

New Welcome Center, retail, education and research hub.

Farm-to-table restaurant, new events Pavilion, food trucks, outdoor and indoor food service and family picnic spaces.

More pathways and access. Park-wide lighting. Improved amphitheater.

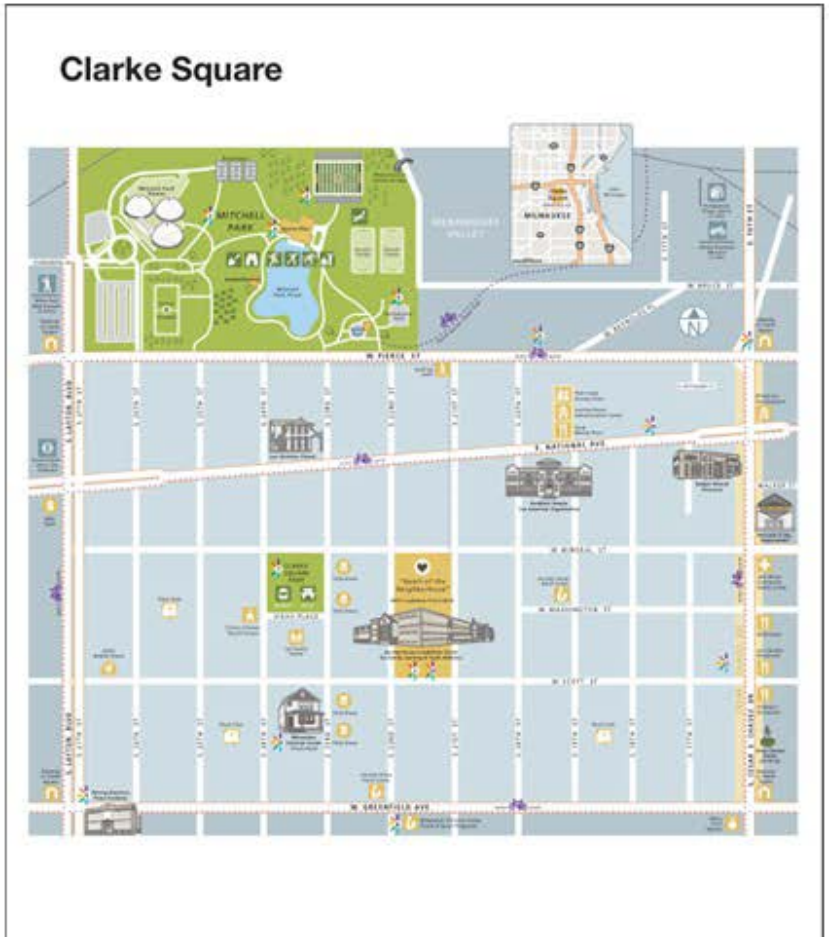
Clean and fresh pond, stream circulation, reflecting pool, water stewardship best practice.

Outdoor and indoor garden and learning: health, urban ag, hands-on and apprenticeship programs, certification, workforce development.

Economic engine for the Clarke Square neighborhood, sustainable economic model. Supporting 300 quality jobs and a hub for workforce development.

# This has the power to significantly improve neighborhood quality of life, education and employment.

## The Clarke Square Neighborhood is an Opportunity Investment Zone.




**68%** Latino as compared to 18% City-wide.

**More young children under 10** than elsewhere in Milwaukee.

**42% of residents live below the poverty level** as compared to 29% in Milwaukee.

**71% in the labor force** as compared to 76% in Milwaukee.

**9% less likely to get annual health** check up compared to Milwaukee as a whole; 8% more likely to have significant health issues. 9% less likely to engage in physical activity than Milwaukee residents as a whole.

# 1. The Domes

They are historically important for their architecture and engineering. There is no other structure like them anywhere in the world.

They will be rehabilitated for the next 50 years, with important added elements to enhance the visitor experience.

# 2. Bringing back Mitchell Park

**More trails, paths, places for family fun.**

Well lit, outdoor garden areas and surrounding picnic and food service areas. Spend an hour. Walk the dog. Stay for the day. Come back often for live music and events.

**Bringing back lost features.**

Mitchell Park always had tennis courts. They will return. Kayak on a renewed, sparkling clean pond. Wander and enjoy sustainable garden beds.

**Remember history.**

The first trading post in Milwaukee was located along the important Native American trail in the park in 1795. The white trader, Jacques Vieau, married a Menomonee woman. Their daughter Josette became the wife of Milwaukee's first Mayor, Solomon Juneau. Visitors will be able to see the trail and site.

# 3. Enhancing The Park and Domes as an Urban Botanical Park

### Changing Climate

The Park will include a new Center for Wisconsin Urban Horticulture, devoted to sustaining Wisconsin native plant species and fostering our stewardship of Milwaukee's native assets.

### Water Stewardship

The Mitchell Park Pond was the first ever built in a Milwaukee park. Restored to sparkling water, it will now include a Park-wide re-circulation system, moving water throughout the Domes and Park. The goal: delighting visitors while being a demonstration site for smart water stewardship.

### Urban Agriculture and Health

With 60 acres, Mitchell Park offers ample opportunity for gardens. In partnership with the Medical College of Wisconsin's Office for Community Engagement, the Park will house a Center for Urban Ag and Health, bringing together world-class research and back-yard gardens.

### Food and Cooking

From casual garden to table dining to food trucks that mirror the cultures featured in the Domes, the Park will become a Milwaukee foodie paradise, complete with farm-to-table culinary instruction and its own culinary arts training program.

### Economic Impact

The Domes and Mitchell Park will become a center for workforce training in horticulture, urban ag, and culinary arts. With teen-to-professional programs, it will train and employ hundreds each year and be a powerful economic hub for the Clarke Square neighborhood.

# 4. Adding New Park Features

### Wedding Garden

A wedding garden will be added, seating up to 300.

### The Boathouse Pavilion

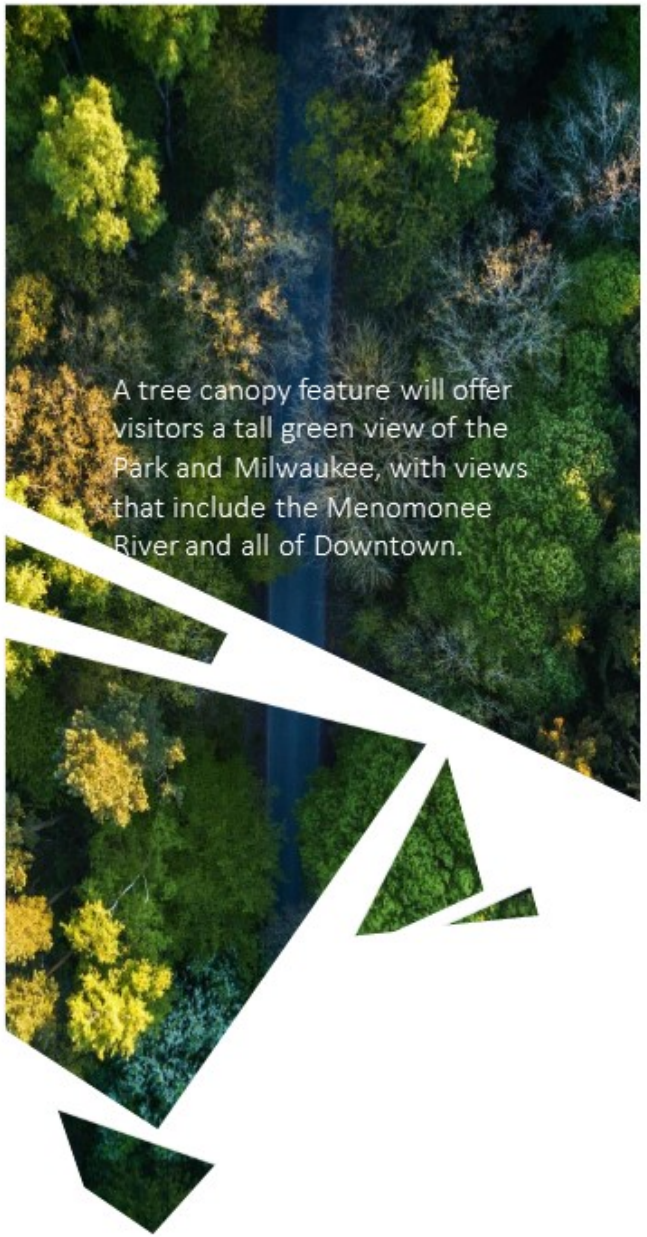
The mid-century modern Boathouse Pavilion will become a state-of-the-art event and wedding center.

### Children's Garden

A new children's garden will offer hands-on activities and fun, with learning hubs for grades pre-K, K-4, and 5-6.

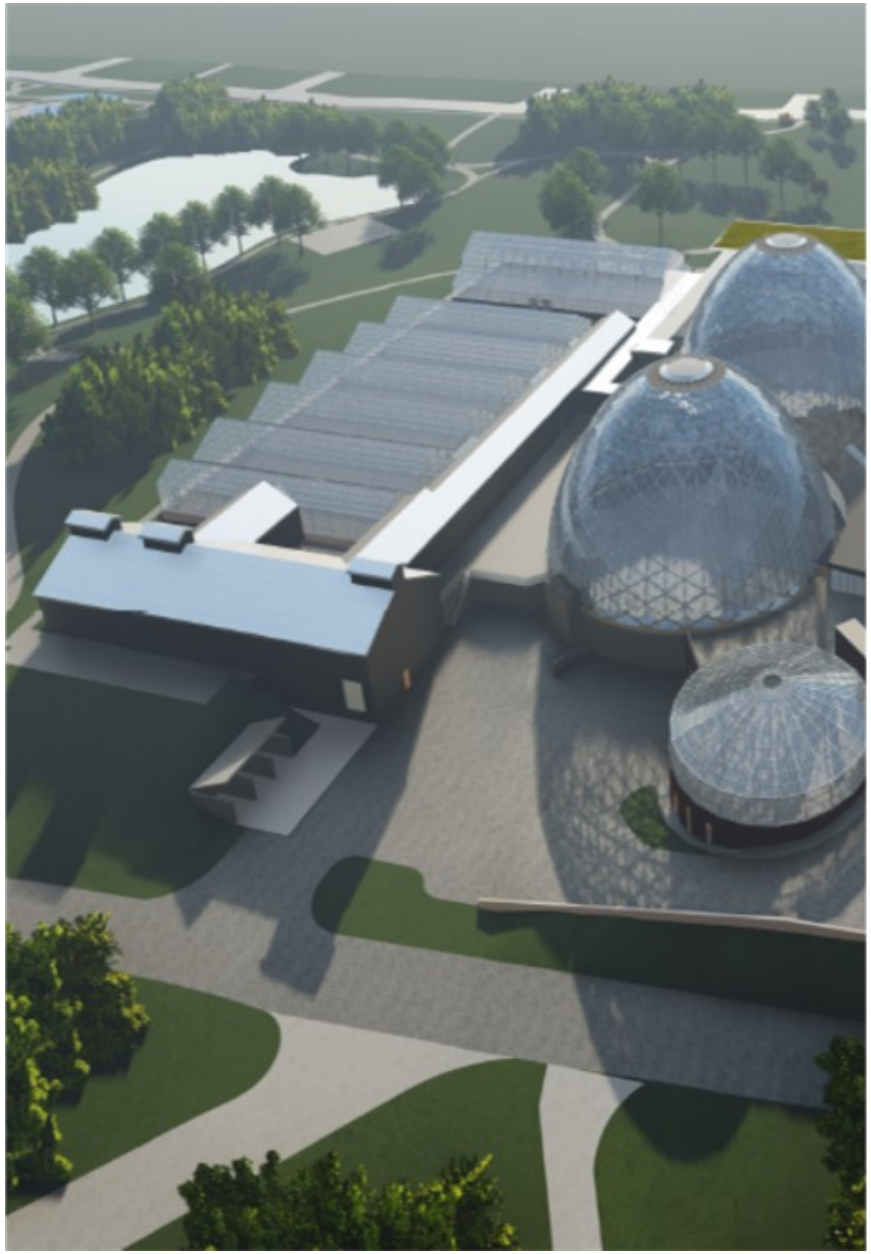
### Amphitheater

The amphitheater will be upgraded with terraced seating for 1500 and a stage for music, theater, and dance.



# Learning and Fun

Instructional greenhouse, outdoor signage, tree canopy in children's garden



# 5. The Greenhouses

## Research

Medical research combined with applied horticultural research and student hands-on science.

## Learning

Youth summer camps. Teen apprenticeship programs. Master Gardener Program.

## Cooking

For the home cook and the aspiring pre-professional.

6. Garden to table. Food Truck Fridays in the Park, complete with live music. Catered garden events. Learn to cook.

Plenty of ways to enjoy eating at the Park.

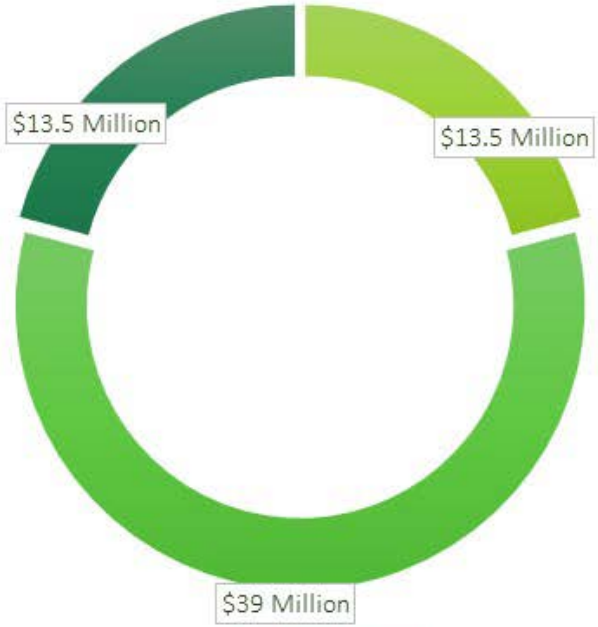
# A New Business Model

A public private partnership will operate Mitchell Park and the Domes and provide its programs and services.

# Capital Funding Plan: $66 million for the Next 50 Years

Private Sector Campaign

$13.5 million goal for major donor recognition and supporting gifts.




Milwaukee County

$13.5 Million. A million less than tearing down the Domes. Only 21% of the total.

Tax Credits and Opportunity Zone Investment

58% of the total project.

# Tax Credits and Opportunity Zone Investment

# $26 M

- Assumes $7 million invested via Historic Tax Credits. This goes directly toward rehabilitation of the historic Domes.
- Assumes $15 million in New Market Tax Credits. Twenty one percent (21%) of this remains as working capital; the balance of $11.85 million is a loan repaid from enterprise subsidiary revenues at the end of seven years.
- Assumes $5 million in PACE loan for energy-reducing use.

# $12 M

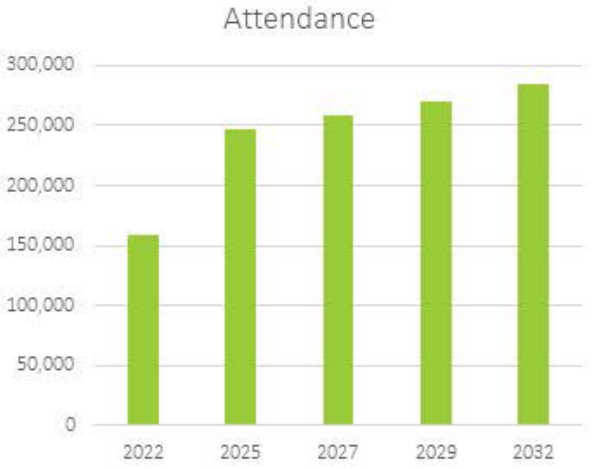
- The Mitchell Park and Domes Opportunity Zone Fund offers investor partners opportunity to build the Park's capacity as a major economic redevelopment hub for the Clarke Square neighborhood.

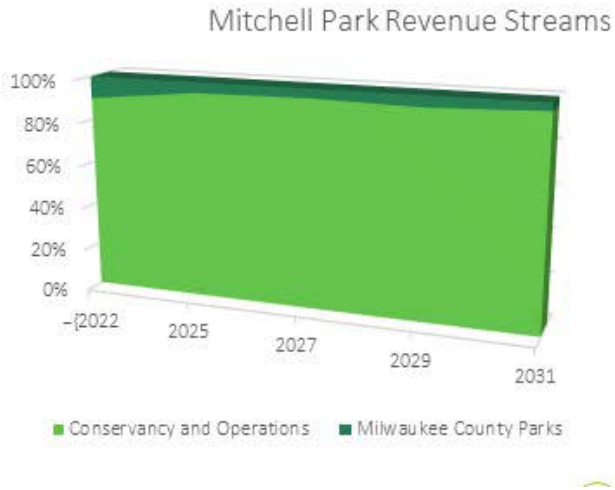
# Traction

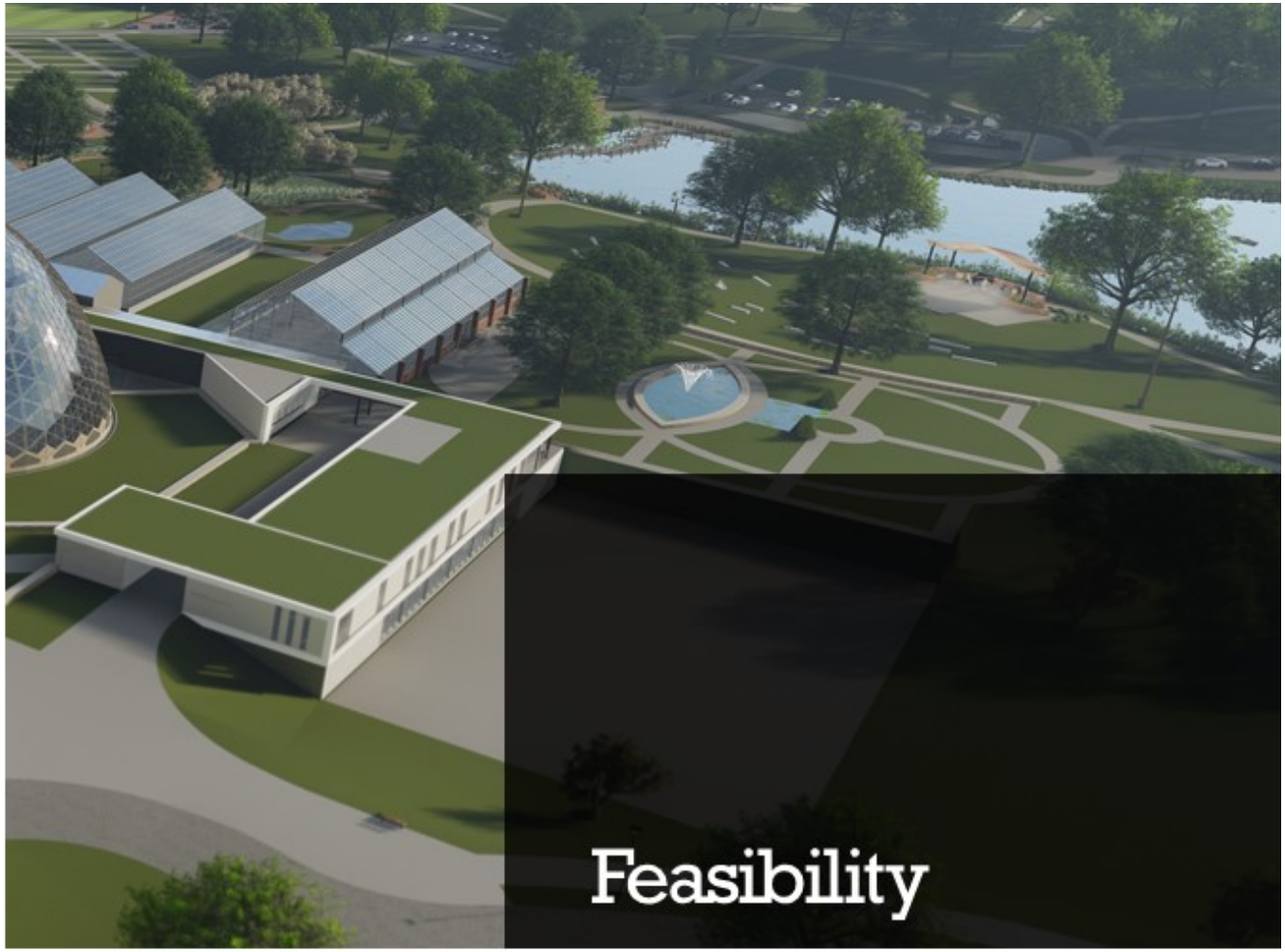
Forecasting for success

| | Admissions and Related Direct Revenue | Subsidiary and Partnership Revenue | Conservancy Revenue** | Milwaukee County Parks Annual Line Item Support | Total Revenues* |
|---|---|---|---|---|---|
| **2022** | $1.2 M | $615 K | $1.27 M | $350 K | $3.435 M |
| **2025** | $2 M | $1.01 M | $1.825 M | $250 K | $5.08 M |
| **2027** | $2.1 M | $1.02 M | $2.6 M | $250 K | $5.97 M |
| **2029** | $2.2 M | $1.13 M | $2.38 M | $250 K | $5.96 M |
| **2031** | $2.3 M | $1.2 M | $2.655 M | $225 K | $6.38 M |

*Revenue projections support payment of investment loans.
**Conservancy revenue includes grants funds brought toit through its programs and partnerships, research and services as well as membership. admissions and annual campaigns.






The funding and financing strategy put forward in this plan is challenging. Given the current environment for bonding in Milwaukee County, the aggressive use of Historic Tax Credits, New Market Tax Credits, Opportunity Zone Investment and PACE, and the related aggressive timeline is a **requirement,** not an option. If Milwaukee County could bond the full amount required, this approach would not be necessary: absent that there is no other financial capital model for feasibility. The planning study of traditional prospective donors suggests that some will join in, but that there is skepticism of the County's will and capacity to complete this project and adopt this plan. The plan has addressed this by assuming a higher level of bridge loans to move the project toward completion, with major private sector contributions coming last. This model aligns with what other municipalities are doing to preserve and restore their public parks and assets – a public/private investment-based model reflective of 21st Century realities in asset preservation.

## Summary of Recommendations

1. Over the next ten years, implement a capital and operating approach that will be the foundation for a sustained, dynamic Mitchell Park and Domes for the next 50 years, placing it on par with important Milwaukee cultural destinations such as the Zoo and Milwaukee Public Museum.
2. Adopt a Park and Domes mission that adds people to plants: "connecting and inspiring people through the world of plants."
3. Rehabilitate the historic Domes as architectural icons for Milwaukee, positioning the Domes, through their iconic architecture, to remain as internationally important examples of mid-century design and engineering.
4. Maintain the valued plant collection housed in the Domes as a foundation for animating the programming of the Domes, to make the experience relevant to today's Milwaukee community.
5. Build upon the Task Force's Phase 1's "eco-Dome" concept: expand this to three eco-domes that each become the context for telling multiple stories through changing exhibitions: The Deserts of the World Dome; Rainforests of the World Dome; and "Our World" Dome, which may also become the Wisconsin Center for Urban Horticulture. In these, use changing, culturally relevant exhibitions to again make the Domes and Mitchell Park a place of wonder and fun, learning and exploration, involvement and community.
6. Re-envision all of Mitchell Park as closely linked to the Domes, shaping an urban horticultural destination. Making the Domes successful requires building the Park for success indoors and outdoors, with destination gardens and multiple event venues. .
7. Reinstall gardens throughout the Park, re-envisioned for sustainability, including a Children's and Family Garden, a Wedding Garden and an area devoted to Urban Ag and Health, and improve upon the small existing amphitheater as an events venue.
8. Create a new Welcome Center entrance and retail area without taking away views of the current historic façade.
9. Make possible the adaptive reuse of non-historic elements of the complex of greenhouses/work areas, attached to the rear of the Domes.
10. Transform the largely unused pavilion boathouse at the lagoon into a state-of-the-art event/wedding/catering center, with an in-door/outdoor wedding ceremony area/garden.
11. Establish new spaces or buildings that will make possible lifelong learning engagement and education programs including apprentice, workforce development and degree programs in horticulture, horticultural therapy, and culinary arts as well as to support community services in horticulture, health and wellness. This will also support applied horticultural and medical research. In so doing, engage in partnerships with entities such as the Medial College of Wisconsin, MATC, UW Extension, and others. Include classrooms for K-12 and adult learning, a culinary arts/healthy food demonstration kitchen, seminar rooms, research space and a wellness clinic area.
12. Within this campus establish an apprenticeship program that will give teens a chance to learn horticulture as well as learn marketing and sales as they operate their own garden floral and vegetable market.

13. In the type of partnership demonstrated as successful in other Milwaukee County Parks, add a full-service year-round restaurant to the Park that will become the center of the Park's catering services and its operation of outdoor dining spaces and food trucks, and the hub of its expanded weddings and special events program.
14. To support this vision, create a new nonprofit entity to co-implement the plan together with Milwaukee County: the Mitchell Park and Domes Conservancy. Reporting to it, establish new subsidiary entities: Domes Support Services, and Mitchell Park Partnerships. Through these entities, support the capitalization and ramp up of the Park and its learning campus through Historic Tax Credits, New Market Tax Credits, and Opportunity Zone investment as well as a private sector capital campaign financing to limit the need for public sector funding to less than 30% of the total redevelopment cost.
15. Maintain the historic Green Bay Packers practice field, operated by Journey House, and the tots play area as important neighborhood assets. Add to these community spaces two additional community recreation assets, a soccer field and tennis courts that serve the neighborhood and partner institutions such as Journey House and Cristo Rey High School.
16. Add additional pathways for better walking and bicycling in the park including better connectivity to Three Bridges Park and the Hank Aaron Trail, and to provide additional public access to formerly underused areas in the Park. Reinstall the roadway through the park providing access to all the essential garden spaces and buildings. This will also increase parking within the park.
17. Implement a water recirculation plan that ensures a sparkling clean lagoon, re-envisions a water garden as was once at the front of the Domes, and connects the two to a clean water stewardship system include underground cisterns, water reuse for the gardens inside the Domes, and to provide all water for the Park while mitigating storm water run-off, ideally through a partnership with Milwaukee Metropolitan Sewerage District.
18. By operating the rehabilitated Domes and the full Park campus, become a jobs creator for the neighborhood, providing an estimated 300 quality jobs by full operations. (2027)
19. Anticipate a ten-year capital plan of $66 million[1] and, when operating at full capacity, an annual budget over $5 million, making this one of Milwaukee County's leading civic institutions. Recognize that the capitalization model is challenging and requires outstanding leadership.
20. Prepare for the 2020-2021 ramp up year, which will include further work on many essential elements of this plan: creating the legal structure for the Domes and Park with its partners and the utilization of tax credits; building upon the conceptualization of the building and park spaces with a complete architectural and engineering plan; creating the HTC/NMTC/OZ structure; seeking bridge grants; winning lead donor support; creating detailed enterprise and operating plans for the Park and partners; setting up a public art program and process for the Domes and park that will integrate art effectively into the Domes and park.

[1] Recognize that there may be changes to this pending completion of current glazing and concrete studies, and that a full Park master plan of additional facilities and gardens may require more years and additional, future capitalization beyond the ten-year plan proposed in this report.

# Background

Phase 1 and Phase II analysis for the future of Mitchell Park was conducted by ConsultEcon and HGA and completed in 2018. The Phase I and II team identified numerous requirements for success and developed a series of models for the potential future of the Domes.

Overall, the focus of both Phase I and Phase II was "the Domes," evaluating the Mitchell Park Horticultural Conservatory as its own destination entity as compared to evaluating its potential in the larger context of a re-envisioned Mitchell Park inclusive of the Domes. However, looking at the Domes alone, the report concluded that it "lacks the staff, programming, relevant governance structure, and versatile spaces needed for success in today's market. These conditions make the Domes unsustainable for operations and for future maintenance of the facility.[2]"

The report went on to offer six options and additional sub-options for the future of the Domes, ranging from doing nothing to tearing the Domes down; only addressing deferred maintenance; making some targeted investments in the Domes and in parking and signage; to re-envisioning the Domes as destination education, conservation, and recreation attraction - again offering the potential of razing the current Show Dome to accommodate a new building.

The recommendations contained in the report were in many ways a wake-up call for Milwaukee County and for those who have long supported and cared about the Domes and Mitchell Park. Historic preservation activists were rightly concerned about the concept of razing architecturally significant buildings in favor of something new. Civic leaders were concerned about what it would require of Milwaukee County to establish a destination with fresh relevance within the same timeframe as other Milwaukee institutions are addressing major facility projects. The report's many stated concerns about governance were very direct and of concern to Milwaukee County Parks, which has faced budget and related staffing cuts. To do any significant programming and new level of service, would require a strong public-private partnership and new governance capacity not currently in place.

The Phase 3 work profiled in this report was conducted by a new team led by ArtsMarket, Inc., a national cultural and heritage feasibility and planning firm in Bozeman, MT whose principals, Louise K Stevens and John F. Stevens had previously lived and worked in Milwaukee and brought an understanding of the market and Milwaukee's cultural nonprofits. ArtsMarket was joined in the analysis by Milwaukee architectural firm Engberg Anderson, by Milwaukee based Preserve LLC, and by Madison based landscape architecture firm. Saiki Design. The team also included assistance from Durkin Associates in testing capital campaign concepts and pro bono counsel to the consultants provided by Milwaukee Attorney Hal Karas, partner at Husch Blackwell.

[2] Mitchell Park Horticultural Conservatory Future Path and Feasibility Study, Phase 1, page I-2

The Phase III team was given the following direction by Milwaukee County Parks and by the Domes Task Force:

*"This RFP is intended to help the Task Force understand and evaluate the feasibility and long-term viability of the options that it has identified for the future direction of the Mitchell Park Conservatory Domes. The intention is to examine potential partnerships, consider governance changes, develop funding and revenue options, complete programming and conceptual space planning and cost estimating, and provide a recommended business plan for sustained operation of the Domes."*

The team was tasked with the following specifics:

- *"Evaluate the current Conservatory (Pros/cons) and the preliminary vision (or visions) for the future that you are proposing. Provide a description of building and facility problems you anticipate in this project and how you propose to overcome them.*

- *"Provide recommendations on partnership opportunities and related governance necessary to develop and support the two options envisioned by the Task Force, recognizing that Milwaukee County may be unable with current resources and operating structure to develop and manage an expanded facility.*

- *"Provide analysis of likely funding sources for developing and operating each of the two alternatives identified by the Task Force, incorporating any possible impacts from partnerships and to existing partnerships.*

- *"Develop preliminary programming and budgetary cost estimates based on space needs for the Task Force selected alternatives, including the possible impact of partnerships on programming and facility requirements.*

- *"Recommend a preferred feasible solution to the Task Force with reasoning behind the recommendation. Provide a summary report for use by the Task Force, as well as the County Board, that provides overall and integrated understanding of the two options for the Mitchell Park Domes identified by the Task Force."*

Due to County timing requirements, the team for Phase 3 was given from early May until mid-July to conduct the analysis and develop a feasible solution.

The consultants were directed to provide financial and feasibility analysis around the two options the Task Force had selected out of those provided by the Phase 1 and 2 team. These were:

Targeted Investment

- Address deferred maintenance.
- Add key additions and new construction to increase the functionality of the Domes complex, including classrooms, offices, meeting space, storage, ADA upgrades.
- Improve/expand guest entrance, ticketing sequence and group arrival areas.
- Add improved retail space and food service with small seating area.
- Improve connections to Greenhouses and Annex. Enhance annex as a venue for facility rentals, add catering kitchen and air conditioning.
- Increase parking capacity and site wayfinding, improved connections to park and trail.
- Operating enhancements: staff, operations, programs, education, and partnership.
- Increased role for Friends of the Dome.

EcoDome Destination

- Address deferred maintenance.
- Support targeted investments (per above)
- Add new immersive Ecological Habitat Zone and other enhancements
- Add exterior gardens and activity space.

Within the RFP, the consultants were specifically asked to provide direction in securing Historic Tax Credits. At no point in the Phase 1 pro forma work had this type of capital funding mechanism been put forward by its consulting team. And while the Domes and Mitchell Park were both consistently referenced as "historic," there was no discussion of "historic significance" in the context of architectural landmark status consistent with placing the buildings on the National Register for Historic Places, thus making them eligible for HTC investment.

The addition of this element in the RFP opened the door for the consultant team to consider National Register applicability and the potential of securing HTC. With this potential comes various architectural restrictions making some of the "targeted investment" recommendations from Phase 1 and 2 challenging. However, it served as an important starting premise for the consultants, allowing them to evaluate the Domes as significant historic treasures and providing context for this within Mitchell Park itself.[3]

[3] The Mitchell Park Horticultural Conservatory was placed on the National Historic Trust's list of Most Endangered Buildings in 2016.

# The Plan, Part 1

## The Reinvention: The Next Fifty Years

In this model, Mitchell Park becomes a new type of park – and a model for Milwaukee County Parks - programmed through partnerships with experienced Milwaukee organizations that know how to provide expertise in areas ranging from children's summer camps to green teens programs year-round, to master gardener classes, culinary arts degree programs and horticultural degree programs. These relationships are designed to be a win-win, eliminate replication of what exists, taking every organization's work to the next level. Architecturally, this work will be done in a sustainable, 50-year plan for the rehabilitation of the Domes, and in a collection of other spaces Park-wide that invite and involve community, from gardens to learning spaces, urban health clinic and training center for new horticulturalists. The plan is intended to be implemented in phases over a ten-year period starting in 2020.

When completed, Mitchell Park and its Domes will once again be the national breakthrough leader as was the case when the Domes were built more than 50 years ago. This time they will provide a best practice example of a sustainable, urban botanical park - a place that demonstrates excellence and stewardship while showcasing history through its Domes.

### The Success Nexus


Remaking Mitchell Park and the Domes will be challenging, but viable. Milwaukee County has identified three elements for success in major ventures. This plan addresses all three of its criteria.

## I. A New Urban Botanical Park and Conservatory: Re-visioning Mitchell Park and the Domes for the Next Fifty Years

There is a new kind of urban botanical park growing in America and around the world. This park usually has a glass conservatory and a collection of plants. Here, visitors enjoy magnificent flowers, beautiful garden beds, and the tranquility of an urban green space.

Some might think this new park has changed little from the urban botanical parks of 100 years ago or more.

But the very best of today's urban botanical parks have evolved. Today they are far more than aesthetically beautiful. *"Public gardens are working to define the relevance of botanical gardens for the 21st Century, from what botanical gardens were 100-200 years ago – focused solely on botanists and horticulturalists – to what they have the potential to become. Today, the application of gardens' expertise in sustainable community development helps build valuable human and social capital in the form of leadership skills and creates opportunities.[i] "*

This new kind of urban botanical garden is deeply relevant to our world today, a world in which few young children know where the tomato in their salad comes from and a world where back-yard gardeners know little about sustainable plants that work in today's changing climate.

Image, Brooklyn Botanical Park

Ours is a world where entire tree and plant species are vanishing from geographic areas they inhabited for hundreds of years, but few of us know how to slow that loss and preserve what we have.

Ours is a world where the "doing" of horticulture – tending a garden, growing a flower, greening a neighborhood – is an antidote to a host of urban-related diseases including diabetes, cardio vascular disease and numerous types of cancer.

Yet too few of us know how to "do." Plant based diets are recommended by doctors everywhere, but for many households in today's cities, access to fresh produce is both rare and priced beyond what is affordable. The connection between healthy lifestyle and gardens is for many an unknown.

Image, Botanical Garden of the Ozarks

There is a solution.

The best of today's gardens and horticultural centers "*offer new ways of intervening in city fabric at the local level using stewardship, grassroots activity, and neighborhood identity as generators of community-based change.*[ii]"

This is the vision for Mitchell Park and its Domes.

## II. Begin with the End in Mind

As the consultants reviewed the two models from Phase 1 and 2 that were put forward for this team's planning work and study, questions immediately emerged:

- What is the vision?
- To what purpose?
- What needs will be addressed and what opportunities will be made possible for the residents of Milwaukee County and other visitors?
- What is necessary to ensure sustainable success?
- What have other communities with historic horticultural conservatories learned and implemented to guide Milwaukee County in rethinking what an urban horticultural conservatory and surround park space can mean in today's world?
- The Phase 1 report suggested that any re-do of the Domes would be assumed to last for only 25+ years. Why? Why not think longer term? The Domes are just over 50 years old. Why not re-envision them for the next 50 years?

The consultants evaluated the success factors and challenges evident in over a dozen major horticultural conservatories located in parks in the US and elsewhere in the world. Among those analyzed:

1. Phipps Conservatory and Botanical Gardens, Pittsburgh, PA
2. Franklin Park Conservatory and Botanical Gardens, Columbus, OH
3. New York Botanical Garden, Bronx, NY
4. Missouri Botanical Gardens, St Louis, MO
5. Crystal Bridge Conservatory and Myriad Botanical Gardens, Oklahoma City, OK
6. Garfield Park Conservatory, Chicago, IL
7. Chicago Botanical Gardens and Greenhouses, Glencoe, IL
8. Lewis Ginter Conservatory and Botanical Gardens, Richmond, VA
9. Lucile Halsell Conservatory and San Antonio Botanical Gardens, San Antonio, TX
10. Denver Botanic Gardens, Denver, CO
11. Albuquerque Bio-Park Botanical Conservatory, Albuquerque, NM

"On March 22, 2017, the Mitchell Park Domes were named a National Treasure by the National Trust for Historic Preservation. The Cultural Landscape Foundation, in the same press release as the National Treasure announcement, compared the Domes to the St. Louis Arch as a similarly noteworthy mid-century structure." - Preserve LLC

12. Cleveland Botanical Gardens and Conservatory, Cleveland, OH

Each of these important horticultural conservatories operates within the context of its surrounding park. Each feature wide-ranging programs and services. Most are deeply engaged in community service and partnerships. For all, the mission is no longer just about the plants inside the conservatories, but the interaction between people and plants. Most are intensely involved in horticultural, botanical, and water stewardship. Almost all offer diverse exhibitions that address the diverse cultures of the plants and gardens – from Africa to Asia, alpine valleys and mountains to tropical rainforests of the Caribbean.

From this analysis, the consultants began to develop a vision for what a contemporary and urban botanical and horticultural conservatory and park could mean in Milwaukee.

Rutgers Gardens summer plant sale, New Brunswick, NJ

## III. The Programming Vision for an Urban Botanical Park and Conservatory in Milwaukee

The best horticultural and botanical parks today provide space for:

1) Learning
2) For becoming healthy
3) For being active stewards

These are elements of the plan for Mitchell Park and its Domes.

In urban areas, where the concept of stewardship can seem remote, botanical and horticultural centers that engage residents as active stewards of the world around us can open new worlds to explore.


Teen apprenticeship program, Chicago Botanical Gardens

That is why today's best urban botanical centers have life-long learning programs that typically include everything from children's garden areas all the way to degree and certificate programs in sustainable horticulture.

In the process, they create engaged communities, and they provide new economic stimulus and job creation. "These investments create a range of economic and social opportunities for underserved communities, including living-wage jobs, opportunities for skill building and advancement, and chances to increase involvement in municipal and regional planning process."[iii]

## Elements of Success

From the gardens of Brooklyn Botanical Park to those of Garfield Park in Chicago and San Antonio, Houston and Cleveland, Columbus, OH and Richmond, VA, today's urban botanical gardens and conservatories have been rethought.

- There are children's learning gardens.
- Outdoor and indoor culinary programs and demonstration kitchens.
- There are health clinics where physicians prescribe fresh produce grown right there and provided to patients throughout the clinic service area.

There are off-site programs, as well, setting up entire neighborhoods to become green zones through programs like The Greenest Block in Brooklyn and Missouri's Help for the Home Gardener program.

Teen apprenticeship programs lead directly into associate degree programs in everything from horticulture to horticultural therapy. Many offer culinary programs and certifications. Still others offer water stewardship learning and programs.

These centers model what they preach and teach.

They are among the greenest practice and demonstration sites in America. The Center for Sustainable Landscapes, a new learning site within Pittsburgh's Phipps Conservatory and Park, prides itself as one of the "greenest buildings in the world." The newly renovated Bartholdi Park at the US Botanical Gardens in Washington D.C. has ten rain gardens that capture 100% of rainfall on the site, allowing it to soak into the ground and diverting runoff from D.C.'s combined sewer system.

## Milwaukee has the raw materials to create this new urban horticultural park.

When Milwaukee's Domes at Mitchell Park were first built, they represented the finest and most forward-thinking of botanical conservatory development in the United States and around the world. "*With only one Dome completed, by August 1965, visitation reached 872,692 for the first operating year.*[iv]" Visitors crossed the continent and still others flew into Milwaukee from Europe, Asia, and the Middle-East to see the amazing set of three glass domes and their respective gardens.

But over the years, the novelty of the Domes themselves wore off, the uniqueness of the collection dissipated, and the relevance of the Domes to residents and visitors diminished. Today, the Domes have fallen behind their counterparts throughout the country.

Public use and value of the conservatory and of Mitchell Park has dropped year by year.

Once consistently named as among the greatest conservatories in America, the Domes are languishing as a collection of plants and as a destination for horticultural visitors; they are also physically crumbling.

As for the rest of Mitchell Park, it has little connectivity to the horticultural life inside the Domes. It too was once filled with gardens.

Its lagoon was clean and clear. Milwaukeeans strolled the park to learn about flowers, be a part of nature, and take home with them valuable ideas for their own gardens.

Milwaukee has the raw materials to recreate and reshape the Domes and Mitchell Park into greatness as a new urban horticultural park.

Through two years' public dialogue, Milwaukeeans have provided input through hundreds of surveys and scores of round tables. They have opened their hearts with story after story about the importance of the Domes in their lives, their family histories, and their memories. There is loyalty and passion.

Through scores of discussions, willing partners have already come to the table, bringing imagination and enthusiasm. Milwaukee needs this new state of the art urban botanical park and all that it offers.

And Milwaukee has the talent, the proven capacity by highly regarded partners, and the demonstrated ability to employ new strategies to solve old problems. Milwaukee can do this.

## Just what will it be?

We've all heard of technology campuses, and incubator parks. We have heard of environmental centers and research zones, learning centers and community hubs. In many ways, these are models for the new Mitchell Park and its Domes.

Just as with tech campuses and research zones, this plan draws upon Milwaukee's outstanding tradition of collaboration and partnership, with the Park and Domes serving as home to a collaborative group that brings their best to the Park.

**The plan does not reinvent what is already being done – with excellence – by other Milwaukee area groups. instead, it brings them together in Mitchell park and its Domes, to operate horticultural, botanical, and related practices that will be demonstrated and utilized through programs and services in the Domes and at the Park, in Partnership with Milwaukee County Parks.**

This approach is what scholars have come to call the "new model for sustainability" for urban botanical parks.

## IV. Why a Sustainable Park and not just "The Domes"?

In the Phase 1 and 2 reports previously presented to the Domes Task Force, focus was on the reinterpretation and use of the Domes themselves with limited discussion of expanded gardens in the Park, largely around a children's garden idea. In those reports, some discussion was given to the Domes historic architectural importance, yet one of the options presented to the Task Force in Phases 1 and 2 was to tear down the Domes.

Early in Phase 3 (this planning project), and after review of the Phase 1 and 2 reports, the consulting team spent time examining the footprint of the Domes buildings in the context of Mitchell Park and the surrounding community. The current team also included analysis by a historic preservationist – something that had not been previously done – of whether the Domes should be considered a historic building to the standards of the Department of Interior and therefore be eligible for Historic Tax Credits.

The conclusion:

1. *The Domes fit the profile of a historically-significant building worthy of preservation and use of Historic Tax Credits. This represents a valuable source of capital necessary for the rehabilitation of the comes.*
2. *The Domes buildings lack the minimal types of spaces – offices, sizable retail, food service - required by successful botanical conservatories, space that makes possible the necessary revenue mix to sustain operations. Thus, to realize the Task-Force selected model of "Targeted Investment," additional space must be included.*
3. *In response, there is underused, unused, and adaptable space in the Domes complex and the Park. And, if Milwaukee County thinks of the Park and Domes as one – the way that other successful botanical conservatories operate within their parks – there is both opportunity and program demand to add one more structure to the site. Adding space means adding programs and revenue streams which will make possible the "sustainability" of the park as an urban horticultural center.*
4. *There are important additional learning and service opportunities related to the Domes mission and the Park location that cannot be accommodated within the existing footprint. These opportunities bring with them new financial resources that can assist the capitalization and operation financial plans.*

5. *At the same time and in concert with the Park as an urban horticultural destination, Mitchell Park is and should grow as a neighborhood and community resource. In addition to maintaining the Green Bay Packers Football field, the Park should once again include a tennis court and add a soccer field as community resources.*

## V. Guiding Principles

This plan proposes four Guiding Principles to drive programming and through the programming, the business plan:

| | |
|---|---|
| **Sustainability.** | Fiscal sustainability, sustaining plant ecosystems, sustaining historic and iconic architecture and parkland, sustaining excellence in programming, service, education, governance, and operations. |
| **Meaning.** | The meaning of horticultural gardens as an urban oasis. The meaning of history and place, and Milwaukee County's long investment in horticulture and Wisconsin's central role in the entire conservation and plant stewardship movement throughout the world. The meaning of involved plant stewardship. The cultural meaning of plant ecosystems. |
| **Engagement.** | A place for everyone, all ages, all seasons, all interests, all abilities. Healing engagement, youth engagement, community engagement. Engaging the many cultures of Milwaukee. Engaging all who come around the value of stewarding natural resources. |
| **Partnership.** | Partners in community, in education, health and wellbeing. Partnership as a way of working efficiently and effectively in the 21st century public sphere. Public and private partnership to ensure the Park for its next 50 years. |

## VI. Key Elements

- ✓ This plan calls for the historic rehabilitation* of the current Domes as architecturally important, iconic structures.

Some of the many reasons for rehabilitation of glass, concrete, and superstructure

"In the face of tremendous pressure and backed by a progressive and forward-thinking local government body, Grieb attempted to, as one publication put it, 'adapt principles of design never tried before.'

The American Concrete Institute's journal called it a 'radical departure from the standard gable type roof design for greenhouses or horticultural exposition buildings.' The May 1961 edition of Milwaukee Engineering called the domes 'unique in the world,' and 'the world's first space frame in the shape of a complex conoid.' At the Mitchell Park Domes, Grieb pioneered a new structural system.

Ultimately, it was the first of its kind. at the time Grieb began developing his conoidal structure the geodesic dome had not yet been used for a glass-roofed conservatory structure (the first was 1960). In terms of large span conservatory design, the two structural forms are contemporaries rather than one deriving from the other. Grieb was challenged with solving issues of glazing, construction, fabrication, and moisture regulation of a glass dome that was still in the process of being flushed out by
Fuller, despite Fuller having developed the structural system almost a decade prior.

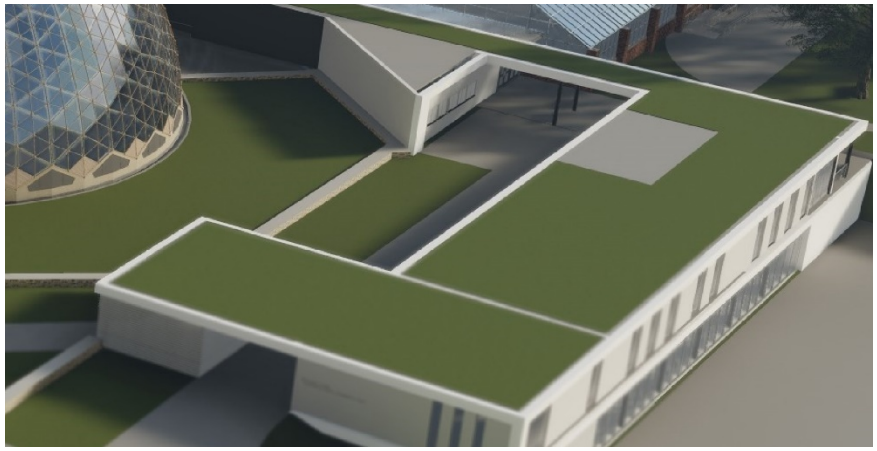
The result of Grieb's design and ingenuity is an iconic building, highly evocative of its time while continuing to awe visitors in the present." – Preserve LLC

* The Secretary of the Interior's "Standards for Rehabilitation" Code 36 CFR 67, are regulatory for a building to be eligible for Historic Tax Credits. Buildings that are found to be historically important because of their architecture are approved for this by the US Department of the Interior/National Park Service . https://www.nps.gov/tps/standards/rehabilitation.htm

- ✓ The plan calls for maintaining the valued plant collection housed in the Domes and animating the programming of the Domes to make these relevant to today's Milwaukee community, through changing, diverse programming and major touring exhibitions that will draw thousands.

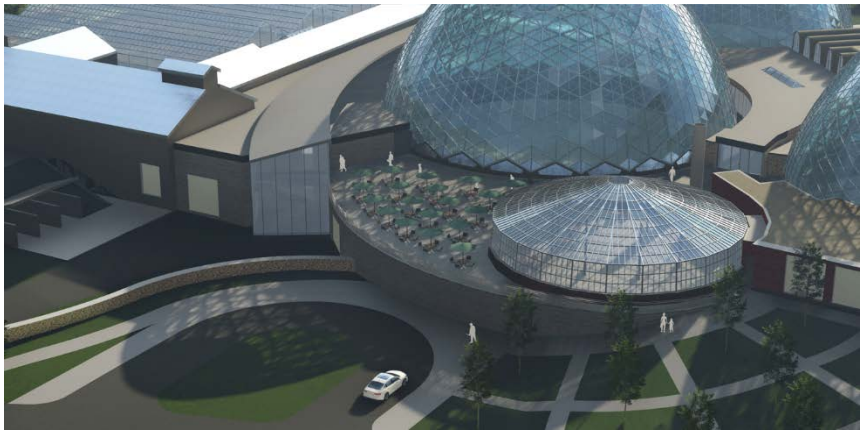

Frieda Kahlo: Art, Garden and Life exhibit developed by New York Botanical Garden, a changing exhibit of the type envisioned.

- ✓ This plan recommends a new Welcome and Learning Center that will significantly add to the park experience without taking away views of the current historic façade. This new building will include additional exhibit and orientation space, classrooms, laboratories for medical and applied research, a community health and wellness area, and both food service and retail areas.



- ✓ The plan recommends adaptive reuse of non-historic elements of the complex of greenhouses/work areas attached to the rear of the Domes, with these spaces offering significant opportunity for new revenue streams.

- ✓ It recommends a full-service restaurant in the “hidden” Dome, with its own entrance and farm-to-table gardens.



- ✓ It calls for transformation of the boathouse at the lagoon into a state-of-the-art event/wedding/catering center, with an in-door/outdoor wedding ceremony area/garden.

✓ The plan includes reinstallation of gardens throughout the Park, re-envisioned with sustainable gardens, including a Children's and Family Garden and an area devoted to Urban Ag and Health.

✓ The plan maintains the Green Bay Packers practice field, operated by Journey House, and enhances the tots play area as an important neighborhood asset. It adds back the past tennis courts, creates a new basketball area and soccer fields. It adds pathways for better walking and bicycling in the park including better connectivity to Three Bridges Park and the Hank Aaron Trail. There will be new well-lit public access throughout the Park.

- ✓ It calls for a new water recirculation plan that ensures a sparkling clean lagoon, re-envisions a water garden as was once at the front of the Domes, and connects the two to a clean water stewardship system including underground cisterns, water reuse for the gardens inside the Domes, and to provide all water for the Park while mitigating storm water run-off.

Water recirculation, new stream feature.

## VII. The Domes

The plan envisions the three Domes preserved as historic treasures fully recognizing their historic importance as midcentury conservatories.

But just because the Domes are historic doesn't mean they will be static.

Instead, each of the Domes will be programmed with rotating exhibits – similar to the way that Milwaukee's art museum and Milwaukee Public Museum bring in touring and rotating exhibits.

These may be up for six months or even a year.

These rotating exhibits will capture and reflect the Dome's and Park's mission of serving as the ***intersection of plants, people and culture***. Plants and places define who we are, and through them the Domes will bring their worlds to Milwaukee residents and visitors.

***The Deserts of the World Dome.*** From the Sahara of Africa to the Sonoran of Arizona, from the Gobi of China, the Kalahari of South Africa to the Big Sandy of Australia, deserts tell the age-old cultural stories of people and plants in often unforgiving climates.

Every desert has its own great stories and great exhibition opportunities. The Deserts of the World Dome will feature changing exhibits that share these cultures of place and plants.

Each will bring connections to K-12 curriculum and to lifelong learning.

The Deserts of the World Dome will be transformed into a bit of Mexico for a while, as home to the Domes' already well known Dies de los Muertos celebration.

In the evenings, the Deserts of the World Dome may be transformed into a taqueria with live music and dancing. Or, in another month, it may become an oasis from the Arabian Peninsula.

***The Tropics of the World Dome.*** Tropical and sub-tropical climates and their plants span the globe from Costa Rica to Madagascar, from the Caribbean to the Amazon, from Brazil to Bora Bora, from Cuba to the Congo.

The Tropics of the World Dome will tell of these places and the inter-relationship between climates, plants, people, and culture, each bringing K-12 curriculum and lifelong learning as well as rich learning opportunities on plant-focused cultures.

The Dome will host popular exhibits and create its own: The Flowers of Costa Rica, or the Rainforests of Cuba, complete with Cuban food and live music.

Rainforests of Cuba Exhibit, Phipps Conservatory, Pittsburgh

Each return visit will be a visit to another place, perhaps a tropical cultural immersion enjoyed on a cold winter afternoon or over a relaxing dinner of Caribbean food.

*Our World Dome.* Milwaukee's world is that of the temperate zones of the world, with plant species representative of all temperate zones. Just as with tropics of the world and deserts of the world, there are many culturally diverse stories to be interpreted through the flowers and plants indigenous to our ecology.

Equally important, there is inspiring work to be done that can be accomplished right here at the Park's "Our World" Dome to help sustain and green the urban environment.

This dome – formerly the "Show" Dome - will still feature favorite changing exhibits such as an annual holiday show. But it will also incorporate new changing and sustained exhibits as well as applied research on our urban ecology.

This Dome will become an important part of the new **Wisconsin Center for Urban Ecology** that will grow within Mitchell Park, where there will be opportunities to learn about backyard gardening, sustainable plants, good water stewardship, and how to protect endangered Wisconsin flowers and plants that if unprotected could vanish from our urban landscape within the next fifty years.

This will be the home of one of the new partnerships for the Park, the **Milwaukee Master Gardeners Program** operated through the partnership of the University of Wisconsin Extension.

## VIII. The Park

The Mitchell Park experience historically incorporated outdoor gardens. Re-envisioned, these outdoor garden beds are an important part of connecting the world of flowers to the casual visitor and the surrounding neighborhood. The master plan replaces these gardens and adds to them.

Rather than annuals requiring extensive water and fertilizers, the new beds will be planted with sustainable gardens that can serve as a stewardship model for every backyard gardener.

Sustainable garden example, Missouri Botanical Gardens

Historically, the Mitchell Park experience also incorporated water, both as a water garden, and through the active use of a sizable lagoon. These water features will be restored and reinterpreted as a part of a Park wide sustainable water stewardship program.

A sparkling clean lagoon will be linked to the water garden and to the water collection system under the Domes and greenhouses as a demonstration of best practices in water stewardship.

**The new Children's and Family Garden** will be a Pre-school to Grade 6 addition to Mitchell Park, including a tree canopy house, plenty of areas for digging and planting, and an area for family and student learning. There will be indoor-outdoor food service within the enclosed garden, so that families can come and spend hours engaged in flower fun and learning.

Children's Garden, Brooklyn Botanical Park

A new **Bride's Wedding Garden** will add to the wedding settings inside the Domes with a spectacular new outdoor wedding and reception site that will also be suitable for parties and other special events.

The existing small **amphitheater** will be improved, with casual grass seating for up to 1,500, and a small stage that will accommodate Milwaukee ensembles offering music, dance, and theatre. The amphitheater will also serve as a beautiful new location for weddings and private events.

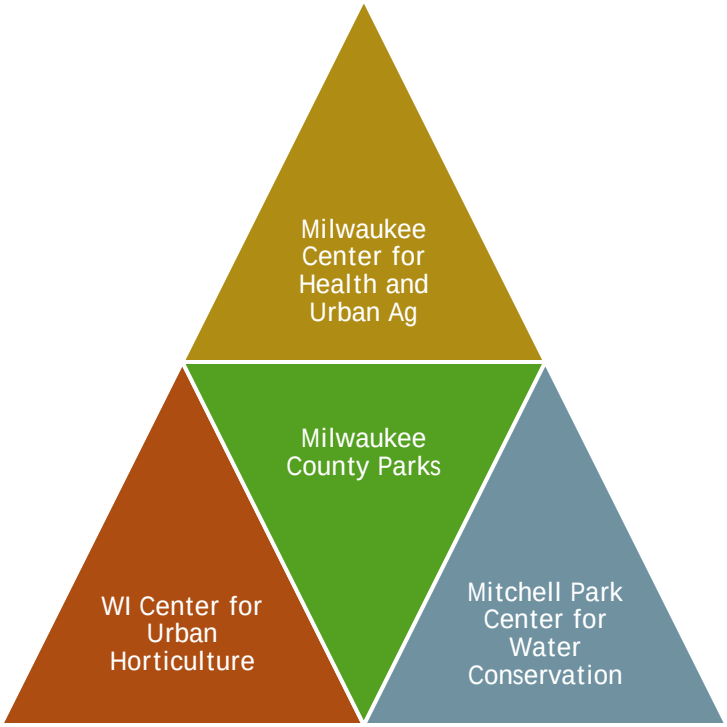
Wedding Garden, Cleveland Botanical Park

# IX. The Mitchell Park Learning, Wellness and Horticultural Campus

The master plan includes important new park areas developed with partners, each designed for family-friendly learning and hands-on engagement as well as for research and advanced study, while leaving plenty of green and garden space open for more passive enjoyment of nature.

An additional 20,000 square feet of work space will be added in existing and new structures to house, the **Mitchell Park Learning, Wellness, and Horticultural Campus**. Within these and the surrounding campus gardens there will be discrete operating "centers" for primary and supporting partners. The planning process included exploratory dialogue around the Partnership concept.

Applied urban horticultural research greenhouse, North Carolina State University




Prospective Partners identified through the process include: The Medical College of Wisconsin Center for Healthy Communities and Research (the park's center for Health and Urban Ag) ; UW Extension, MATC, and Teens Grow Greens (WI Center for Urban Horticulture) and MMSD (Center for Water Conservation.) Discussion and joint planning with these and others should continue immediately after this plan is adopted. Other partners may also join in: the planning process included a round table and subsequent dialogue with other conservation-oriented non-profits that are potentially interested.

Three different "Centers" would operate within the park using indoor and outdoor utdoor garden space, greenhouses, and office/classroom space within the proposed Welcome Center. The model estimates that each of the Centers will function as homes to both "lead" and "supporting" partners.

The conceptual plan includes eight discrete classrooms/learning labs for K-12 and adult learning, a culinary arts/healthy food demonstration kitchen; a seminar room that can also be used for health/wellness programs, research space, and a wellness clinic area as well as offices and amenities.

There will be new Indoor and outdoor gardens highlighting important plant species that could face extinction in the next 50 years as well as a range of sustainable gardens in "*Milwaukee's Backyard*" – a series of example gardens focused on sustainability and stewardship best practices. It will also lead to the *"Urban Ag"* gardens that will support both the health and horticultural aspects of the Campus.

These gardens and buildings will also be home to some of the Park's new programs ranging from summer youth and teen day camps and after school garden apprentice programs to a new signature **"Green *Streets of Milwaukee*"** community garden program, where neighborhoods work together to create beautiful gardens they can enjoy together, beautifying their streetscape and coming together as gardeners.

The goal of the learning campus and its centers is to extend the Dome's new focus on how plants, our climate, people and culture intersect and how we can become better environmental stewards in urban Milwaukee.

Each of these will help visitors take home new ideas to incorporate into their homes, gardens, diet and lifestyle. There will be indoor and outdoor demonstration kitchens for learning new plant-based recipes and testing local garden to table fare.

**The Center for Health and Urban Agriculture** will offer plant-and-grow gardens that help demonstrate the health benefits of gardening and will include a neighborhood wellness center. It will also contain post-doctoral research lab addressing multiple areas of research including how healthy diet and exercise can prevent urban diseases.

This Center will be open to the public as a place to learn and even a place to pick up fresh produce. The Center gardens will include floral and vegetable beds and fruit trees for community harvesting.

It will also be a place of learning for teens and adults who can go on to become certified and gain degrees that lead to quality jobs, from horticultural certification health care to culinary arts. Teens Grow Greens is one of the Milwaukee youth training programs that has committed to Partnership education and training in the Park.

Teens Grow Greens

The apprenticeship programs will give teens a chance to learn horticulture as well as learn marketing and sales as they operate

their own garden floral and vegetable market.

The **Wisconsin Center for Urban Ecology,** offering programs in the current Show Dome, will also have a free and accessible area in the Mitchell Park Gardens area and an additional teaching and applied research space.

Both Centers will also use the existing greenhouse complex to further year-round, hands-on learning and research.

The **Mitchell Park Center for Water Stewardship** will occupy and expand upon the space currently used by a small boat storage building alongside the lagoon.

Through an envisioned potential partnership with the Milwaukee Metropolitan Sewerage District (MMSD), the Park lagoon will be cleaned, and a water recirculation plan will be implemented that will eventually lead through the park to Menomonee River.

In doing this, Mitchell Park will be the first park anywhere in the world to achieve the Platinum level of the Alliance for Water Stewardship Certification and will serve as a demonstration site for Milwaukee's Water Council. **The Mitchell Park Water Stewardship Center** will be a learning and demonstration site for wise water stewardship in home gardening.

Urban Ag Gardens and Orchards with potential additional education support structures.

# X. Restaurant, Catering, Culinary Training

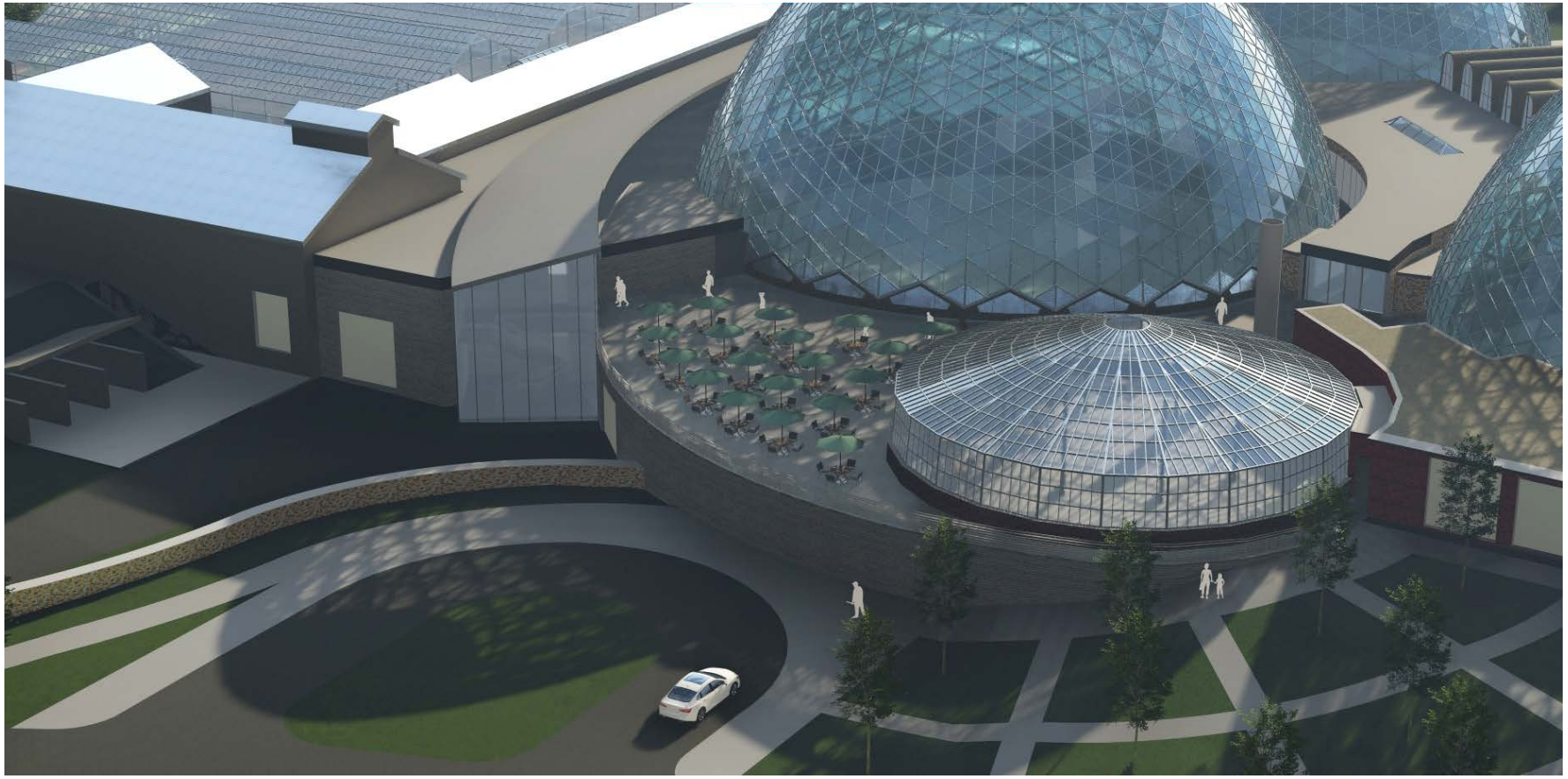
There is a secret dome at the Domes. Constructed at the same time as the three highly visible Domes, a smaller forth Dome sits behind the three and looks out over the Menomonee River and the downtown Milwaukee skyline.

In the type of partnership demonstrated as successful in other Milwaukee County Parks, this historic park building will be restored following Department of the Interior guidelines and will be repurposed into a wonderfully friendly garden to table restaurant with fare that will reflect the changing exhibits and the constant favorites of the Milwaukee ecology.

The Dome Restaurant will become the home restaurant for the Park's *culinary training program* that may be operated by a local training provider such as MATC in partnership with the restaurant itself. Apprentice chefs will work in the kitchen and catering operations, perfecting their farm to table cuisine.

It will become the center of the Park's catering services and its operation of outdoor dining spaces and food trucks, and the hub of its expanded weddings and special events program.

In addition, the current boat house will be transformed into the new Boathouse Pavilion, a beautifully remodeled, new wedding and events venue overlooking what will become a clear and beautifully landscaped lagoon. A new Garden Wedding Plaza area will be nearby connecting the garden to the newly redone 7,500 square foot Pavilion. It will include a dining/event space, bride and groom dressing areas, catering kitchen, and an outdoor veranda.



Conceptual image of outdoor dining veranda, restaurant drop off and farm-to-table garden area.

# XI. Domes Support Subsidiaries: New Quality Jobs, Workforce Development, Community Support

To support this vision, Mitchell Park & Domes will become a quality jobs provider and workforce development trainer.

The financial strategy necessary to capitalize and renew Mitchell Park & Domes requires a mix of Opportunity Zone investment with New Market Tax Credits and Historic Tax Credits. Both OZ Investment and NMTC support workforce development and new quality jobs. The fit between these financing methods, the Clarke Square location, and the scores of opportunities listed here for apprenticeship and workforce development programs mesh perfectly. So does the wide range of quality jobs from horticultural to health, culinary to ag, construction and education that will be made possible within the Park.

Developing changing exhibits in large horticultural Domes requires more than plants. It requires the creation and construction of what can best be described as theatrical sets representing a streetscape for a Rainforest Brazil Exhibit or a desert diner along Route 66 and leads to quality jobs and apprenticeship training opportunities in carpentry and other skilled trades. Serving up farm to table cuisine includes culinary arts training for new chef positions to serve the multiple food venues throughout the Park. Providing urban ag related health services may include horticultural therapy training and apprenticeships as well as agricultural training and research work. A significantly expanded retail complex with Park-grown vegetables, fruit, and plants as well as gift items will offer retail operations training and new jobs. On-site education programs will bring scores of new jobs. A consistent training focus across all subject areas will be social entrepreneurship and

Mitchell Park and its Domes will establish **Domes Enterprise hub,** headquartered in one of the working buildings behind the Domes. The plan envisions each of these jobs and revenue areas becoming enterprise supports for the Park, employing a revenue-sharing approach as is currently used elsewhere in Milwaukee County Parks. Combined, these will provide training, jobs, and the net revenue to pay down the interest and principal of the NMTC and PACE investment and will make possible the Historic Tax Credits and OZ Investment. Through this, the Plan ensures that Milwaukee County Parks' required on-site number of County employees will not need to grow, but that overall employment will grow through **Domes Enterprises** and **Mitchell Park Partnerships**.

Domes Enterprise Hub

## XII. Serving the Clarke Square Neighborhood and Milwaukee County

As it has always been, Clarke Square is a neighborhood of immigrants, and Mitchell Park – as one of Milwaukee's original five parks – has always been the neighborhood park for its residents.

- Clarke Square is the 8th most densely populated neighborhood in Milwaukee and its residents are predominantly of Hispanic and Asian ancestry.
- Twenty-seven percent of its residents were born outside of the USA, compared to 9.8% in Milwaukee.
- Forty-two percent of the residents have no high school diploma; 48 % have graduated high school and 10% have attained a post-secondary degree.
- The average household size in Clarke Square is 6.3 compared to 2.5 in Milwaukee.
- Forty-one percent of the households are below poverty level as compared to 27% in Milwaukee.

Through expanded recreation and improved access to all areas of the park - including expanded recreation areas for soccer, basketball, and, after a long absence, tennis and an increased walking trail system – this plan aspires to serve the Clarke Square neighborhood in a myriad of ways.

Through education, jobs and workforce development programs, health and food, the plan speaks to priorities of Clarke Square households. The produce and fruit grown in the Park and greenhouses will be made available, year-round, to residents who live within the area, which is one of Milwaukee's "food deserts." The education programs will range from one-week intensive training for quality jobs – for example, in aquaponics – all the way to certification programs in culinary arts and horticultural therapy. The open spaces will bring back community celebrations and offer increased family picnic areas.

The aspiration of this is for Mitchell Park and the Domes to model what an urban botanical park should be for its neighborhood and its community, a place to spend time together, to regrow the connective tissue that brings us together, what the Kresge Foundation refers to as "the civic commons."

Dallas Botanical Gardens

Mitchell Park Proposed Amphitheater/Stage

Concept image, Children's Garden Area

"As communities have segmented by income, technology has advanced and priorities have shifted, support for civic assets has declined. Due to underinvestment and apathy, our civic assets are no longer providing the connective tissue that binds us together and anchors neighborhoods. The result is more than overgrown ballfields: research shows that Americans spend less time together in social settings, trust each other less and interact less with others whose experiences are different. More than places to gather and recreate, our civic assets are key to nurturing engagement, equity, sustainability, and economic resiliency." – Kresge Foundation, Reimagining the Civic Commons

## XIII. Multi-Year Jobs Creation, Community Engagement

This plan estimates that at full operations (2026-27), Mitchell Park and its Domes will make possible more than 300 new, quality jobs on site and in the surrounding neighborhood. This is direct employment. Indirect employment and induced employment – i.e. off=site jobs made possible because of the operations of the Park, programs, and these jobs - are in addition to this. This plan estimates that the combined impact of this direct employment along with the indirect and induced employment is 596 FTE, with a total direct, indirect, and induced economic impact of just under $16 million a year at full operations.

- 90 urban ag, horticulture, conservation, and grounds jobs
- 40 education and workforce development jobs
- 90 culinary and food service jobs
- 20 healthcare and wellness jobs
- 28 visitor service and retail jobs
- 20 support team jobs
- 8 research jobs
- 8 management, marketing and development jobs

# The Plan Part 2:

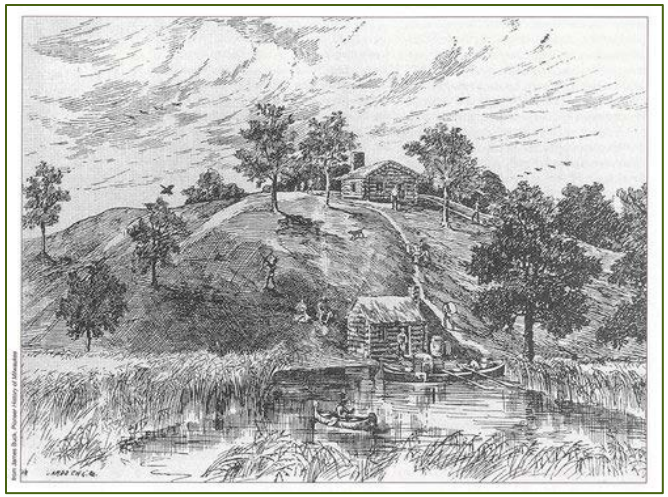
## Re-Capitalizing the Domes and Mitchell Park

This study included cost estimates for elements of the capital redevelopment budget for the Domes and Mitchell Park.

- ✓ The rehabilitation of the three Domes buildings; and the rehabilitation of the 4th, smaller "transition Dome" into the Dome Restaurant.
- ✓ The upgrading of the greenhouses and work buildings behind the Domes building; the upgrading of the existing boathouse into a quality events venue; the upgrading of the existing outdoor stage into a more functional event amphitheater.
- ✓ The addition of a new Welcome Center building with classrooms, visitor orientation, retail and food service.
- ✓ Gardens and water features
- ✓ Renewal of the historical marker noting the importance of the site of the first trading post in what would eventually become Milwaukee.
- ✓ The recommended soccer field, tennis courts and moved basketball hoops area
- ✓ Roadways, pathways, lighting, circulation

Not included

- ✓ Pond restoration and water recirculation, water features
- ✓ Work yard area, any additional work buildings
- ✓ Additional buildings, Urban Ag area
- ✓ Enhanced connectivity to the Hank Aaron Trail
- ✓ Interior fixtures for the restaurant and pavilion



Vieau's Hill Trading Post

Conceptual Image: Restored Area: Historic Marker

The capital budget does not include endowment funds. It does, however, include ramp up funding for new programming and the launch of the partnership model. It includes debt service for the NMTC and PACE financing.

# I. What will it Cost to Build?

## Capital Expense Pro Forma

| Expense Item | Pro Forma Estimate Included in this Plan |
|---|---|
| Domes rehabilitation | $30,000,000 |
| Other buildings, additions, spaces | $14,800,000 |
| Landscape/gardens and installation | $10,600,000 |
| Professional fees | $ 6,300,000 |
| Temporary facilities and moving costs | $ 700,000 |
| Exhibits build out/indoors | $ 1,000,000 |
| FF&E | $ 600,000 |
| Soft costs | $ 1,000,000 |
| Ramp up Operations, Domes and Park | $ 1,000,000 |
| TOTAL | **$66,000,000*** |

| Other Buildings, Additions, Spaces | Cost/SF | Area(SF) | Building Cost | |
|---|---|---|---|---|
| New Welcome Center | $250.00 | 15,000 | $3,750,000 | |
| New Secondary Entrance | $250.00 | 6,400 | $1,600,000 | |
| Deck Addition | $200.00 | 6,500 | $1,300,000 | |
| Exhibit Staging Building Rehab | $200.00 | 9,000 | $1,800,000 | |
| Greenhouse Educational Rehab | $150.00 | 16,000 | $2,400,000 | |
| Annex Greenhouse Rehab | $200.00 | 12,000 | $2,400,000 | |
| Boathouse Pavilion Rehab | $175.00 | 8,800 | $1,540,000 | |
| | | **Total:** | $14,790,000 | |
| Amphitheater Stage | $200.00 | 1,360 | $272,000 | not in current budget |
| Restaurant Renovation | $200.00 | 12,000 | $2,400,000 | part of Domes cost |

Q. Why include other buildings, additions, spaces, gardens, and infrastructure? Why not just rehab the Domes? A. The combination of services and programs required by the capital financing mechanism, and the new revenue streams to pay down the financing, require the additional buildings and spaces. The capital campaign analysis for this study found no interest in paying for just "fixing up" the Domes. Donor interest focuses on the new programs, jobs, and overall economic impact of the Park as a whole. NMTC and OZ investment are only applicable to this new portfolio of programs and services.

* Does not include contingency

# II. Supporting the Vision: The Capital Model

As the old saying goes, necessity is the mother of invention.

The County's $400 million infrastructure backlog severely limits the level of public dollars that can be expended in redevelopment of the Domes and Mitchell Park. This plan was developed from that premise.

- The challenge: how to move forward given this as the starting point?
- The result: a strategy that utilizes different types of funds for different elements of the historic Domes structure and for the other buildings within the park.

The revitalized Michell Park and its Domes cannot rely on Milwaukee County taxpayers to be solely responsible for the capitalization and operation of this world class conservatory and the experiences and services it will provide to Milwaukeeans and visitors.

The capital model assumes a balance of equal investment through general obligation bond financing and private sector donations. It assumes $13.5 million from each for a total of $27 million. The balance of the $66 million budget will come from a mix of Historic Tax Credits, New Market Tax Credits, PACE and Opportunity Zone investment.

# III. Tax Credits and Opportunity Zone Investment

Tax Credits and Opportunity Zone investment can be a realistic, sizable part of the capitalization plan by focusing on key elements that this redevelopment project organically relies upon:

1. Because of the historically significant architecture of the Domes, the project can benefit from a combination of state and federal historic tax credits to provide capital toward the rehabilitation of the Domes buildings. This plan includes the completed application for historic status that is the required first step for eligibility for Historic Tax Credits. (Addendum)

HTC requires some operational complexities that can be overcome – other museums, nonprofits, and civic projects throughout the country have provided valuable models for this plan.

Simply put: it would cost far more to tear down these historic domes and build new than to rehabilitate them. Important historical elements will be preserved for future generations, while applying today's technology to address long-standing structural issues.

2. Mitchell Park's location within one of Milwaukee Opportunity Zones – Clarke Square – can make possible both New Market Tax Credit investment and Opportunity Zone investment. Both investment streams focus on training, workforce skill development, and providing good paying jobs.

This meshes with the plan for Mitchell Park and its Domes to be an urban horticultural center that provides multi-faceted learning opportunities, community service, and quality jobs.

It is important to note that both New Market Tax Credits and PACE are essentially loans. New Market Tax Credits generally provide about 21% of the total amount as investment and the balance as a loan with interest due annually and a repayment of principal after seven years. PACE may be repaid over as long as 20 years.

HTC, NMTC and OZ investment would support the partnership enterprise and learning operations and spaces within the Park and buildings. Insofar as some of the buildings thus used – the greenhouses, "restaurant" dome, workspaces "enterprise hub," boathouse pavilion, and new structure "Welcome Center" would be partly or completely used for enterprise and learning partnerships, these can be supported through this type of financing.

Each of these Federal programs brings with it a unique set of requirements and challenges that, as noted earlier, have been addressed by similar projects in other cities. To determine feasibility, the planning team held discussions with Milwaukee County legal counsel and believe the challenges

in working with so many different financing mechanisms can be overcome. This strategy - bringing together a group of partners and utilizing a range of operating agreements - is admittedly challenging. The first year of the plan will need to be devoted to building the partnerships, working agreements, and related revenue streams for capital and operations.

It could potentially be easier if rather than using such a varied mix of federal programs the project could be financed with a mix of County revenue bonds along with some general obligation bonds. Revenue bonds operate in much the same way as NMTC, utilizing net enterprise revenue from programs and services to pay down the interest and principal. The advantage of revenue bonds is a longer time in which to meet the repayment requirements, making it possible for the Domes and Park partnerships to ramp up operations more gradually over time: the disadvantage is the lack of the 21% investment that NMTCs offer without need for payback, whereas revenue bonds would need 100% payback.

In many ways, it would be far easier to contemplate rehabilitation of the Domes and Mitchell Park purely as a task of Milwaukee County and Milwaukee County Parks. This would require that Milwaukee County provide 100% capital funding through bonds and a100% program and operating budget through Parks annual budgets. That scenario does not work in Milwaukee County's current economy.

## A Potential Additional Revenue Stream for Capital

While this planning study was underway, Milwaukee County received a completed study on potential production of hemp seed for commercial use that would be done within one or two of the Domes greenhouses. While the study itself was limited and did not find the concept feasible work has continued since then to determine feasibility and potential financial impacts. Revenues from this could be potentially used either as a direct fund for phased capital redevelopment or for the purposes of meeting NMTC loan and PACE financing.

Much additional study will need to be done before this strategy can be put forward as a viable mechanism, including study of the likely gross and net revenues, the impact this might have on other donors or other financing, the potential impact on partnerships, and how the requirements related to hemp seed production would impact visitor access to the complex. At this point, this plan's financial model is not including it as a revenue sources, with the understanding that further studies may prove this viable.

# IV. Tax Credits Overview

## HTC

Up to 20% of historic Domes rehabilitation from Federal tax credits; cap of $3.5 million from state tax credits. Tax credits are sold to entitiees that need the credit against their income tax bills, resulting in a lower net o the project than the full amount Based on discussions of likely resale rates with national experts the plan estimates $7 million net for the project.

HTC are only made available after a project is placed in service - when the Domes are re-opened after rehabilitation. (It is possible to secure funding for one dome at a time.) Assuming a 4 year below-market loan the interest will be $610,000, for a net value of $6.39 M from the HTC.

## NMTC

New Market Tax Credits can be used for civic projects and can be bundled from a variety of lenders to meet the total need. There is not a ceiling amount, however, the NMTC repayment calendar requires a realistic view of how much can be financed. To meet the needs of this plan, we have estimated $15 million in NMTC with a carrying cost of $2.9 million over seven years, which is largely met through operating profits and can also be refinanced after seven years. The loan terms only require interest to be paid for the seven years with the balance due at the end. Abot 21% of the NMTC funding is retailed as working capital, providing $3.15 M capital infusion that can come early in the project. This will help address the transitional costs including temporarily moving plants while work is underway and ramping up the new Partnerships and enterprise subsidiaries.

## PACE

PACE is Property Assessed Clean Energy financing that can be applicable to portions of the new and existing buildings in Mitchell Park. PACE funds are voluntarily repaid over any period of time up to 20 years. The longer the paydown, the higher the corresponding interest costs. A $4 million PACE investment toward reglazing, new heating and cooling, lighting and other energy conservation may be possible. PACE financing interest cost are currently estimated at 4%, so that a $5 million PACE loan for 10 years would cost $1.2 M in interest.

# V. Opportunity Zone Overview

This plan estimates a need for $14 million OZ Investment into the Domes and Park. However, it is important to note that this could double or more based on the outcomes of the required private sector capital campaign. (See private sector donor section, below.) Opportunity Zone investment can be applicable to various elements of this plan, including the medical research and urban ag component, the educational partnerships, and the restaurant/catering/culinary arts element. OZ investment is structured such that the investors become partners in the venture, supporting the development throughout. In return, the OZ investor(s) receive important tax benefits that counter capital gains tax they would otherwise have to pay to the IRS. Investors can defer tax on any prior gains invested in a Qualified Opportunity Fund (QOF) until the earlier of the date on which the investment in a QOF is sold or exchanged, or December 31, 2026. If the QOF investment is held for longer than 5 years, there is a 10% exclusion of the deferred gain. If held for more than 7 years, the 10% becomes 15%. If the investor holds the investment in the Opportunity Fund for at least ten years, the investor is eligible for an increase in basis of the QOF investment equal to its fair market value on the date that the QOF investment is sold or exchanged. Because Opportunity Zones were slow to roll out, it is already too late for an investor to hold the QOF investment for ten years for the full gain. The goal now is to gain investors who will be eligible for the 15% exclusion.

This means that OZ investment will need to become some of the early-in support for the Domes and Park. One of the reasons the Federal government established Opportunity Zones was to incentivize investment into neighborhoods such as Clarke Square. Thus, it may be that OZ investment proves to be more attractive to prospective donors than a charitable contribution.

Concept image: Urban Ag area

# VI. The Capital Budget

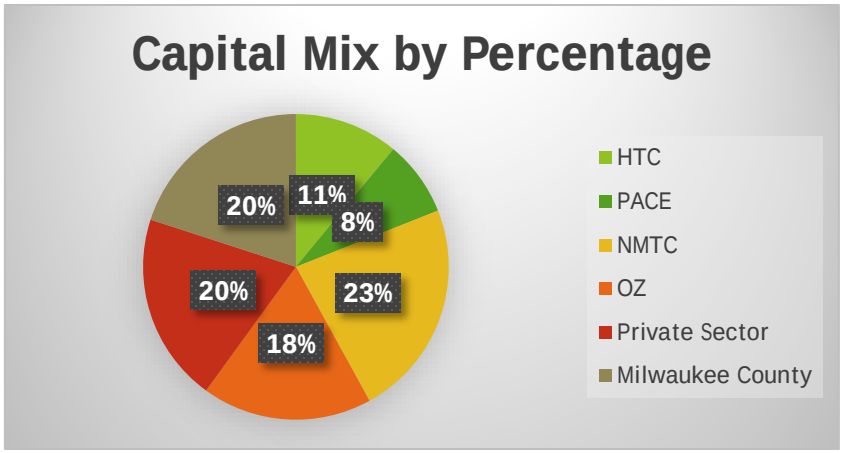
The total estimated capitalization cost for this plan is $66 Million. The plan uses mix of tax credits and investment as well as private and public sector funds. By using this mix and if there is bond support the cost to Milwaukee County taxpayers is only twenty cents of every dollar invested in the Domes and Park.

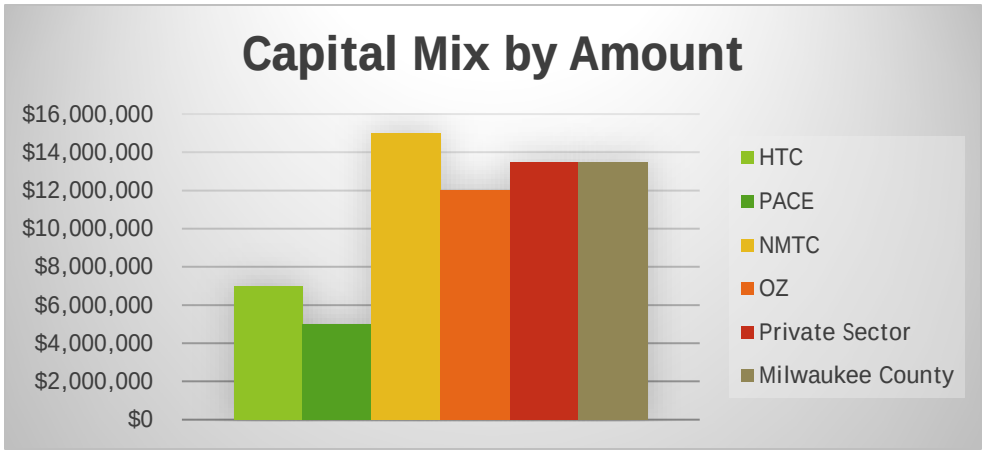
## Capital Revenue Funding Stack

| Item | Pro Forma Estimate |
|---|---|
| HTC | $ 7,000,000 |
| NMTC | $ 15,000,000 |
| OZ Investment | $ 12,000,000 |
| PACE | $ 5,000,000 |
| Private Sector Capital Campaign | $ 13,500,000 |
| Bond Financing | $13,500,000 |
| TOTAL | $66,000,000.00 |

This does not include interest for debt service throughout the ten-year development of the new park. Debt will be paid from operating revenues and is illustrated on the pro forma.

In addition to the above, the plan assumes aggressively seeking pre-capital campaign grants that will support early expense areas, and that there will also be grant support for some elements of the ramp up.

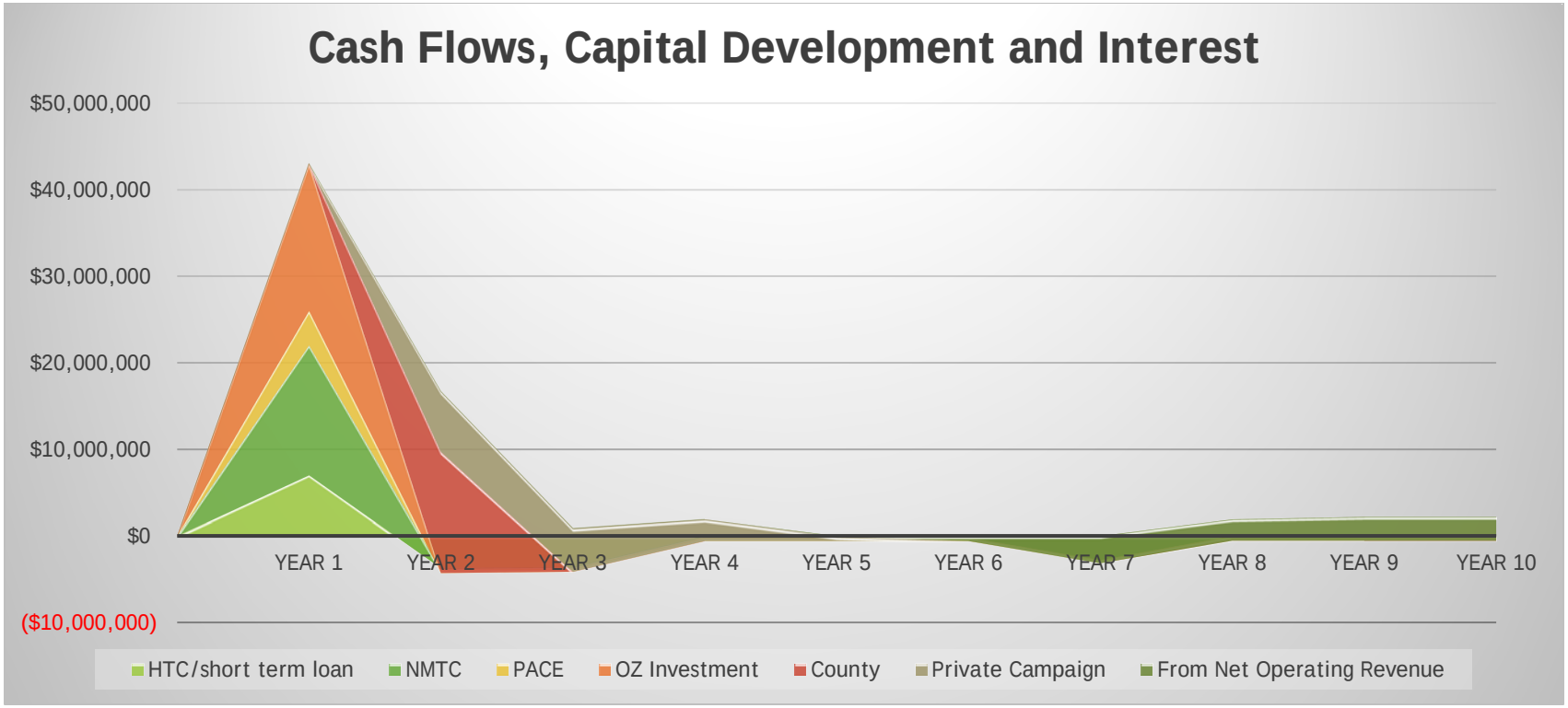


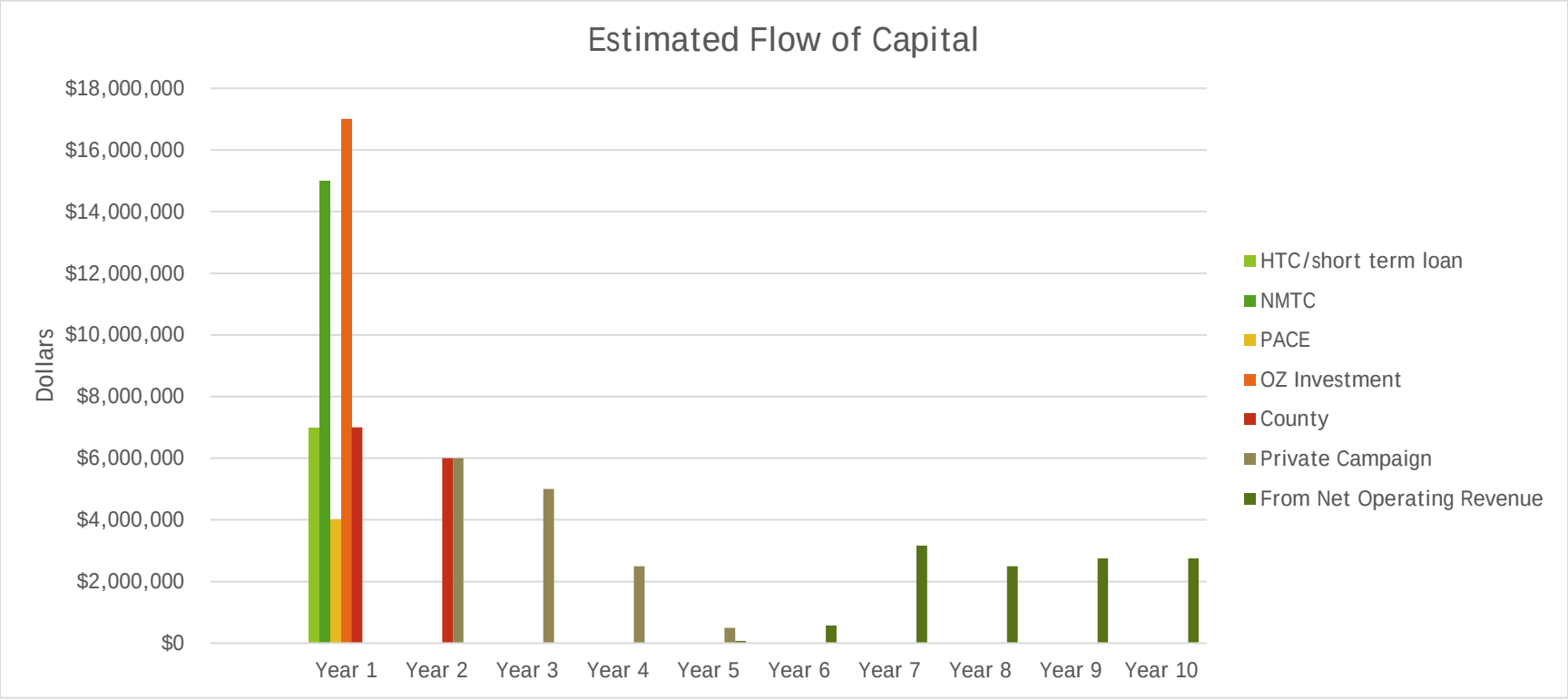

County or other new dollars are needed to match HTC to make possible the full redevelopment of the historic Domes. All other areas and facilities in the Park, including new construction, can be funded and financed through other sources. A number of these elements can be phased and are expected to be developed once funds have been raised over a ten-year period. It is also possible that some of the new outdoor gardens and buildings other than the Domes may be funded before the Domes rehabilitation.

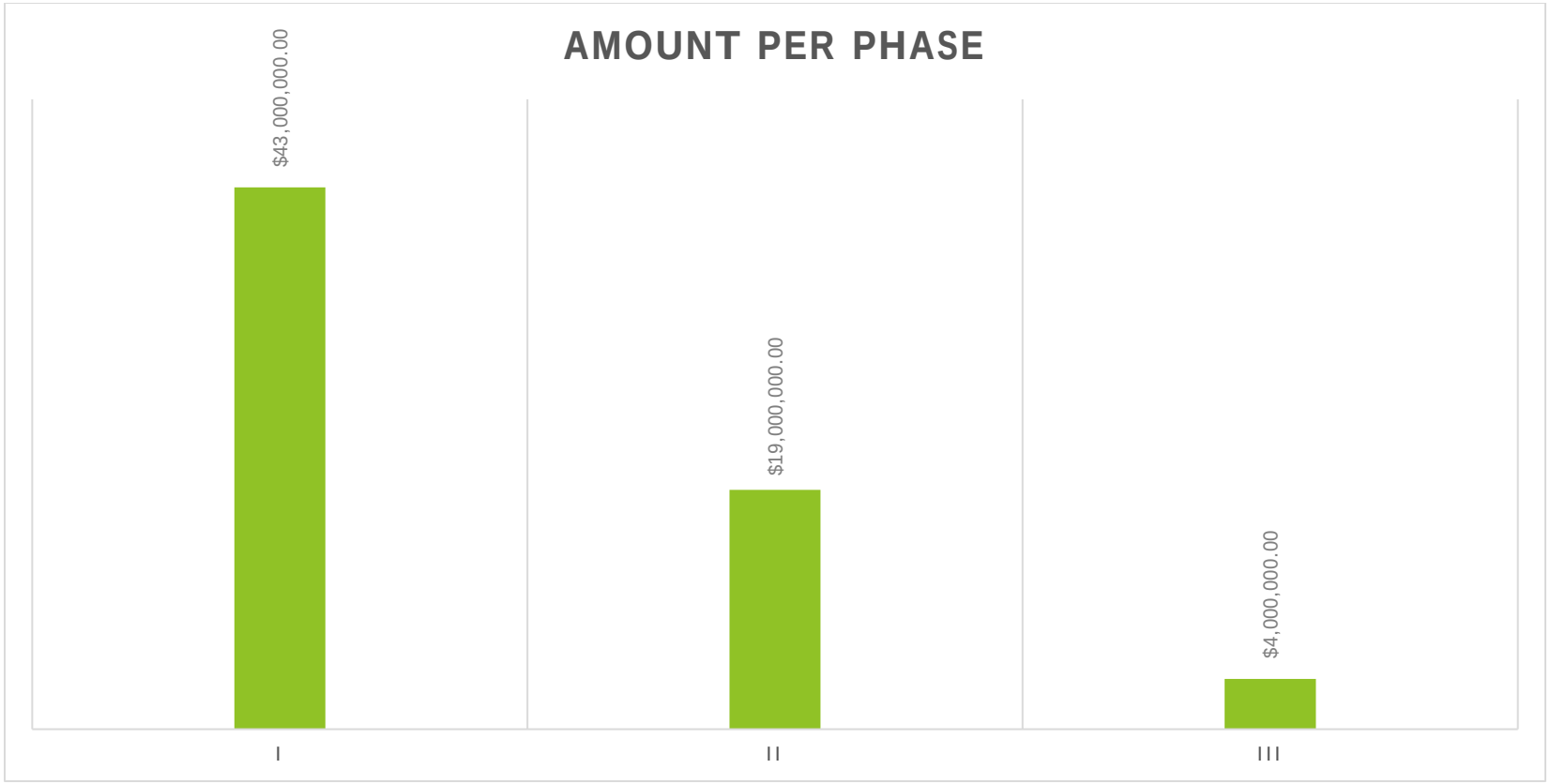
There are various options in getting everything done. For example, by working with partners as is called for in this plan, it may be possible for Milwaukee County to secure additional private sector resources, based on interest from their own donors, toward the Domes. Major naming gifts are applicable.

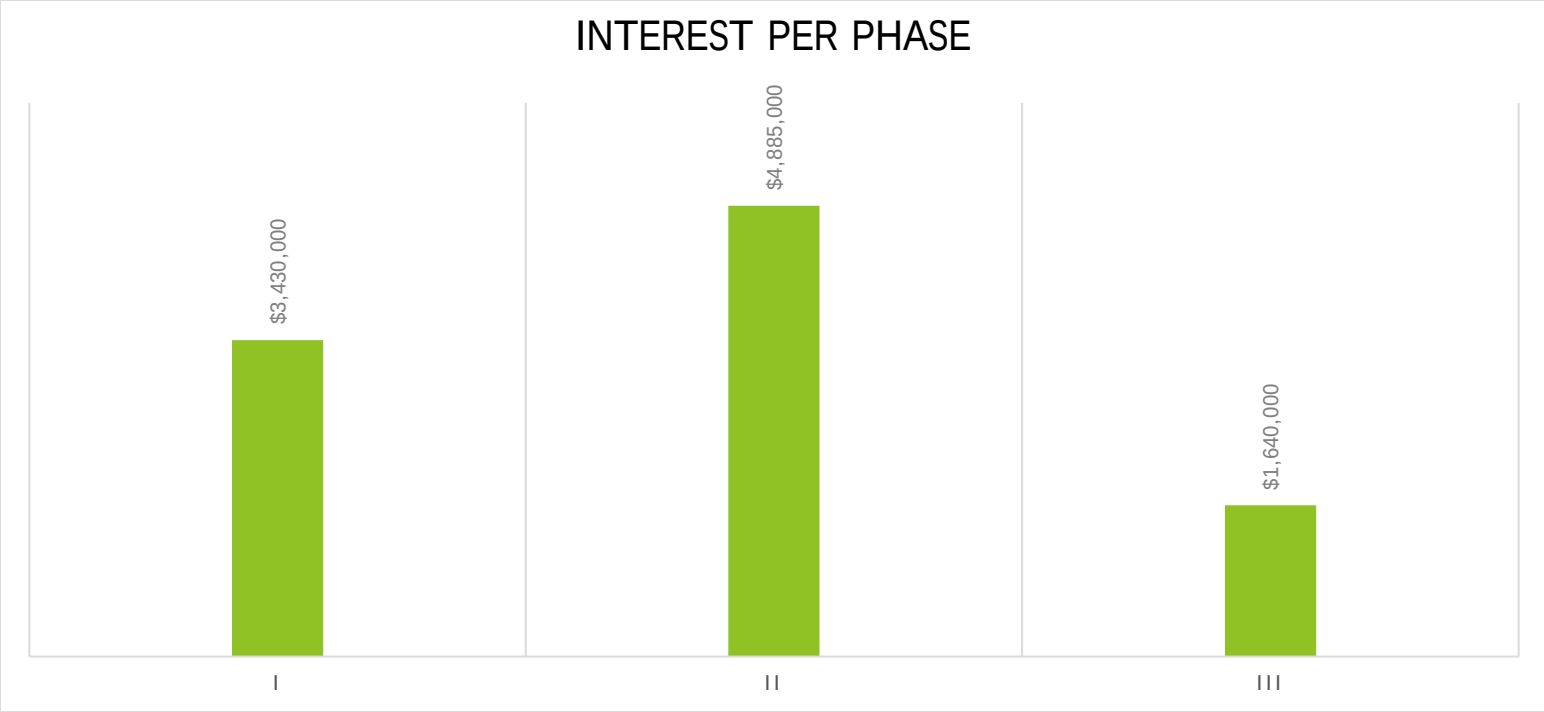
These are all moving parts. All strategies will need to be examined and tested in depth in the coming months in the implementation phase of the Domes business plan.


Cash Flows, Capital Development and Interest
$50,000,000
$40,000,000
$30,000,000
$20,000,000
$10,000,000
$0
($10,000,000)
YEAR 1
YEAR 2
YEAR 3
YEAR 4
YEAR 5
YEAR 6
YEAR 7
YEAR 8
YEAR 9
YEAR 10
HTC/short term loan
NMTC
PACE
OZ Investment
County
Private Campaign
From Net Operating Revenue

The cash flows lend the redevelopment to a phasing. An initial phase of $43 million is likely to partially complete the rehabilitation of the Domes and the new Welcome Center. The second phase is likely to include the balance of the Domes and gardens/buildings. The final phase will complete the gardens. As per the above statements on the capital stack options, much depends on when various capital elements can be secured to match elements of the plan.




AMOUNT PER PHASE
$43,000,000.00
$19,000,000.00
$4,000,000.00
I
II
III




It is important to note that there will be many variations on the above revenue plan. The process of "twinning" tax credits and OZ investment is complex. Often – as may be the case with the Domes and Mitchell Park – numerous entities at both the state and national level may come together to invest in the mix of Historic and New Market tax credits. During the planning process the consultants spoke with Milwaukee, Wisconsin, and national investors including the National Trust Community Investment Corporation, the country's largest HTC investors, which is currently engaged in support of two other projects in Milwaukee. All expressed interest and a high degree of confidence that this multi-faceted approach is viable but note that it will require work to bring together. Some short-term loan financing will also likely be necessary. For example, Historic Tax Credits are only released when the building is placed in service, requiring the project to have up-front financing for the construction/rehabilitation phase. To keep interest costs as low as possible, the plan recommends placing the buildings fully in service by

the end of year 3. A major interest payment is due in Year 7 for NMTC, requiring that operations be at maximum level by this point to make payment from net operating revenues.

For Opportunity Zone investment, the typical project varies. For simplicity, here we are assuming a long-term, gradually growing payment .

The above capital budget hypothesizes a total of $13.5 million in County funding/financing over ten years: less than what it would cost the County to tear down the Domes. If this is not viable, a fallback position of seeking additional NMTC in a second phase, perhaps in 2027, might be doable. However, this places increased pressure on paying this down on top of the first NMTC.

"The case for support clearly meets threshold requirements for importance, relevance, and urgency assuming private contributions will be designated to support new Mitchell Park initiatives and activities rather than addressing deferred maintenance costs resulting from the absence of public investments over the years. In particular, access drives, and the Welcome and Education Center appear to provide the margin of excellence private donors will find compelling." – Bill Durkin, Durkin Associates

## VII. Naming Opportunities

There are numerous naming opportunities for private sector major gifts. These include:

- The Conservatory Complex as a whole
- Each Dome
- Greenhouse learning area
- Children's and Family Garden
- Orchard
- Pavilion
- Events Garden
- Bride's Garden
- Urban Ag Garden
- Soccer Field, Tennis Courts, Basketball Court
- The Welcome Center and Learning Centers Building
- Each Center within the Building
- Elements of the Centers building: i.e. demonstration kitchen, classrooms, labs

The capital campaign giving pyramid for this appears very doable. The scale of the buildings and the appeal they and the programming they will feature suggest that despite other concurrent campaigns of significant size on-

going in Milwaukee, this one has some niche opportunities. This campaign also reaches a national pool of donors and foundations that may not be approached by other significant Milwaukee campaigns. Numerous national foundations have developed major capital funding around many of the concepts contained in this plan.

The following table shows the size and number of gifts required to slightly exceed the stated goal:

| Gift Level | # of Gifts Needed | Total | prospects needed (4:1) | Gifts Rec'd |
|---|---|---|---|---|
| **$1,500,000** | 2 | $3,000,000 | 8 | 2 |
| **$1,000,000** | 2 | $2,000,000 | 8 | 2 |
| **$500,000** | 5 | $2,500,000 | 20 | 4 |
| **$300,000** | 7 | $2,100,000 | 28 | 6 |
| **$250,000** | 12 | $3,000,000 | 48 | 48 |
| **$100,000** | 10 | $1,000,000 | 40 | 10 |
| **$1-$99,999** | 200 | $150,000 | 800 | 50 |
| | | | | |
| **Total** | 238 | $13,750,000 | 952 | 122 |

As with most capital campaigns, success in securing the first 30% of the gifts from major donors will telegraph that the balance of the campaign will be successful.

Conceptual image: Domes Services Hub and new circulation, pathways

# VIII. The Governance Model Required for this Capital Approach

Given the challenges of the partnership approach and of shaping a capital strategy that utilizes tax credits and other investments together with major private sector gifts, effective high-level leadership and governance is essential.

It is important to reinforce that Milwaukee County will retain ownership of the Park and its venues. However, to support the capital strategy this plan proposes the establishment of a new high visibility, high capacity nonprofit, the Mitchell Park & Domes Conservancy, and of moving to a partnership relationship with Milwaukee County that has similar financial operating approaches to some of those employed by Milwaukee County with the Milwaukee Public Museum and the Marcus Center for the Performing Arts.

Following in the footsteps of successful horticultural park conservancies throughout the USA the Mitchell Park & Domes Conservancy will need to be at the forefront of Mitchell Park's historic and ecological conservation, restoration, capital improvements and operations. As a 501(c)3 organization, it will need to operate through a formal agreement with Milwaukee County Parks to restore and improve Mitchell Park and its Domes Conservatory.

It is anticipated that a *transition leadership committee* will be started early in this plan, representing Milwaukee County in identifying outstanding individuals to serve on the initial board. The eventual board will be a minimum of 15 individuals to as many as 30, including significant representation from the County, County Parks, Partners, Community/Neighborhood leaders, and identified civic leaders.

"Volunteer leadership will be the most important element in securing major gifts and candidates. Essentially, it will require experienced civic champions to tell the story in the face of vigorous competition among the 64 current capital appeals in Milwaukee. Develop a roster of 6 – 8 candidates to serve as civic champions based on their place in the philanthropic community, a demonstrated interest in parks, and potential historic ties to this area of the city's southside."

– Bill Durkin, Durkin Associates

*Vision*

Mitchell Park & Domes Conservancy will lead in the creation and operation of a public-private partnership to provide venues and services in Mitchell Park. It will create and manage subsidiary entities that will make possible the capitalization and programming of the Domes and Mitchell Park.

*Mission*

In partnership with Milwaukee County Parks, the Conservancy will raise capital and operating funds, manage operations and oversee supporting entities, and ensure fiscal sustainability. This will necessarily be at the level required to ensure the sustainability, relevance, and vibrancy as Milwaukee's urban horticultural park and conservatory for the next 50 years.

*Priorities*

In keeping with the role of conservancies for public horticultural parks and the role required of any leadership entity seeking Historic and New Market Tax Credits, the Mitchell Park & Domes Conservancy will:

1. Safeguard Mitchell Park and Domes as public resources in Milwaukee County through careful governance and leadership.
2. Act as the management interface for the capital redevelopment of the Park and its buildings, including the Historic Tax Credits, New Market Tax Credits, and Opportunity Zone Investment. Undertake and oversee implementation of the master-plan for the Park and its venues.
3. Be responsible for private sector philanthropy for capital redevelopment, improvements and new structures; for major operating funds; and for endowment and reserve funds. Its initial capital campaign commitment is $14.5 million toward the MILWAUKEE's DOMES campaign.
4. With civic process and leadership, develop sustainable subsidiary entities that ensure Mitchell Park and the Domes long term designation as public, accessible assets and that contribute directly to the success and vibrancy of Mitchell Park & its Domes, including: the Domes Services Corporation, which provides exhibit design and fabrication, events and food service sub-leases and operations, retail, floral design and other services; and the Mitchell Park Partnerships LLC, which maintains long-term shared equity investment partnerships to further the Park's mission and that of its mission-aligned partners, in areas of conservation, health, education and community economic development.
5. Launch and manage the Park's Partners Program, developing and formalizing the partnerships that will become the Mitchell Park Partnerships LLC, formalizing their roles and educational programs, the financial relationship, and linking underwriters and sponsors to the Park and its Partners' important work in urban horticultural and water conservation.
6. Launch and manage Domes Services Corp, an entrepreneurial start up revenue center for the Park.
7. Advocate to County leadership and the private sector for the Park, its mission, and its larger role as a demonstration and community headquarters and leader in urban horticulture and conservation.

8. Support the annual programming and operations of the park through targeted grants and annual campaign support, providing grants funding support to make possible the scale of operations that would not be possible through tax-based support alone.

In addition, and over time, the Conservancy may grow to support similar mission-aligned programs in other Milwaukee County Parks.

## IX. Leadership

Prior to the Conservancy formation, there will be a transition leadership committee that will recommend a strong board. As it is launched, the Conservancy will be governed by a 15 to 30-member board that reflects high level civic leadership, extensive community perspective and expertise to guide the organization as a major fund development entity.

To ensure public input, the Conservancy will establish an Advisory Council representative of its partners, the surrounding neighborhood, horticultural experts and others who can assist it in establishing annual priorities and carrying out its mission. In transition, the Conservancy will utilize an existing Parks 501(c)3 as its fiscal agent.

The phase in staff may be contract or staff or both. These will be primarily focused on major fund development, equity investment oversight, capital improvements planning and implementation, and management of subsidiary entities.

*Relationship with Other Park Entities*

The Conservancy will support the operations of the independent Friends of the Domes, providing fiscal oversight and (TBD) staff leadership for the Friends as an arms-length and grass roots annual support and volunteer organization. The Conservancy will accept gifts of $250 and above, while the Friends will support grass-roots giving of under $250. In keeping with best practices, for every gift the Conservancy receives, it will purchase a Friends membership for the donor, so that every donor is also a Friend.

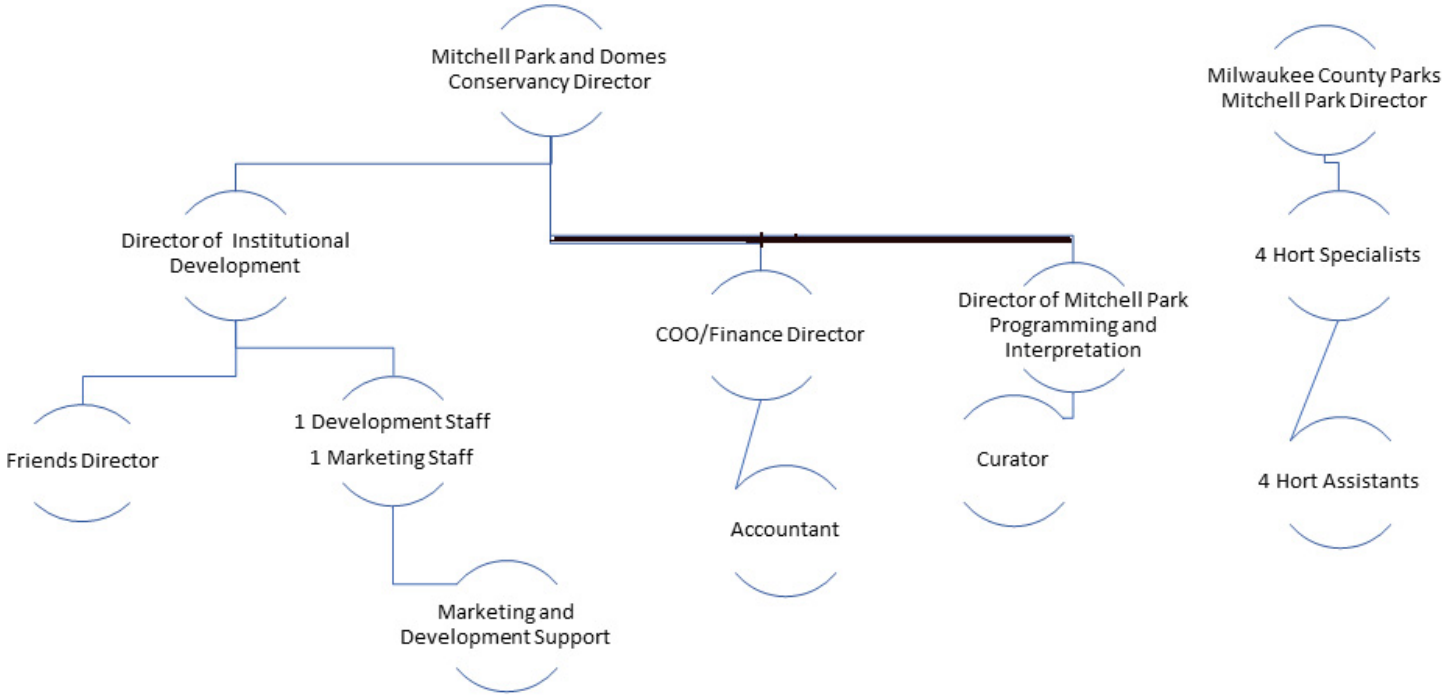
## X. Staffing and Operations

There are several important premises within the plan:

1) Education and community services will be offered through the Park's partners, not by the Park Department. The Conservancy will work closely with these partners to ensure a full range of lifelong learning opportunities are offered.
2) The partners will care for the new gardens introduced into Mitchell Park.
3) There will be an on-site volunteer Master Gardener program that will work inside and outside the Domes, supporting the work of the Park Department professional staff of horticulturalists.
4) The changed concept for the Our World Dome, away from constantly changing shows of flowering annuals in favor of longer-term exhibits based on sustainable plants, requires less greenhouse use by staff and opens new spaces for partners to provide programming.
5) The Domes enterprise elements – retail, food service and events, exhibit design and touring – will come together as a subsidiary unit responsible for generating significant operating revenue. They will be professionally operated and managed. The enterprise elements are required as part of the management structure to receive Historic Tax Credits.
6) A strong Conservancy non-profit will be charged with the responsibility for all the Domes and Park operations except for the professional horticulturalists whose exclusive care of the valued plant collection within the Domes will remain.

These premises lead to a new staffing and operational structure that will be implemented by the Conservancy. While it will be phased in by necessity and added to gradually as the Domes and Park are redeveloped, it will look as follows when completely operational:

Potential Staff Structure, Organizational Chart, Conservancy and Parks Department

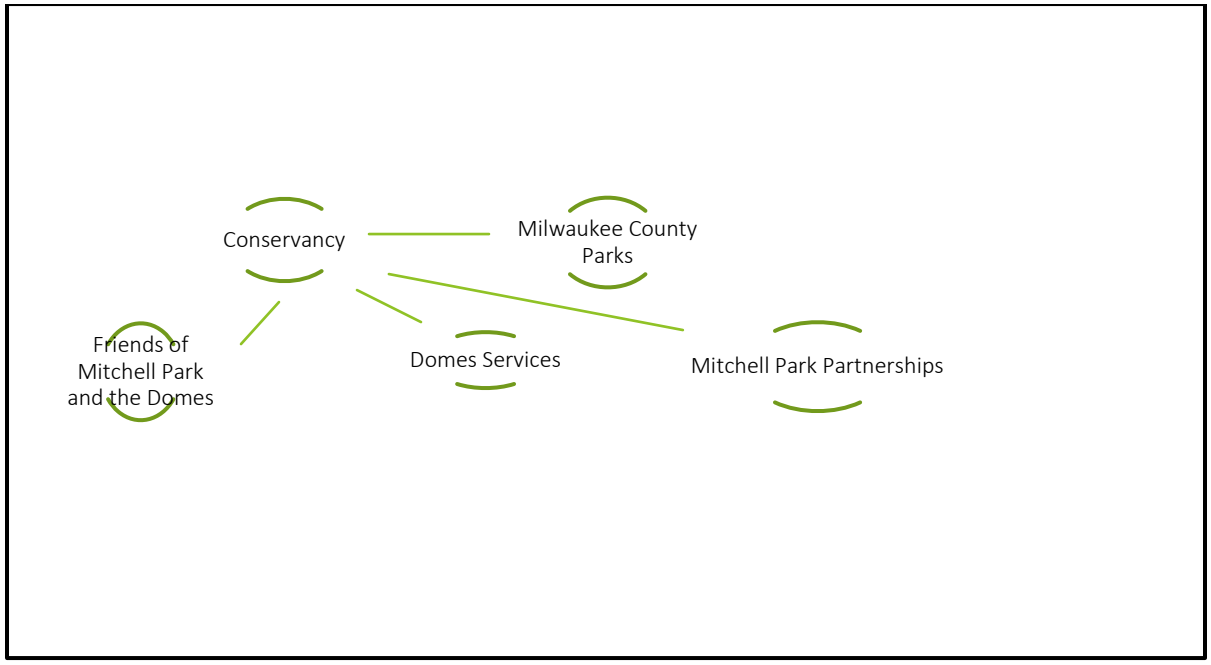



There will likely be two subsidiary entities supporting both the Milwaukee County Park staff and the Conservancy, based on the requirements of HTC, NMTC, PACE and OZ investment.

The Mitchell Park Partnerships subsidiary represents the programming and educational partnerships within the Park, likely including the major and supporting partners.

The Domes Services subsidiary represents the enterprise elements of the park and Domes, including rentals, catering/restaurants, exhibit fabrication, marketing and touring, retail and other revenue generating services including specially programmed events.

They will both focus on education, community services, workforce training, and quality jobs creation while also providing essential services that would otherwise need to be developed by the Conservancy, as per earlier in this report. The Friends, while not a subsidiary, will also provide revenue to the Park and Conservancy through membership flow-through and other fundraising they may do. It is recommended that the Friends organization change its name to Friends of Mitchell Park and the Domes, to better reflect the new membership approach that will be used.




Potential structure with subsidiary entities

# XI. The Friends of the Domes

Part of the consultant team's charge from Milwaukee County was to review not only governance requirements for moving forward, but to also review revenue streams. In doing this, it was necessary to review the current and potential revenue that is the purview of the Friends of the Domes (the "Friends").

Over time and as the Milwaukee County Parks have faced staff reduction, the Friends of the Domes have taken on more than the typical "friends" role of promoting membership, leading advocacy, and providing volunteers. As a result, there is intermingling between what they do with what is done by the County. According to the Friends Articles of Incorporation, its purpose is "to carry on educational, cultural, recreational or scientific programs or activities for the benefit and support of the Domes located in Mitchell Park, Milwaukee County and maintained by Milwaukee County, or to engage in any other lawful activity within the purpose for which this corporation is organized under Chapter 181 Wisconsin Law."

This essentially puts them in the role of supplementing the staff at the Domes in addition to the responsibilities of a typical friends' group. From the Friends of the Domes website: "Friends of the Domes, responsible for this website, are people who donate time and effort by managing events, the gift shop, education, and other fundraising efforts to ensure that Milwaukee always has a world class horticultural conservatory." A true conservancy model would be focused more heavily on revenue generation rather than the significant overlap that exists between the Friends and County staff.

One of the most significant differences between the Friends and other horticultural conservatories and as compared to standard museum practice, Friends membership revenue is held and utilized by the Friends for the elements of supporting the Domes and providing direct educational services rather than paid to the Park as funds raised for Park operations.

As a benchmark for the industry, Friends groups typically provide 60% of funds raised to support the capital and operating costs of the park which they were formed to support. In the case of the Friends of the Domes, in 2016, 23% of gross revenue went to support "Domes enhancements", 41% went to support for "educational programs", and 18% went to the operation of the gift shop. This results in 82% of the funds raised in 2016 going back into direct support for the Domes while also sustaining operations for the Friends.

Given the immense capital and operating costs of the Domes, the Friends would need to raise significant funds to match the buildings' needs, which seems unrealistic.

Furthermore, this report recommends an expanded vision for the Domes that includes adding programming as well as program partnerships to a significant portion of Mitchell Park. The current Friends group is oriented towards the Domes and not the entirety of Mitchell Park. Going forward, a Conservancy that support the vision in this report should provide support for the Park as a whole – not just the Domes - and should clearly focus on the primary roles of advocacy, membership development and volunteers to assist at the Park.

## XII. The Operating Pro Forma

The operating pro forma is based on numerous points as addressed through this plan:

- Rehabilitation of the Domes and redevelopment of other buildings and the park as a whole will occur over a three-year period 2021-2023, with the entire Park and Domes in full operations in 2025.
- The year 2020 will be a ramp up year focused on the establishment of the Conservancy, significant fund development, arrangement of the various tax credits and opportunity investment, completion of architectural and engineering plans, and full development of the partnership entity as well as the subsidiary. Staff will be gradually phased in as is appropriate.
- Construction will begin in fiscal 2021.
- By year five, the Park's combined operations will begin generating revenue to repay the combination of New Market Tax Credits, PACE Tax Credit, and Opportunity Zone investment. These annual repayments may potentially include repayment of short- term loans for construction[4] if these are needed to make the rehabilitation possible.
- Assuming a 2021-22 investment of NMTC, the Park has until 2028-29 to pay off the investment and interest. NMTC allow interest-only payments until the seven-year period loan period is up, allowing the Park to "save" up for the principal payment, earning interest along the way to balance out the loan interest payments. The loan may be refinanced at the end of the seven-year period, offering a safety net if ramp up of full operations takes more time or if the projected new revenue streams are less than anticipated. Assuming the NMTC is loaned in 2021, the Park has until 2028 to repay the principal loan balance of approximately $6.7 million due on the $11 million investment. This operating pro forma shows that this payment can be made in 2028. The OZ loan and interest, meanwhile, would need to be repaid by 2031. The pro forma shows that this is viable.
- There are three fallback positions if there is no potential for public funding. 1) A second round of NMTC financing perhaps starting in 2024 or 2025. However, this increases pressure on the Park and Domes to repay yet more financing. 2) An increased private sector capital campaign. Given the

[4] HTC only becomes available as capital into the project when the buildings are placed into service. Some type of short-term loan may be needed, and/or the loan portion of New Market Tax Credits may be drawn upon for this along with capital campaign contributions.

competition from other major capital campaigns in Milwaukee County and beyond, this seems unlikely within the time period. 3) Bonding some additional portions over time.

This is an aggressive budget based on the need to pay down NMTC and PACE.. Management will need to focus on this at all times.

| | Revenue | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Admissions | $ 950,000.00 | $ 900,000.00 | $ 1,200,000.00 | $1,600,000 | $2,000,000 | $2,000,000 | $2,000,000 | $2,100,000 | $2,100,000 | $2,200,000 | $2,200,000 | $2,225,000 |
| Domes Services | Catering and Restaurant, other rentals | $ 120,000.00 | $ 200,000.00 | $ 280,000.00 | $ 325,000.00 | $ 340,000.00 | $ 360,000.00 | $ 365,000.00 | $ 365,000.00 | $ 370,000.00 | $ 380,000.00 | $ 390,000.00 | $ 400,000.00 |
| | Retail Net | $ 60,000.00 | $ 130.00 | $ 200,000.00 | $ 230,000.00 | $ 260,000.00 | $ 300,000.00 | $ 320,000.00 | $ 335,000.00 | $ 340,000.00 | $ 350,000.00 | $ 355,000.00 | $ 360,000.00 |
| | Touring Exhibit Fabrication | $ - | $ - | $ 45,000.00 | $ 75,000.00 | $ 135,000.00 | $ 150,000.00 | $ 160,000.00 | $ 165,000.00 | $ 175,000.00 | $ 180,000.00 | $ 190,000.00 | $ 200,000.00 |
| Mitchell Park Partnerships rent and commission on programs | WI Center Urban Hort | | $ 75,000.00 | $ 90,000.00 | $160,000 | $180,000 | $200,000 | $210,000 | $210,000 | $220,000 | $220,000 | $225,000 | $225,000 |
| | Health and Ubran Ag | | | | | | | | | | | | |
| | Other Partners | | | | | | | | | | | | |
| | NMTC/OZ Ramp up non capital costs/staff and operations | | $ 500,000.00 | $ 300,000.00 | $ 300,000.00 | | | | | | | | |
| Includes grants brought to the programming by Partners. 2020 includees ramp up grants | Program Grants | $ 750,000.00 | $ 1,000,000.00 | $ 1,000,000.00 | $ 1,000,000.00 | $ 1,500,000.00 | $ 1,750,000.00 | $ 1,800,000.00 | $ 1,900,000.00 | $ 2,000,000.00 | $ 2,000,000.00 | $ 2,250,000.00 | $2,250,000 |
| | Membership net | $ 180,000.00 | $ 250,000.00 | $ 270,000.00 | $ 300,000.00 | $ 325,000.00 | $ 335,000.00 | $ 350,000.00 | $ 365,000.00 | $ 370,000.00 | $ 380,000.00 | $ 380,000.00 | $400,000 |
| | TOTAL W/O PARKS | $ 2,060,000.00 | $ 2,925,130.00 | $ 3,385,000.00 | $3,990,000 | $4,740,000 | $5,095,000 | $ 5,205,000.00 | $ 5,440,000.00 | $ 5,575,000.00 | $ 5,710,000.00 | $ 5,990,000.00 | $ 6,060,000.00 |
| Annual operating support from Milwaukee County Parks | PARKS | $ 400,000.00 | $ 400,000.00 | $ 350,000.00 | $ 300,000.00 | $ 300,000.00 | $ 250,000.00 | $ 250,000.00 | $ 250,000.00 | $ 250,000.00 | $ 250,000.00 | $ 250,000.00 | $ 250,000.00 |
| | TOTAL ALL | $ 2,460,000.00 | $ 3,325,130.00 | $ 3,735,000.00 | $ 4,290,000.00 | $ 5,040,000.00 | $5,345,000 | $ 5,455,000.00 | $ 5,690,000.00 | $ 5,825,000.00 | $ 5,960,000.00 | $ 6,240,000.00 | $ 6,310,000.00 |

Operating Revenue Notes:

Admissions revenues are based on gradual increase in attendance in years 1 and 2 at the same admission fee and current structure of free days. There is a significant ramp of in attendance projected for year 3 with the opening of the Welcome Center and the majority of the Domes: free days will continue but admission will increase incrementally. In 2024, when the entire park will be open – minus some garden areas – revenue will increase again, both based on admission increases and an increase in admission price to match the increased scale of the visitor experience.

Membership will be collected by Friends but passed through as a net after their membership campaign expenses. Membership is expected to grow significantly based in 2022 as it will include “frequent attendance” passes inclusive of new events and gardens as well as savings in dining and increased retail.

This assumes that during 2020, accounting systems are adjusted to reflect this type of consolidated budget for the Park and Conservancy. The plan includes pre-capital campaign grants being sought and received in 2020 to offset ramp-up costs.

| | Expense | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |
| | Conservancy Staff | | $ 500,000.00 | $ 700,000.00 | $ 850,000.00 | $ 900,000.00 | $ 1,000,000.00 | $ 1,150,000.00 | $ 1,150,000.00 | $ 1,200,000.00 | $ 1,300,000.00 | $ 1,300,000.00 | $ 1,300,000.00 | | |
| | Domes Services | $ 150,000.00 | $ 130,000.00 | $ 150,000.00 | $ 165,000.00 | $ 175,000.00 | $ 180,000.00 | $ 190,000.00 | $ 190,000.00 | $ 200,000.00 | $ 200,000.00 | $ 225,000.00 | $ 225,000.00 | | |
| | Marketing/support M.P.Partnerships | | $ 45,000.00 | $ 60,000.00 | $ 75,000.00 | $ 80,000.00 | $ 80,000.00 | $ 85,000.00 | $ 90,000.00 | $ 90,000.00 | $ 90,000.00 | $ 90,000.00 | $ 90,000.00 | | |
| Actual Cost of County Staff, partially offset by operating revenues | Cost of Milw. Park staff | $ 485,000.00 | $ 500,000.00 | $ 500,000.00 | $ 500,000.00 | $ 500,000.00 | $ 500,000.00 | $ 500,000.00 | $ 500,000.00 | $ 500,000.00 | $ 500,000.00 | $ 500,000.00 | $ 500,000.00 | | |
| Utilities Reduced through Clean Energy Upgrades | Utilities | $ 300,000.00 | $ 300,000.00 | $ 265,000.00 | $ 260,000.00 | $ 250,000.00 | $ 250,000.00 | $ 250,000.00 | $ 250,000.00 | $ 250,000.00 | $ 250,000.00 | $ 250,000.00 | $ 250,000.00 | | |
| | Maintenance and botanical cost | $ 520,000.00 | $ 600,000.00 | $ 620,000.00 | $ 700,000.00 | $ 650,000.00 | $ 600,000.00 | $ 450,000.00 | $ 450,000.00 | $ 400,000.00 | $ 400,000.00 | $ 400,000.00 | $ 400,000.00 | | |
| | Ramp up expenses; on-going fees, contracts, services | $ 800,000.00 | $ 800,000.00 | $ 1,000,000.00 | $ 600,000.00 | $ 500,000.00 | $ 450,000.00 | $ 400,000.00 | $ 325,000.00 | $ 300,000.00 | $ 200,000.00 | $ 200,000.00 | $ 100,000.00 | | |
| | Operating costs, programs and services | $ 75,000.00 | $ 275,000.00 | $ 300,000.00 | $ 350,000.00 | $ 350,000.00 | $ 350,000.00 | $ 375,000.00 | $ 375,000.00 | $ 370,000.00 | $ 370,000.00 | $ 370,000.00 | $ 370,000.00 | 10-year reserves and loan repay | |
| | Operating reserves | | $ - | $ - | $ 100,000.00 | $ 100,000.00 | $ 100,000.00 | $ 100,000.00 | | | | | | $ 400,000.00 | Operating reserve total |
| | Interest/Loan payment restricted fund for capital costs paid by operations. | | | $ - | $ 300,000.00 | $1,500,000 | $1,790,000 | $1,800,000 | $2,300,000 | $2,445,000 | $2,500,000 | $2,800,000 | $2,900,000 | $ 18,335,000.00 | Loan and interest. Assumes second short term loan in 2027 for balance of NMTC. |
| | TOTAL | $2,460,000 | $ 3,150,000.00 | $ 3,595,000.00 | $ 3,900,000.00 | $ 5,005,000.00 | $ 5,300,000.00 | $ 5,300,000.00 | $ 5,630,000.00 | $ 5,755,000.00 | $ 5,810,000.00 | $ 6,135,000.00 | $ 6,135,000.00 | | |

## XIII. Mitchell Park and Domes as a Separate County Operating Entity

Supporting the structural and budget recommendations, this plan recommends that Mitchell Park & Domes become its own operating entity, the relationship to Milwaukee County structured similarly to the Milwaukee Public Museum.

In this, the level of responsibility in annual funding to the Park (personnel and maintenance) is reduced, per the above pro forma, from the current level of net $485,000 annually down to $250,000 annually, while the operations of the Domes and Park grows to reimburse Parks $250,000 of the total $500,000 in Park staff envisioned in the plan.

Essentially, through innovation and partnerships, the annual operating cost for Mitchell Park and Domes, to Milwaukee County taxpayers, can through this plan go down to $250,000 a year.

## XIV. Existing Contractual Relationship: Grandview Catering

Prior to launching this planning process, Milwaukee County contracted Grandview Catering (Zilli's) to continue as the Park's caterer. This contract will need to be examined by both parties given the high importance of multiple food service venues throughout the park, in the context of full-service restaurants and multiple catering sites. It is not unusual in parks such as this for there to be multiple simultaneous events: this should be promoted and made possible early in this plan. The vision for the restaurant in the Park "The Dome" includes a separate entrance, serving diners while at the same time catering events in the Domes, and elsewhere in the park.

The plan includes renovation of the boathouse into a state-of-the-art event center that can also be used for conferences. However, in return the plan utilizes the existing "event greenhouse" as a key learning hub, so that this structure will no longer be available for events. It cannot be used for both.

The food service provider should be prepared to operate food truck service or similar pop up food service, as well as a simple café for visitors in the new Welcome Center.

A culinary arts training program with a continuum from apprenticeship to certification, as well as fee-based cooking classes focused on farm-to-table, is one of the envisioned elements for the educational partnerships. Ideally, this will become part of the purview of the food service operations.

## XV. Legal Structure for HTC, New Market Tax Credits, PACE and Opportunity Zone Investment

This plan included dialogue with County legal counsel and with the team's pro bono legal counsel concerning tax credits and OZ Zone structure. It will be important to prepare for county and outside counsel to begin work on formalizing the mechanisms for receipt and utilization of all these mechanisms. IRS rules vary, from extremely tight oversight in the area of Historic Tax Credits, to limited review for Opportunity Zone investors. Investment counsel from local, state, and national entities who were interviewed during the study suggest that it make that much of the first year of this plan (Sept 2019-Sept 2020) to work out the mechanisms for twinning the different tax credits. At the same time, this will require setting up new legal as well as new accounting mechanisms that provide detailed statements on every aspect of the Park and partnership operations.

"Questions need to be anticipated and addressed about the sustainability of high-quality educational programs attracting partnerships with recognized community assets. Major gift donors will expect to be able to anticipate the impact a re-envisioned Mitchell Park will have on the immediate neighborhood as well as the community as a whole." – Bill Durkin, Durkin Associates

Building and sustaining partnerships that will make possible the entire capital structure takes time and careful facilitation. Strong partnerships will invigorate the Park: weak or poorly designed partnerships could destroy the capital capacity.

## XVI. New Systems

In addition to carefully developed partnerships, Mitchell Park and Domes should investigate and implement "best in class" Point of Sale (POS) integrated effectively with membership, fund development, and accounting. (Even though the Milwaukee County Parks Department has recently implemented a new POS system-wide, there should be special review of the applicability of this system to Mitchell Park, and ability for the Park to migrate to a new system if appropriate.

The POS must be inclusive of retail and food service so that as many encounters as possible between the public and the park can be integrated. Membership lists, which have been managed exclusively and only been available to the Friends, need to be integrated into the system, which means that the POS must be compatible with Raiser's Edge (currently used fund raising software) as well as with the new Park Conservancy's accounting system and the County's accounting system. Effective systems will significantly reduce the historic issues within the Domes operations concerning appropriate ticketing procedures, discounts and membership benefits, and relationship with vendors. The aggressive revenue budget for this plan requires that staff are constantly up to date on admissions and can make well-informed decisions throughout the year: this can only happen with a system overhaul as well as linked staff training in all aspects of the system that is selected.

## XVII. The Plants Collection, Upgrades and Accreditation

Plants are the basis of this plan. The Park has an inventory of the plants in the collection with limited notations and information. The planning process included interviews with horticultural experts who raised concern that the plant collection as inventoried has in fact deteriorated over time and that the Domes, in comparison to other major urban botanical centers such as Missouri Botanical Gardens in St. Louis or Chicago Botanical Gardens, is not in a position to contemplate horticultural research because of the collection condition. (This early finding led to the plan's focus, instead, on applied horticultural research combined with medical research with plants to be grown by the researchers.) Without a plan to rehabilitate the Domes and improve environmental control, further deterioration of the collection can be expected. Fixing the Domes is not just adressing a building problem; it is also a collections management requirement.

At the heart of things, the Domes and Mitchell Park have lacked the guidance of a highly qualified horticultural expert who brings to the Domes and Park the necessary oversight of the collection as well as oversight of programs and services. This historical void can begin to be filled even before new Conservancy staff are hired, by beginning the process of review and planning that has been put in place by Botanic Gardens Conservation International. BGCI has developed an accreditation process that mirrors that used by museums throughout the world. Beginning the process will lead to immediate consideration of collections-management policies and topics that have not been put in place. The self-study process includes developing written policies for:

- Degree of permanence, risk analysis
- An underlying scientific basis for the collections
- Proper documentation of the collections, including wild origin

- Monitoring and long-term maintenance of plants in the collections
- Adequate labeling of plants
- Open to the public
- Communication of information to other gardens, institutions and the public
- Promoting conservation through extension and environmental education activities
- Exchange of seed or other materials with other botanic gardens, arboreta or research institutions
- Undertaking of scientific or technical research on plants in the collections including taxonomy, molecular biology, biochemistry, ecology, biodiversity conservation and other disciplines
- Conserving rare and threatened plants in ex situ collections (e.g. in the garden, seed banks etc.) and, wherever possible, in their natural habitats
- Compliance with international and national regulatory frameworks (e.g. the CBD, CITES, plant health, invasive species etc.)
- Adoption and promotion of sustainable practices such as renewable energy, water conservation and waste recycling
- Adoption and promotion of ethical standards related to knowledge, data sharing, procurement, commercialization and employment.

It is important to note that most major US Conservatory/Botanical Parks have been accredited or are in the process of securing accreditation by BGCI. BGCI is also an important resource for the Parks Department to use in review of Park policies and operations. Its research as well as interviews with its leadership during the planning process provided extensive background for this plan.[v]

## XVIII. A Bilingual Park

The neighborhood surrounding Mitchell Park is 68% Latino. To be a 21st Century Urban Botanical Park and have relevancy to the people it seeks to serve through visitation and educational/workforce development, Mitchell Park and the new Conservancy should make it a priority to make virtually every aspect of the destination bi-lingual, beginning with all signage and plant labels as well as printed and on-line information. Conservancy staff and partner educators and outreach providers should be bilingual to the extent possible, even if this requires language training for staff members. Point of sale and admissions staff should be fluent. This change, beginning with signage and the electric outdoor sign, can begin immediately and will telegraph a movement toward equitable access for all.

Wedding Garden conceptual design

# XIX. Next Steps

This plan envisions the balance of 2020 and into the first months of 2021 as transition and planning time. However, it will be important to move forward with essential action as soon as possible. For example, investors into the Opportunity Zone fund will want the opportunity to make their investment prior to the end of this calendar year to maximize their tax savings. NMTC investors (community investment corporations) are already thinking about their investment portfolio for next spring and have asked to receive continuous updates. There is much work to be done in short order. Tasks for 2019-2020 include:

1. Establish a high-level civic leadership committee to guide the capital campaign, establish the Conservancy, and move the plan toward completion.
2. Establish the legal structures that support the receipt of tax credits and OZ investment.
3. Establish the legal structure and governance oversight for the proposed Conservancy.
4. Appropriately structure the relationship with the Friends.
5. Develop and establish the structure for Mitchell Park Partnerships and define what each party brings to the Partnerships and receives from the Partnerships.
6. Develop a financial and operating plan for the Partnerships that supports the multi-year vision and budget.
7. Structure or restructure a comprehensive food service agreement for the Park.
8. Institute bi-lingual communications at the Domes and Park.
9. Develop and establish the structure for Domes Services enterprise subsidiary and define what is included, the legal relationship of the entities, and the operating and financial plan.
10. Apply for and gain transition grants from national sources that may include the National Trust for Historic Preservation, Kresge Foundation, Argosy Foundation, and others.
11. Fund and complete the architectural, engineering, and landscape architectural plans for the Park.
12. Secure commitment for and advance the water stewardship water recirculation plan for the Park.
13. Complete application for historic status.
14. Seek “national” historic significance for the Domes.
15. Put together the package of HTC, NMTC, OZ investment, and PACE as well as any other funding/financing mechanisms to begin Phase 1 construction in 2021.

16. Organize the storage areas of the Domes, including cleaning.
17. Begin the accreditation self-study process.
18. Hire initial staff for the Conservancy.
19. Conduct a full capital campaign study.  Launch campaign with leadership gifts.

Fall 2019 Work Plan Items

| Category | Assigned To | Progress | Start | No. Days |
|---|---|---|---|---|
| Goal | Roundtable and individual partner negotiations | | 9/15/2019 | 45 |
| Milestone | Partner agreement and plan | | 10/31/2019 | 1 |
| Milestone | Partnership legal agreement | | 12/15/2019 | 45 |
| Goal | Enterprise Subsidiary Plan | | 9/15/2019 | 60 |
| Milestone | Enterprise structure and financials pass HTC, NMTC, OZ | | 11/15/2019 | 45 |
| Milestone | OZ Investment Fund Established | | 11/16/2019 | 15 |
| Milestone | Investor Prospectus Complete | | 11/16/2019 | 15 |
| Goal | Transition Leadership Group Established | | 9/15/2019 | 40 |
| Milestone | Capital Campaign Cabinet Starts Up | | 10/15/2019 | 45 |
| Milestone | Preliminary campaign prep | | 10/1/2019 | 30 |
| Goal | Architectural and engineering to final cost stage | | 9/15/2019 | 60 |
| Milestone | Detailed images and info for all campaign and tax credit | | 9/15/2019 | 45 |
| Goal | Legal structure developed with County and Tax Credit | | 9/15/2019 | 90 |
| Milestone | Application for HTC and NMTCs submitted | | 12/1/2019 | 30 |

Conceptual design, Amphitheater

# Part 3.

## Addenda: See Attachments

1. Application for Historic Designation
2. Capital budget for Gardens/Park
3. Report on campaign viability
4. Pre-capital budget items for 2019-2020

## END NOTES

[i] The Role of Public Gardens in Sustainable Community Development, by Dr. Meghan Z. Gough and Dr. John Accordino, for the American Public Gardens Association.
[ii] Shaping the City with Horticulture: Parks and Plazas, by Shannon Leahy, for The Dirt. 5/29/2013.
[iii] Jobs and Equity in the Urban Forest, a Report by EcoTrust and Policy Link, February 2017.
[iv] Preserve LLC report, attached, 2019.
[v] Redefining the Role of Botanic Gardens – Towards a New Social Purpose. Report commissioned by GGCI, 2010.

Conceptual design: Water circulation, Park water stewardship.

NPS Form 10-900 OMB No. 10024-0018

Wisconsin Word Processing Format (Approved 1/92)

**United States Department of Interior**
**National Park Service**

DRAFT

# National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900A). Use a typewriter, word processor, or computer, to complete all items.

## 1. Name of Property

**historic name** Mitchell Park Horticultural Conservatory

**other names/site number** Mitchell Park Domes

## 2. Location

**street & number** 524 South Layton Boulevard N/A **not for publication**

**city or town** Milwaukee N/A **vicinity**

**state** Wisconsin **code** WI **county** Milwaukee **code** 079 **zip code** 53215-1236

## 3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this X nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property X meets _ does not meet the National Register criteria. I recommend that this property be considered significant _ nationally _ statewide X locally. (_ See continuation sheet for additional comments.)

Signature of certifying official/Title Date

State or Federal agency and bureau

In my opinion, the property _ meets _ does not meet the National Register criteria.
(_ See continuation sheet for additional comments.)

Signature of commenting official/Title Date

State or Federal agency and bureau

## 4. National Park Service Certification

I hereby certify that the property is:
__ entered in the National Register.
___ See continuation sheet.
__ determined eligible for the National Register.
___ See continuation sheet.
__ determined not eligible for the National Register.
___ See continuation sheet.
__ removed from the National Register.
__ other, (explain:)

Signature of the Keeper | Date of Action

## 5. Classification

**Ownership of Property**
(check as many boxes as as apply)

| | |
|---|---|
| | private |
| X | public-local |
| | public-State |
| | public-Federal |

**Category of Property**
(Check only one box)

| | |
|---|---|
| X | building(s) |
| | district |
| | structure |
| | site |
| X | object |

**Number of Resources within Property**
(Do not include previously listed resources in the count)

| contributing | noncontributing | |
|---|---|---|
| 1 | | buildings |
| | | sites |
| | | structures |
| 1 | 1 | objects |
| 2 | 1 | total |

**Name of related multiple property listing:**
(Enter "N/A" if property not part of a multiple property listing.)
N/A

**Number of contributing resources previously listed in the National Register**
0

## 6. Function or Use

**Historic Functions**
(Enter categories from instructions)
AGRICULTURE/SUBSISTENCE: Horticultural Facility

**Current Functions**
(Enter categories from instructions)
AGRICULTURE/SUBSISTENCE: Horticultural Facility

## 7. Description

**Architectural Classification**
(Enter categories from instructions)
MODERN MOVEMENT: Mid-Century Modern

**Materials**
(Enter categories from instructions)

| | |
|---|---|
| foundation | CONCRETE |
| walls | STONE: Beach Stone, CONCRETE |
| | METAL: Aluminum, GLASS |
| roof | GLASS |
| other | |

### Narrative Description
(See the attached continuation sheet.)

## 8. Statement of Significance

**Applicable National Register Criteria**
(Mark "x" in one or more boxes for the criteria qualifying the property for the National Register listing.)

_ A Property is associated with events that have made a significant contribution to the broad patterns of our history.

_ B Property is associated with the lives of persons significant in our past.

X C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

_ D Property has yielded, or is likely to yield, information important in prehistory or history.

**Criteria Considerations**
(Mark "x" in all the boxes that apply.)

Property is:

_ A owned by a religious institution or used for religious purposes.

_ B removed from its original location.

_ C a birthplace or grave.

_ D a cemetery.

_ E a reconstructed building, object, or structure.

_ F a commemorative property.

_ G less than 50 years of age or achieved significance within the past 50 years.

**Areas of Significance**
(Enter categories from instructions)

Architecture
Engineering

**Period of Significance**

1964-1967

**Significant Dates**

1965 (Dedication by Lady Bird Johnson)
2008 (Lobby Remodel)
2013 (Significant Addition)

**Significant Person**
(Complete if Criterion B is marked)

N/A

**Cultural Affiliation**

N/A

**Architect/Builder**

Donald L. Grieb

### Narrative Statement of Significance
(See the attached continuation sheet.)

## 9. Major Bibliographic References

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

**Previous Documentation on File** (National Park Service):
- _ preliminary determination of individual listing (36 CFR 67) has been requested
- _ previously listed in the National Register
- _ previously determined eligible by the National Register
- _ designated a National Historic landmark
- _ recorded by Historic American Buildings Survey #
- _ recorded by Historic American Engineering Record #

**Primary location of additional data:**
X State Historic Preservation Office
- _ Other State Agency
- _ Federal Agency
- _ Local government
- _ University

Other
Name of repository:

## 10. Geographical Data

**Acreage of Property** 18.25 acres

**UTM References** (Place additional UTM references on a continuation sheet.)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 16 T | 423033 | 4765268 | 3 | 16T | 422790 | 4763954 |
| | Zone | Easting | Northing | | Zone | Easting | Northing |
| 2 | 16T | 423033 | 4763942 | 4 | 16T | 422790 | 4763954 |
| | Zone | Easting | Northing | | Zone | Easting | Northing |

☐ See Continuation Sheet

**Verbal Boundary Description** (See the attached continuation sheet.)

**Boundary Justification** (See the attached continuation sheet.)

## 11. Form Prepared By

| | | | | | |
|---|---|---|---|---|---|
| **name/title** | Donna Weiss and Kate Bissen | | | | |
| **organization** | Preserve, LLC | | | **date** | 07-16-2019 |
| **street & number** | 5027 North Berkeley Boulevard | | | **telephone** | 262-617-1408 |
| **city or town** | Whitefish Bay | **state** | WI | **zip code** | 53217-5502 |

## Additional Documentation

Submit the following items with the completed form:

**Continuation Sheets**

**Maps** A USGS map (7.5 or 15 minute series) indicating the property's location.
A sketch map for historic districts and properties having large acreage or numerous resources.

**Photographs** Representative black and white photographs of the property.

**Additional Items** (Check with the SHPO or FPO for any additional items)

## Property Owner

Complete this item at the request of SHPO or FPO.)

| | | | | | |
|---|---|---|---|---|---|
| **name/title** | Guy Smith, Parks Director | | | | |
| **organization** | Milwaukee County Parks | | | **date** | 07/16/2019 |
| **street & number** | 9480 Watertown Road | | | **telephone** | 414-257-7275 |
| **city or town** | Wauwatosa | **state** | WI | **zip code** | 53226 |

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**Estimated Burden Statement:** Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects, (1024-0018), Washington, DC 20503.

**Methodology**
The Mitchell Park Horticultural Conservatory (Mitchell Park Domes) has an extensive construction record and published history. Preserve, LLC utilized primary sources in the Milwaukee County Parks records as well as secondary sources and accounts published in local newspapers and trade press to compile a history of the Domes, a record of modifications over time, and the statement of significance. The basis for this nomination is a Nomination Questionnaire submitted in 2016 and the subsequent response from Ms. Peggy Veregin dated April 13, 2016, stating that the building may be eligible for listing on the National Register of Historic Places. Preserve, LLC also conducted a site visit in June 2019 to confirm existing conditions and research findings. The State Historical Society's *Cultural Resource Management in Wisconsin* was used as the foundation of all research, providing context and direction.

*A few notes on terminology:*
While the official name of the complex is the Mitchell Park Horticultural Conservatory, the project was known as the Mitchell Park Domes in local press and planning documents even prior to completion. This served it to distinguish it from the previous conservatory building on the site. For the same reason, "Mitchell Park Domes" or simply "the Domes" is used throughout this document to reference the current building.

The building is oriented with the main entrance facing southwest. This elevation with the main entrance at the center is referred to as the front or entrance elevation in keeping with original drawings. As a collection of circular structures, the Domes do not have clear orthogonal elevations. The narrative descriptions are instead organized by building elements: Entrance Pavilion and Lobby, Domes (A, B, and C), Transition House, Air Lock and Boiler Room, and Greenhouse Addition.

**Summary**
The Mitchell Park Horticultural Conservatory (Mitchell Park Domes) is located at the northwest corner of Mitchell Park, a 60 acre park on Milwaukee's near south side. Mitchell Park is one of five original public parks established in 1890 by the Milwaukee Board of Park Commissioners, the city's first parks board. The park was designed by architect C. Koch and Company and featured a pond for recreational boating as well as a conservatory and gardens. Mitchell Park is also located south of a bend in the Menomonee River and the associated valley, making it appear significantly higher in elevation than land to the north. The bend in the river results in a predominant view corridor from the Milwaukee's central business district. The area surrounding Mitchell Park is hilly and predominantly industrial with businesses located south of the park. Residences are concentrated in the blocks south of Pierce Street on the south side of the park, where the predominant architectural styles are Queen Anne and Colonial. Most visitors to the Domes arrive by car, bus, or bike.

The Domes were commissioned in 1954 to replace an earlier conservatory on the site (constructed in 1898). In 2013, a large greenhouse facility was added to the back (east) side of the domes. Despite its size, the addition is well hidden by the Domes from most of the primary view corridors. The greenhouse addition is not open to the public except during special events and is used to cultivate plants for the entire Milwaukee County parks system. The largest greenhouse in the addition is also used as an event and exhibition space. The uses of the Domes have expanded over time. At present, the Domes serve as a conservatory, an ecological museum, a horticultural educational center, an event space, and a greenhouse.

There is one contributing and one non-contributing object on the site. A contributing sign dating to the period of significance is located south of the main drive along South Layton Boulevard. A non-contributing sign with a lighted display is located on the north side of the turn into the Domes complex from South Layton Boulevard. A sculpture, "Drift Bench," is located between the large south parking lot and the circle drive. This sculpture is not significant enough to

contribute to the overall resources count. The 2011 sculpture is a collaborative project by architecture students at the University of Wisconsin-Milwaukee and was moved to the park in 2015.

From the entrance sequence, the exterior of the Domes appears almost exactly as it did when they opened in 1967. Landscape features around the entrance and sides as well as the arcaded entrance feature have been modified but retain the approach and plaza aspects of the original design (landscape modifications are described in more detail in the following sections). The interior of the lobby and support spaces was substantially remodeled in 2008 to provide upgraded public restrooms, address new ticketing processes, and accommodate the growing demand for event rental space. Many original features are retained. The interiors of Dome B (Tropical House) and Dome C (Arid House) are highly intact. The interior landscape features of Dome A (Show House) were intended to change with various exhibitions and events; the original structural and architectural features remain intact. The Transition House, a smaller greenhouse with a round glass hip roof, is also highly intact. The concrete dome substructure, highly innovative during a time when architects were experimenting with the limits of concrete construction, has suffered in the moist environment. For a period during 2016, the Domes were closed due to falling concrete. Planning is currently underway for large-scale repair and restoration.

**Site and Setting**

The Domes complex was designed to be viewed from all angles due to its setting within a park. It is nestled within plantings and trees. In addition, Mitchell Park is located on a small hill at the south rim of the Menomonee River Valley, making the Domes visible above the trees from several blocks and even miles away. The Domes are an unmistakable landmark for anyone traveling east or west on the I-94 expressway. The Domes complex is angled and set back from the South Layton Boulevard, approached via a circle drive with access to parking in either direction. To the north of the entrance drive, a small parking lot sits in front of Dome A (Show House). To the south of the entrance drive, a large parking lot consists of three rows of double-loaded angled parking separated by grass medians. The circle drive features a large planted area in the center. Between the circle drive and the Domes entrance is a large plaza with minimal seating and additional planters. Concrete and pavers comprise the majority of the plaza which was once flanked by two large reflecting pools. The pools have been paved over and small bubble fountains line the pool's retaining walls. The plaza leads up to the main entrance.

The north side of the Domes is wooded, creating a visual separation from the wide swath of railroad tracks which are in close proximity to the site. Parkland to the east and south further isolate the Domes from nearby industrial and commercial areas. At the south end of the complex, a secondary entrance is set far back, leading directly to the greenhouse addition. South of the Domes and to the east of the large parking area, the ground forms a shallow depression. This location once featured a sunken garden with terraced plantings down to a reflecting pool. The reflecting pool was filled in as part of the Domes construction. The rest of the plantings were removed in 1994; the terracing was smoothed and sodded over. Steps leading down into the depression remain on the north end. A park drive continues from the north parking lot around the north edge of the site. A paved service and loading dock area is located on the north side of the building, accessing the Transition House and the loading/service area of the greenhouse addition. This concrete area is fenced with tall black chain link fencing. A gate of the same fencing materials separates the service docks from the service drive and park. On the east side, east of the Greenhouse Addition, a fence constructed of modern-era concrete masonry block posts and steel security pickets separates the greenhouses from the adjacent park land.

While the only vehicular approach is via Layton Boulevard, the Domes are connected to a series of park and county-wide trails. Within the park, a system of asphalt paths connects the domes to a concert stage, playground/wading pool, athletic fields, and park pavilion as well as a circle path around a 2-acre pond. On the north side of the park, a path and bridge connect the Domes to the Hank Aaron State Trail, a fourteen mile paved bike trail that extends the lakefront to the

Milwaukee/Waukesha county line and traverses an area of restored prairie, watershed, woodlands, urban development, and riverfront.

**Configuration of Building Elements**

The Mitchell Park Domes are a Mid-Century Modern style complex of conoidal domes rising more than seventy feet above a one- and two-story, flat-roofed building housing lobby, service, storage, ticketing, and educational functions. A series of greenhouses closed to the public are also part of the complex. The Domes are arranged in an isosceles triangle, with Dome A (Show House) and B (Tropical House) forming the base of the triangle and Dome C (Arid House) the apex. These domes are connected by a large lobby. The entrance pavilion is located on the base of this triangle between Domes A and B under an undulating precast concrete roof arcade, connecting the exterior plaza to the lobby. The lobby terminates at the boiler room between Domes A and C and at the Education Center and offices between Domes B and C. The boiler room and air lock form a service space on the north side of Domes A and C. The air lock connects Dome A to the Transition House, a shorter, smaller round greenhouse with a round hip roof. The boiler room infills the rest of the space between the Transition House, Dome A, and Dome C. The Greenhouse Addition is a 65,000 square foot complex with seven greenhouses, a storage and chemicals building, and a connecting link. The addition has its own entrance set back on the south east side of the Domes. On the main floor, there are two access points between the original Domes and the Addition: A corridor from the lobby between Domes B and C and a passage at Dome B. At the basement level, a large loading dock and storage space infills the space between the additions and the Domes. Other than these connections, the addition does not physically touch the Domes. See the site plan, Figure 1.

Architect Donald Grieb initially envisioned a bold color palate, specifying yellows and oranges for doors, slate blue for toilet partitions, exposed piping, and stairs, and sky blue for coating the precast structural members.[1] Robert J. Mikula, County Landscape Architect, vetoed several of these selections as “too flamboyant” and selected colors he deemed “more sedate” while achieving “a little life and brightness.” Instead, Mikula selected Mellow Orange for several exterior doors and Restful Green for the remaining doors and frames. He also selected Bright Red for the handrails.[2]

**Entrance Pavilion and Lobby**

From Grieb’s perspective, the greatest function of the lobby and the entire entrance sequence was to accentuate the scale of the domes themselves. In one of his design diagrams, he shows his concept of a tall entry foyer (at least twenty feet), that compresses down to a low-ceilinged lobby. The visitor is further compressed by the glazed-brick entrance features, with ceilings that are barely seven-feet tall.[3] Having been compressed as much as code would allow, the visitor steps into the nearly ninety foot tall glass dome. This sequence of compression and release was one of Grieb’s most skillful techniques to accentuate the scale of the dome interior and is fully retained in the entrance and lobby spaces despite a 2008 remodel.

The front entrance faces southwest and features an undulating precast concrete arcade with modern-era anodized aluminum curtainwall under each arch. The precast panels have a stone aggregate finish. On the edges of the canopy, the aggregate is fine, like small pebbles. Below the curtainwalls and on the walls surrounding the lobby space, the aggregate is a large smooth beach stone collected from Lake Michigan and culled for color and size. The undulations are formed by nine twenty-four foot precast concrete arches with splayed verticals. The arches are faced with identically shaped panels using the fine stone aggregate described above. The arches are supported on precast concrete plinths atop inverted, tapered

[1] Donald Grieb Associates. “Mitchell Park Conservatory Interior and Exterior Color Selection,” December 15, 1961.
[2] Letter, Robert J. Mikula to Gilbert O. Grunwald, Subject: Conservatory Color Selection, January 26, 1962.
[3] Milwaukee County Park Commission, “Milwaukee County/Mitchell Park Horticultural Conservatory,” (Milwaukee: E. F. Schmidt Company, undated), 19.

concrete piers, with the narrowest width at the ground. Set far back behind the arches, the flat wall face surrounding the entrance pavilion recedes. It is also faced with fine aggregate precast concrete. Between the arches, the entrance pavilion and the entire lobby volume have a flat roof with a rubber roofing membrane. Glass French entrance doors occupy the center of each of the three center bays.

The front entrance doors lead into a foyer with a modern-era ticketing booth surrounded by glass. A set of interior glass doors on either side of the ticketing booth lead to the lobby connecting the three domes and the education center. Also housed in the entry pavilion volume is an office, restrooms, and the gift shop. These are all accessed off the lobby. The foyer is characterized by smooth finished plaster walls and a finished plaster vaulted ceiling. The ticket booth has partial height gypsum board walls with glass from the counter height up to the ceiling on all sides. Five modern-era pendants echo mid-century fixtures.

Several original features are extant in the remodeled lobby. Frosted glass in windows around the base of each dome provide diffuse light from the domes above and obscure the water drainage system for the domes. The entrances to Dome C are positioned across from entrances to Domes A and B so that one could move between the domes without crossing back through the lobby. Glazed brick walls distinguish the entrances of each dome from the rest of the frosted glass walls surrounding the domes. Each dome entrance features a different color of glazed brick. Dome A (Show) is teal, Dome B (Tropical) is sage green, and Dome C (Arid) is yellow. Doors at the far ends of the lobby between the domes lead to non-public and service spaces as described below. The original terrazzo floor was retained and repaired with the exception of an almond shaped section below the skylight where new terrazzo was poured to match the remodeled skylight opening. The skylight was retained. Finished plaster is retained at non-remodeled walls.

The 2008 remodel included the new ticketing booth and new finishes throughout the lobby, restrooms, gift shop, and offices. As part of the renovation, new signage was placed over the entrance to each dome. There are two entrances to each dome from the lobby. In the toilet rooms, most fixtures were retained with the exception of upgrades to meet modern accessibility standards. Sinks and countertops were replaced.

*Education Center*
The Education Center is a small flat-roofed addition between Domes B and C adjacent to the Greenhouse Addition connector. The exact date of construction is unknown, but photos indicate it predates 2008 lobby upgrades. The Education Center has a green roof, gypsum board walls, and an anodized aluminum-framed glass storefront wall dividing it from the rest of the lobby. It previously served as a gift shop.

**Domes**
The domes are the signature feature of the complex, rising above the flat roofed support spaces. Each dome features an identical structure, size, and shape. The only variance is its connection to the Lobby Space and spatial relationship to the rest of the complex. The domes are not technically domes in the geometrical sense. Donald Grieb, the original architect, referred to them as beehive- or conoid-shaped. They are taller than they are wide, distinguishing them from the hemisphere-producing structural system used to construct Buckminster Fuller's geodesic dome.

The circular foundations of each dome are composed of two poured concrete walls with a cavity between for maintenance, pipe runs, and drainage. The radius to the outermost foundation wall is 70 feet. This wall construction continues above grade to the base of the glass dome. It is capped by a built-in gutter and water drainage system. Where the concrete wall is exposed to the exterior, it it finished with large-aggregate precast concrete as described on the Entrance Pavilion. The top edge of the concrete wall is serrated. Inset into each vertical triangle is a triangular-shaped louvered panel. Additional

louvered panels are located within the glass skin between the precast concrete peaks. Together, the louvers comprise the ventilation and exhaust system for the domes.

The domes, which are eighty-five feet tall, are self-supported by a web-like substructure of reinforced concrete. The glass and aluminum skin of the domes is connected to the framework using aluminum struts. In his patent application, architect Donald L. Grieb described the structural system as "precast reinforced concrete geometric sections preferably of generally hexagonal and also diamond shape, joined together in recurring pattern in circular tiers providing the dome shape."[4] At the Mitchell Park Domes, starting from the valley between the saw-tooth shaped concrete wall, the structural framework is composed of three tiers of hexagonal pieces with six spokes radiated from the center point to each corner, each hexagon diminishing in size from the one below it. Above the hexagons, the second two tiers are diamond-shaped members with a cross strut. The top tier below the ring supporting the apex consists of a triangular tier. (See Figure 2). Concrete was originally painted with two coats of specialized epoxy paint intended to protect it from fungi growth and moisture exposure.

Above this sequence of diminishing shapes is a ring beam that supports the apex, the top of each dome that was structured independently to bear on the ring beam. The apex was installed separately as single structural piece. The transition between the lower dome structure and the apex is clearly visible. The apex is structured as two concentric circles with ribs radiating from the center to the outer ring. (See Figure 3). The top of each dome, within the apex, has an exhaust and ventilation system nested in a ribbed, opaque cap and suspended down from the structure.

115,00 square feet of quarter-inch thick plate glass with reinforced wire netting comprise the aluminum-framed skins. 240,000 feet of neoprene gasketing holds glass in the frames. The glazing frames, consisting of over 120,000 linear feet of aluminum extrusions, are connected to the concrete framework using connectors Grieb termed "hubs." (see Figure 4). The eight-inch diameter hubs are located at intersections of concrete structure and aluminum frames, holding the aluminum frames several inches off the structure. There are 5,500 hubs total on all three domes.[5]

In 2008, LED lights were installed to form halo rings illuminating each dome apex on the exterior at night. Additional LED lights allow the Show Dome to offer nightly light shows.

The domes are serviced and maintained using an electric scaffold with a wire cable, a permanent fixture designed for the Domes. The system is used for washing and replacing glass or neoprene sills.

The interiors of each dome consist of multi-level plantings and pedestrian rest areas. Each dome has a specific focus as described below.

*Dome A*
Dome A is the Show House (now Show Dome) and features rotating displays and exhibitions. The original annual cycle of shows included special themed displays for Orchid, Easter, Mother's Day, Summer, Exotic Plant Clinic, Chrysanthemum, and Christmas shows. The permanent features of Dome A include select perimeter plantings and a paved walkway from the lobby doors down into the dome. In 2010, brick pavers were installed in the Show House. A central water feature is incorporated into most shows. Temporary installations such as buildings, gazebos, or other pavilions may be installed as part of a show. The Domes collaborate with model railroad groups to incorporate model rail displays into exhibitions in the Show House. Teal glazed brick flanks the interior walls at each Lobby entrance.

[4] D. L. Grieb. "Dome Building Construction," Patent US3192668A, July 6, 1965, 1.
[5] Milwaukee County Park Commission, "Milwaukee County/Mitchell Park Horticultural Conservatory," (Milwaukee: E. F. Schmidt Company, undated), 24.

*Dome B*
Dome B is the Tropical House (now Tropical Dome) and features mature tropical plants and trees forming a canopy almost as tall as the dome itself. A 25-foot waterfall that was part of the original installation remains, as does the original configuration of paths, bridges, and rest areas. Interspersed throughout the Tropical House, man-made rock and earthworks add dimension and shield sections of the path as it meanders from one set of Lobby doors to the other. The main pathway changes in elevation approximately one story before returning to the Lobby level. The height change allows plants requiring more shade or cooler temperatures to be shielded from the sun exposure closer to the glazed dome wall surface. In addition to plants, the Tropical House is home to birds and fish. Green glazed brick flanks the interior walls at each Lobby entrance.

*Dome C*
Dome C is the Arid House (now Desert Dome) and features mature cacti, palms, and succulents from arid regions around the world. Man-made rock formations separate sections of path and simulate desert rock formations. The original paths, resting points, and central "oasis" water feature are all intact. Similar to the other domes, the path goes from one Lobby door to the other and drops approximately one story in the intervening space. The Arid House is also home to reptiles (in tanks) and birds. Yellow glazed brick flanks the interior walls at each Lobby entrance.

**Transition House**
The Transition House is a circular greenhouse adjacent to the Show House (Dome A). It is intended to help plants acclimate to the air circulation and quality present in the main domes. It was historically used to store and renovate plant material for reintroduction into the main domes. The Transition House was not intended to be open to the public; as a result the building is more utilitarian. The basement of the Transition House is a storage and intake area from the rear service loading docks accessed by a large overhead door. The upper floor is used for plant material. The walls from grade up to a few feet above the first floor are composed of concrete faced in veneer brick on the exterior. The walls are faceted into straight segments to make the cylinder without having to construct materials on a curve. The upper portion of the walls are composed of aluminum curtainwall in straight segments around the circumference of the circular supporting wall. A four-lite awning-style ventilator window is located in the center of each segment. The hip roof is a shallow cone, fully glazed, with a steel-framed structure. At the top, a fan hood provides ventilation to the Transition House.

**Air Lock and Boiler Room**
The first floor Air Lock and basement Boiler Room are both large utility spaces. The exteriors are concrete. The Air Lock is used to transport materials from the loading dock into the Domes complex through the large overhead doors. It also serves as a passthrough to transport plants from the Transition House into the Show House. The Boiler Room is used to house mechanical equipment. It also features overhead doors to the exterior loading and exterior service area at the northeast side of the complex. Both spaces are characterized by exposed concrete and structure without additional finishes.

The Domes featured the most modern equipment available at the time of their construction. Basement utility spaces housed an electric generator, three gas-fired boilers, an acid treatment system for water with two 18,000 gallon tanks, and compressors for the humidification system. These features, or in some cases updated equivalents, are retained in the basement support spaces and the Boiler Room.

**Greenhouse Addition**

The Greenhouse Addition was constructed in 2013-2014 to replace the Greenhouse Center located at North 104th Street and Watertown Plan Road. It is the growing site for plants displayed at the Mitchell Park Domes, Boerner Botanical Gardens, General Mitchell International Airport, and all other Milwaukee County Parks. Plants may be grown from seeds more than a year in advance of final placement.

The Greenhouse Addition extends along the entire east side of the domes. It consists of a series of greenhouses and support buildings oriented with their long axes running east-west linked by a separate connecting corridor running north south at the west end of the greenhouses. The corridor has concrete floors, exposed ceilings, and a combination of concrete, metal, and gypsum board walls. The roof of the connecting corridors is metal standing seam. Doors and windows are aluminum storefront construction. At the north end, the Flex House is separated from the rest of the structure by twenty feet. This smaller-scale building is composed of concrete, steel, and glass. The Storage/Prep and Chemical Building is a board-formed concrete structure with a metal monitor-style gabled roof. It also features a loading dock area that shares the exterior paved loading/service area with the original Domes building.

South of the Storage/Prep and Chemical Building, six directly-abutting rectilinear greenhouses are constructed with concrete block lower walls topped with aluminum curtainwall and gabled roof supported by steel trusses. Approximately thirty two feet separate the greenhouses from the Storage/Prep and Chemical Building. A panel at the ridge of each gable opens along both sides for the full length of the ridge to allow natural ventilation to occur. The furthest north greenhouse acts as the head house and is narrower than the five. The connecting corridor jogs at this bank of greenhouses and is linked to the greenhouses with short passages connecting to their west entrances.

Forty feet south of the greenhouses, connected by the connecting corridor, is a larger greenhouse which is outfitted as exposition and event space. Similar to the other greenhouses, it is structured with a lower wall of concrete block and aluminum and glass curtainwall and roof supported by steel trusses. This greenhouse has a monitor-style gabled roof (fully glazed). It has a concrete floor and large concrete piers. Two gabled volumes within the south greenhouse are clad in tile and corrugated metal. The south inner volume houses a men's and women's restroom.

The Greenhouse Addition is well-concealed from the public rights-of-way. Most of the greenhouses and connected support spaces are low enough relative to the clear domes that they are not perceived from the interior of the structure. Additional storage/garage space is located on the basement level between Domes B and C and the addition. The most visible portion of the addition's exterior is the entrance on the south end. Despite the size of the addition, it is subservient to the historic Domes. The greenhouses are closed to the public, set far back from the original building, and more subdued in materials and design.

**Modifications to Buildings**
In addition to those modifications described above to the lobby and plaza, the following modifications have been made to the Mitchell Park Domes:
Date unknown, pre-2008: Construction of the Education Center (formerly gift shop)
In 1994, the sunken garden was removed. A depression remains in the ground where this feature was located.
In 2016, netting was installed around the concrete structure to contain spalling concrete and falling debris.
In 2017, electrical service was upgraded, resulting in no substantial changes to the architecture.

**Landscape Features**

*Circle Drive*

The circle drive is one of the original landscape features included in the Domes design. It forms the pivot point from the orthogonal street grid of Milwaukee to the canted Domes plaza. Within the circle, a large circular planting bed is maintained with seasonal plants. Parking is no longer allowed on the circle to prevent obscuring the Domes, but it connects back to the north and south parking lots.

*Stone Wall/Reflecting Pools/Entrance Plaza*

The entrance plaza makes the transition from the circle drive to the undulating entrance pavilion arches. A low stone wall surrounds the area that once separated the reflecting pool on either side of the entrance plaza. The original plaza was designed as concrete with a scored sinewave pattern flanking a rectilinear central path. The plaza cut between two reflecting pools which abutted Domes A and B. The walls around the reflecting pools were constructed of dolomitic limestone with a precast concrete cap and remain intact. The pools have been infilled.

The entrance plaza was redesigned in 2010 to promote site drainage and increase natural storm runoff. The redesign was completed internally by the Milwaukee County Department of Transportation and Public Works. Large sections of concrete were replaced with raised planter beds with natural plantings. An inlaid stone and brass interactive sundial feature was incorporated into a poured circular section between the planters and the circle drive. At the same time, brick pavers were installed at the former reflecting pool locations. The pavers form a grid of stacked and soldier bond units bordering sections of herringbone brick. A series of nine column jet water fountains is arranged along the wall on each side. Similar to the planter beds, pavers are pervious and designed to promote better site drainage.

*Signage and Sculpture*

The primary signage along Layton Boulevard is a modern-era sign dating to the 2008-2010 renovations. It is green with an LED display. The sign is internally supported within three pointed shapes appearing as abstract leaves. This sign is a non-contributing object. A sign dating to the period of significance is located further south along Layton Boulevard. This sign is a silhouette of the dome shape formed in extruded anodized aluminum. Within the aluminum silhouette is a brown signage board with anodized aluminum letters. This sign sits atop a short dolomitic limestone plinth. This sign is considered a contributing object.

A sculpture, “Drift Bench,” is located between the south parking lot and the entry/circle drive. It was designed and built by University of Wisconsin-Milwaukee architecture students Adriana Arteaga, Ian Keanrs, and Blake Villwock. It was inspired by the topography of Wisconsin including snow drifts and sand embankments. Before its current location, the sculpture was displayed at the UW-Milwaukee School of Architecture, Mitchell International Airport, and the Discovery World museum. A Milwaukee organization called Artists Working in Education refurbished the sculpture and arranged for its permanent home in Mitchell Park. While it is a popular part of the Domes site, the sculpture is not substantial enough to be counted as one of the contributing or non-contributing resources on the property.[6]

[6] Laura Thompson, “The Spirit of the Drift Bench,” Urban Milwaukee, September 15, 2015 < https://urbanmilwaukee.com/2015/09/15/the-spirit-of-the-drift-bench/>.

**Period of Significance**
The period of significance is 1964 to 1967. The Domes were completed in stages and opened to the public over a period of three years. The first of the three domes, the Show House, opened in 1964 for the first Christmas show in the new facility. First Lady Lady Bird Johnson dedicated the domes in 1965 in a grand opening celebration. The Tropical House opened in 1966 and the Arid House in 1967. Throughout this time, the earthworks, planting, and hardscapes of the site were installed. The period of significance includes all of these significant points of completion.

**Summary**
The Mitchell Park Domes are significant under Criteria C, for Architecture and Engineering. They are believed to be the first conoidal domes in the world and the only conoidal domes used to span a conservatory to this day. They are an engineering feat, a local architectural landmark, and represent a significant method of construction that was conceived as part of their design and engineering. Their height, signature beehive shape, and position overlooking the Menomonee Valley have made them one of Milwaukee's iconic structures.

Architect Donald Grieb won the commission for the Domes and proceeded to design not only a building, but an entirely new structural system. He sought to develop a dome that could accommodate taller mature plants within a limited circumference. He was awarded a patent for his dome construction design. He collaborated with engineers and horticulturalists to develop an integrated structural and environment management system, as well as establishing new systems for access to accomplish maintenance and repairs. He tackled water management issues of interior condensation and exterior water and snow drainage. He established a site plan that was respectful of the original axis along which the previous pedestrian-centric horticultural conservatory had been organized while also addressing the street and surrounding context in an age dominated by the automobile.

The design of the Domes is influenced by Mid-Century Modern architectural styles popular at the time it was built, especially New Formalism and Neo-Expressionism. These influences are present especially in the front plaza and Entrance Pavilion, as well as other details throughout. The domes themselves are the product new experiments within the architecture and engineering communities of tensile and compressive forces that allowed architects like Buckminster Fuller and Grieb to cover large interior spaces with relatively minimal structure and no interior columns. Engineers of the era were also making valuable contributions to architecture by increasing the possibilities for concrete. The Domes certainly benefitted from these experiments, using precast concrete to form the Entrance Pavilion arches, the stone-aggregate cladding, and the substructure of the domes.

**Historical Context – Milwaukee's Parks and Mitchell Park**
The City of Milwaukee is located along Lake Michigan at the confluence of the Milwaukee, Menomonee, and Kinnickinnic Rivers. The first mention of a community at this location was during the visit of Father Zenobrius Membre to Fox and Mascouten tribes at what is now Jones Island near the mouth of the Milwaukee River. The native population of the area grew in subsequent years, including Potawatomi, Sauk, Ottawa, Chippewa, and Menominee groups. Settlers of European .[7] Settlers of European descent initially used the area as a seasonal trading post during winter months when conditions further north were too harsh. Increase Lapham reported thirty or forty wigwams on the current site of Mitchell Park, overlooking the Menomonee Valley. The natural hill made the site a good settlement location.

[7] John Gurda, *The Making of Milwaukee* (Milwaukee: Milwaukee County Historical Society, 1999), 7.

As early settlement of the United States pushed west, land was forcibly taken from native peoples, many of whom were relocated to Iowa and Kansas. The early settlements that became Milwaukee were founded in the 1830s by Solomon Juneau (Juneautown, with business partner Morgan Martin), Byron Kilbourn (Kilbourntown), and George Walker (Walker's Point). Each claimed a piece of land and began settlements around the rivers, drawn by the large bay and deep mouth of the Milwaukee River, the deepest on the western shore of Lake Michigan. Although the settlement's growth was driven by commerce, political, religious, and cultural institutions quickly followed. The Town of Milwaukee was officially established in 1839 when Juneautown and Kilbourntown combined. Walker's Point was incorporated in 1845.[8] One of the first white settlers in Milwaukee, Jacques Vieau, built a cabin on the hill in present Mitchell Park and turned it into a trading post in 1795. Vieau's daughter Josette, whose mother was of Menomonee descent, became the wife of Solomon Juneau, Milwaukee's first mayor.[9]

Boosted by an influx of European immigrants, Milwaukee's population more than doubled in the four years following incorporation. By 1860, it had doubled again. After the Civil War, the trend increased, encouraged by industrial development. The economy was growing at an astounding rate. In the twenty years following incorporation, Milwaukee became Wisconsin's center of commerce. The railroad, new regional roads, and the harbor made Milwaukee a trade hub for many products, most notably wheat from the Wisconsin countryside. It was the greatest shipper of wheat on earth by 1865 and one of the top twenty cities in America in the trade of a wide range of other products.[10]

[Add brief info about the history of the greater Mitchell Park neighborhood for final draft]

By the 1880s, bolstered by trade and the rapid growth of industry and manufacturing, prosperity grew along with population. Opportunities for leisure became more common among working class individuals. The demand for theaters, concert halls, parks and other places of recreation was growing. On June 18, 1889, the first Board of Park Commissioners in the City of Milwaukee met to discuss purchasing land for a system of public parks. By 1890, five park locations had been chosen: Kosciuszko and Humboldt to the south, Lake and Riverside to the north, and Mitchell to the southwest. The park was named for the Mitchell family who sold twenty-five acres to the board in 1891 and donated five additional acres two years later. The sale and donation were executed by U.S. Senator John L. Mitchell, son of a railroad tycoon Alexander Mitchell. Twenty-eight acres were purchased from prominent Milwaukee resident John Burnham in 1900. The remaining acreage was provided by the Milwaukee Southern Railway Company which managed the tracks north of the site. Henry C. Koch (Milwaukee City Hall (NRHP 1973), Gesu Church, Pfister Hotel), was commissioned to design the park and, in 1898, a horticultural conservatory.[11] [12]

The first major component of Mitchell Park was a pond for the purposes of recreational boating (extant). Beginning in 1892, rowboat rentals proved to be so lucrative that the pond size was doubled and an island created in the center. In 1904, after the conservatory was built, a sunken garden and reflecting pool were built in the style of fifteenth- and sixteenth-century French parterre. A boathouse was built in 1906 near the reflecting pool, and additional gardens were added. In 1910, the Old Settlers' Club replicated the original Vieau cabin on its Mitchell Park site (burned 1949). Between 1911 and

[8] Gurda, *The Making of Milwaukee*, 49.
[9] Urban Anthropology Inc., "Milwaukee Neighborhoods: Mitchell Park," accessed June 6, 2019 < http://www.neighborhoodsinmilwaukee.org/Mitchell%20Park.pdf>
[10] Gurda, *The Making of Milwaukee*, 103.
[11] Urban Anthropology Inc., Milwaukee Neighborhoods: Mitchell Park, accessed June 6 2019 < http://www.neighborhoodsinmilwaukee.org/Mitchell%20Park.pdf>
[12] Milwaukee County Park Commission, "Milwaukee County/Mitchell Park Horticultural Conservatory," (Milwaukee: E. F. Schmidt Company, undated), 24.

1916, tennis courts, a baseball field and a toboggan slide were added. In the 1950s, near the same period as the Domes project planning and construction, the park received other new facilities and improvements, including a pavilion overlooking the pond, concert stage, wading pool, and playground. Electrical lighting was installed in 1937, allowing the conservatory to remain open to the public in the evenings.[13] [14]

The Wisconsin state legislature established the Milwaukee County Parks Commission in 1907. Mitchell Park management was transferred to this commission at that time, with ownership of the park land transferring during the Great Depression.[15]

In the period following World War II, the original conservatory's visitor numbers continued to rise as the building fell into disrepair. In 1949, the Parks Commission had directed the County's Regional Planning Department to pursue plans for a new conservatory to be used for cost estimating. Staff traveled to conservatories in other cities but ultimately no plans were produced. By 1954 Alfred L. Boerner, county parks manager, began pursuing options for repair or replacement of the structure. He cited frequent glass breakage in high winds and disintegration of building material due to corrosion and age. Wood rot and rust had made the building vulnerable to moisture and the interior climate impossible to control. Boerner was forward-thinking. He felt the new conservatory should be a state-of-the-art structure, using cutting edge modern materials like glass, aluminum, and concrete. Unlike the existing structure, which relied heavily on shows and displayed smaller-scale flowers and plants grouped by type into small greenhouses (roses, ferns, orchids, etc.), Boerner envisioned a facility that would house large-scale exotic landscapes grouped by regions or climate, with plants unlike anything Milwaukeeans could see in Wisconsin. In addition to the conservatory spaces, Boerner felt the new facility should include educational and service facilities such as a café or concessioner.[16]

The original conservatory closed permanently in July of 1955, with officials citing deterioration to the extent that the structure posed a hazard to visitors. Howard E. Gregg, a Milwaukee landscape architect in favor of the closure said, "When it rains, more water falls inside than outside." The west section of the building required special temporary bracing to be erected whenever wind storms were predicted. It was announced that the conservatory would be razed, and the promise was made to build a new structure once funds could be procured. Other greenhouses in the park which were not open to the public were used to store flowers and displays until the new facility was constructed.[17] The County Board of Supervisors was asked to allocate a million dollars towards a new facility. Aldermen began arguing for possible new locations that would benefit their districts, and a public movement began to keep the conservatory in Mitchell Park. Ultimately, an architect was chosen and planning begun, with the supporters of Mitchell Park succeeding in retaining the facility.[18] See the following section for information on the planning and construction of the Mitchell Park Domes.

**Mitchell Park Domes History**
Planning for the new horticultural conservatory began in earnest in 1957. As many as thirty architectural firms submitted proposals for the proposed million dollar horticultural conservatory. The Park Commission narrowed the list down to three firms: Eschweiler & Eschweiler, Schutte Phillips & Mochon, Inc., and Donald L. Grieb, Architect. The finalists were unified in their belief that the new structure should be a free-span space of contemporary materials such as aluminum, glass, and concrete. Grieb was the only architect who presented concepts and examples of his work. He was awarded the

[13] "Mitchell Park," (excerpt), Milwaukee Public Library clippings files, Mitchell Park 1950-1954.
[14] Elizabeth Wiza for the Milwaukee Preservation Alliance, "Nomination Questionnaire: Mitchell Park," March 28, 2016.
[15] Urban Anthropology Inc., Milwaukee Neighborhoods: Mitchell Park, accessed June 6 2019 < http://www.neighborhoodsinmilwaukee.org/Mitchell%20Park.pdf>
[16] "Danger Seen to Greenhouse," *Milwaukee Journal*, April 17, 1954.
[17] "County Votes to Close Mitchell Conservatory," *Milwaukee Journal*, July 9, 1955.
[18] "Lock Conservatory at Mitchell Park," *The Times* (Milwaukee), July 14, 1955.

commission. At the time, Grieb's other commissions included the Saxony Restaurant and the Glendale, Wisconsin municipal building.[19] The commission also hired Stanley C. Foll, a florist and University of Wisconsin researcher who studied means and methods for growing plants under glass. Foll was intended to assist Grieb in ensuring that the design accounted for proper temperature, lighting, and ventilation.[20]

In June 1958, Grieb's plans were submitted and approved by the County Park Commission. A model showed three large glass hemispheres and a smaller domed transition house to be constructed of reinforced concrete and tempered glass. A fourth dome was also proposed to house temperate climate plants and a horticultural hall but was postponed for a later phase of the work and never completed. Grieb's initial design was to be 140-foot diameter domes (the same as the current domes) rising 65 feet tall and composed of uniform hexagonal sections (These were later changed to Grieb's patented conoidal domes, as described in the following section.) Other elements of the final design were present in the initial concept as well. Grieb included the nine white granite and concrete arches with gold anodized aluminum grills and infilled with high glass walls, the 60-foot plaza and reflecting pool (the initial shape differed from the final design), and a large connecting foyer (see Figure X).[21] A month later, a more elaborate five-dome plan was approved to be constructed in two phases. It was expected to be completed in two phases over two years and cost 2.4 million dollars. The first two domes were approved to begin construction documents and bidding. The Milwaukee Sentinel called the five-dome plan "an ultra-modern Eskimo village."[22] By September of that year, the plan was reduced back to three main domes plus the transition house, more in keeping with Grieb's first proposal.

The Domes project was immediately beleaguered with budget difficulties. Problems came from within, over disputes between county officials, tax levies, and other public funding stressors. County supervisors cut a 1.8 million dollar request for the conservatory from the 1959 budget, elevating tensions. $400,000 in bonds were allocated to be sold in support of the Domes, but due to miscommunications and budget fights the bonds were never sold. Problems also came from outside county government, with the projected cost of the project up eleven percent before breaking ground. The cost increase was due to a plan to construct the building in stages, which would lengthen the construction period and increase the architect's, contractor's and tradespeople's fees. The stages would allow funding to occur more slowly, but increase the overall cost of the project. Finger-pointing started in earnest, with the assistant general manager of parks stating that the architect and park staff had no educated estimate of costs and had grossly underestimated costs for the ambitious design. A two-stage plan was accepted, with final completion expected by 1961. The first stage would be the Show House, Transition House, Air Lock, Boiler Room, and Arid House. The Tropical House, Lobby, and entrance plaza would be constructed in the second stage. Landscaping would occur after final completion of the Domes themselves.[23] Even this plan proved to be overly ambitious. The Show House did not open until December 12, 1964 with a featured Christmas show. First Lady Lady Bird Johnson dedicated the Mitchell Park Domes in October 1965 (see Figure 6). The Tropical and Arid Houses were constructed but still receiving planting and landscaping. The Tropical House did not open until January 1966, providing a long-promised respite from the Wisconsin winter. The opening of the third dome, the Arid House, was delayed nearly a year due to delays constructing the man-made rock formations and the difficulty of shipping cold-sensitive plants during winter months. It finally opened in November of 1967. The final project was millions of dollars over the initial budget estimate and six years behind schedule. Two stages stretched into seven.[24]

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[19] "3 Architects Interviewed on Conservatory," *Milwaukee Sentinel*, May 25, 1957.
[20] "County Blazes New Trail in Conservatory," *Milwaukee Sentinel*, March 1, 1958.
[21] "Plan Dome House Conservatory," *Milwaukee Journal,* June 20, 1958.
[22] "2 Conservatory Glass Domes OKd," *Milwaukee Sentinel,* July 20, 1958.
[23] "Conservatory Cost 'In Stages' Up 11%," *Milwaukee Sentinel,* August 7, 1958.
[24] Various Milwaukee Journal and Milwaukee Sentinel clippings, County Government Clipping File, Milwaukee County Historical Society, microfilm box 182.

Regardless of the financial woes and growing discontent between the designer, construction teams, and county government, the Mitchell Park Domes were an instant success. The conservatory drew more than 14,000 visitors its first weekend with only one dome completed. Over 155,000 visitors attended the first Domes Christmas show, more than half the average attendance the previous conservatory drew in an entire calendar year. Traffic jams on South Layton Boulevard were a constant problem, with park officials finally appealing to the County Board to provide six part-time parking lot attendants to help facilitate traffic flow. By May of 1965, after six months with only one dome open to the public, conservatory attendance had doubled the previous facility's annual average attendance and nearly reached the all-time high for a twelve-month period. It surpassed that high by 100,00 people in August of 1965 with attendance figures of 872,692. The visitor count for the first weekend of the 1965 Christmas show was 29,000 people, more than 5,000 more than the opening weekend the previous year. The Show House was still the only dome open to the public. When the Tropical House opened in January 1966, it drew 14,492 visitors in its first weekend. The Domes became such a popular place for wedding photos that the Park Commission periodically imposed bans on wedding photography during busy weekends and shows as early as 1968. In 1970, the Domes and the Milwaukee County Zoo began charging admission. Admission to the Domes was initially 25 cents, resulting in initial attendance figures down seventy-five percent when compared to the same weekend the previous year. Despite the drop in numbers and the cost of maintaining ticketing staff, the county projected admissions would amount to more than $200,000 in revenue.[25]

**Statement of Significance - Architecture**

*Large-Span/Glass Dome Structures*

In 1951, architect, inventor, philosopher, and engineer R. Buckminster Fuller filed a patent application for his geodesic dome, a concept that had become the primary focus of his career since his first experiments with it in 1947. While precedents existed for Fuller's design, he popularized the geodesic dome structure and envisioned a wide range of applications, including a large dome spanning over the entirety of Manhattan and, more practically, for growing plants under glass. Fuller envisioned a dome that was lightweight, easily assembled of cost-effective materials, and able to enclose more free-span or uninterrupted space than any other known structural system. Fuller's dome relied on the balance of compression and tension among individual structural members, resulting in a structure that was resistant to settling and capable of withstanding shear forces in addition to being self-supporting. Fuller's first commercial dome commission was at the Ford Motor Company headquarters (Dearborn, Michigan). The U.S. Military hired him to design lightweight domes to cover radar stations around the Arctic Circle, pleased that the domes could be reasonably constructed in remote areas and also weather-resistant. The Buckminster Fuller Institute estimates that there are more than 300,000 geodesic domes around the world ranging from utilitarian children's play structures to large roofs over stadiums and arenas.[26] Built in 1960, the Climatron® at the Missouri Botanical Gardens was the first conservatory to use the geodesic dome to cover a large planted area. The conservatory is 175 feet in diameter and rises 70 feet at the central apex.[27]

Mitchell Park Domes architect Donald L. Grieb was inspired by the geodesic dome, which used an alternating grid of hexagons and pentagons to free-span an enormous space. Grieb initially reached out to Fuller's team about collaborating on the Domes; he was turned down. Grieb wanted to create the same transparent but protected environment as Fuller's geodesic dome for the Mitchell Park Domes. Grieb's site plan was designed to maximize sunlight for each dome's designated climate, with the hottest Tropical House on the south side and the most temperate Show House on the north

[25] County Government Clipping File, Milwaukee County Historical Society, microfilm box 182.

[26] The Estate of Buckminster Fuller, "About Fuller," Buckminster Fuller Institute, accessed June 7, 2019 < https://www.bfi.org/about-fuller/biography>

[27] "Climatron," Missouri Botanical Garden, accessed June 7, 2019 < https://www.missouribotanicalgarden.org/gardens-gardening/our-garden/gardens-conservatories/conservatories/climatron.aspx>

side. However the Domes site, hemmed in by the beloved Sunken Gardens to the south and the railroad to the north, would prevent the construction of a geodesic dome of sufficient height. The maximum diameter Grieb thought feasible was 140 feet, resulting in a maximum hemispherical dome height of 70 feet (or one-half the diameter). It was the opinion of Grieb and his team that this was not a sufficient height for mature plants. Grieb was also planning for four full-sized domes (the Temperate House was never built), further constricting the available space. Grieb also worried that the relatively flat apex of geodesic domes would not properly drain snow, causing structural and light problems. Practical concerns mixed with Grieb's strong independent streak lead him to develop the conoidal, or cone-shaped, dome.[28]

Grieb's conoidal domes borrowed Fuller's geometric system but utilized varying shapes (hexagons, then diamonds, then triangles) to elongate the domes as they extended upwards. The result was a height at the apex of 87 feet, seventeen feet higher than a geodesic dome of comparable circumference. Grieb set a goal of eighty-percent transparency, with twenty percent remaining for structural members. He constructed an eighteen-inch diameter plastic bubble in the approximate shape he desired and set about identifying the tessellated pattern using paper and scotch tape. He struggled to generate a sensical pattern of repeated sizes for each panel. In addition to his paper-and-tape experiments, he studied glass weights and uniform sizes. According to his own account, Grieb awoke in the middle of the night having dreamt of a flower-like pattern of geometric forms, three hexagons, two diamonds, and one triangle composing an orange-peel shaped section, joined at a central ring as the center of the flower. Twenty-five of these "peels" would form a conoidal form. Grieb had managed to implement Fuller's idea of repetitive shapes, intended to reduce supply and fabrication costs, and combine it with an altered geometry to establish a conoidal form.[29] From the initial concept, Grieb went on to develop every aspect of the conoidal construction, from precast concrete framework to glass and aluminum skin, to moisture control, cleaning and maintenance. Grieb was awarded a patent for his dome system design in 1965 ("Dome Building Construction," U.S. Patent # 3,192,668).

For the web-like structural framework, Grieb selected reinforced concrete. The possibilities of concrete were being expanded every year in new mid-century structures, and Grieb took advantage of the newly expressive possibilities for the material. Thanks to recent advancements, concrete formwork in any shape was becoming more economical. He felt concrete would be more resistive to moisture and insecticides that were inevitable in the finished buildings. Additionally, elements could be precast and assembled onsite with minimal additional cutting or adjustments. In practice, the fabrication of the precast pieces (the largest nearly eighteen feet across) was complex. The curvature of the domes was different in the horizontal direction than the vertical direction, which prevented large pieces from being fabricated without consideration for the direction the piece would be installed (as was possible with geodesic domes). Grieb collaborated with W. John Hufschmidt of the Hufschmidt Engineering Company to devise a system of molds from master plaster of paris patterns. This would ensure uniformity of components and significantly reduce fabrication time. Hufschmidt Engineering Company handled the detailing, forming, precast work, and erecting. A temporary "falsework" of eight-inch pipe and I-beams was erected under each domes to support the concrete structure as it was being constructed. The final position of each prefabricated unit was tested before it was set by using a heavy plumb bob to measure the distance out from the center point of the dome and the height above the floor. The unit's position was adjusted as-needed using bolts on the steel stools attached to the falsework. Once the concrete was in place up to the apex ring, the falsework was removed. Over 100 tons of

[28] Milwaukee County Park Commission, "Milwaukee County/Mitchell Park Horticultural Conservatory," (Milwaukee: E. F. Schmidt Company, undated), 24.

[29] Milwaukee County Park Commission, "Milwaukee County/Mitchell Park Horticultural Conservatory," (Milwaukee: E. F. Schmidt Company, undated), 7-9.

steel was used to construct the falsework, none of which remains in the final completed work.[30] [31]See Figure 7 [Dome falsework and concrete assembly].

Grieb was his own structural designer, consulting with Charles Whitney of Ammann & Whitney, Inc. In an article in Milwaukee Engineering from May 1961, Ammann & Whitney Chief Engineer Robert Hopwood describes the complex engineering task: "The principle stresses in a dome are compression along the meridians and either compression or tension along the horizontal circles. The first step was to find what patterns of members were suitable to carry the resolved stresses and maintain stability in the structure. These patterns with discussed with the architect [so he could make a final choice]."[32]

Super Sky Products, Inc. based in Thiensville, Wisconsin, was the sole bidder for the glass skin. They designed, fabricated, and erected the aluminum and glass system in collaboration with Grieb. The design and engineering of the system took nearly three years. A shed was constructed on site for the assembly and preglazing of large sections of curtainwall panels which were then lifted into place with cranes and installed from the interior by workers on scaffolding. Crews pre-measured and punched marks in the precast frame for insertion of the panels. Stainless steel supports on the glazed units, were then arc-welded to steel plates embedded in the concrete.[33]

A ball-and-socket system, which Grieb referred to as "hubs," allows the glass and aluminum skin to float off of the concrete substructure and serves as a condensation collection point. Given the relative warmth and humidity of the indoor environment, often contrasted to much colder, drier outside air, Grieb showed foresight in attempting to deal with the inevitable condensation. Collecting condensation is critical to preventing standing moisture on the concrete as well as preventing interior rain from falling on the heads of unsuspecting visitors. The balls in the hubs transmitted condensation to tubes which carried excess moisture to the base of the domes and eventually into the storm water management system.

The top of each dome is capped with an independently structured dome that Grieb called the "apex." Each apex is a single prefabricated section crane-lifted into place. The apex weighs three tons, is thirty-seven feet in diameter, and is self-supported, bearing on the concrete ring at the top of the conoidal shape. The apex has a stainless steel rib structure extending out from the center vent. It is clad in a similar aluminum and glass skylight. The center of the apex is clad in two-inch-thick opaque aluminum panels which help support the exterior catwalk.[34]

Those charged with maintaining the Domes are not surprised to find that the system is experimental and the first-of-its kind. Maintaining and repairing the Domes is often a dual problem of access and assets. The custom components are expensive to repair. The structural system is failing due to deferred maintenance, made more difficult by the failure of built-in maintenance systems and equipment. Despite the elaborate system of transferring condensation through the structure, excess moisture has caused concrete to crack and spall. The difficulty of reaching structural members to recoat the concrete with protective coatings has prevented this critical maintenance task from occurring, exacerbating conditions. Grieb is not the first architect to design a masterpiece that is problematic to maintain. Over time, Milwaukee County Parks

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[30] Milwaukee County Park Commission, "Milwaukee County/Mitchell Park Horticultural Conservatory," (Milwaukee: E. F. Schmidt Company, undated), 9-12.
[31] "World's First Space Frames Rise in Milwaukee," reprint from *Milwaukee Engineering*, May 1961, 4.
[32] "World's First Space Frames Rise in Milwaukee," reprint from *Milwaukee Engineering*, May 1961, 2.
[33] Milwaukee County Park Commission, "Milwaukee County/Mitchell Park Horticultural Conservatory," (Milwaukee: E. F. Schmidt Company, undated), 13-15.
[34] Milwaukee County Park Commission, "Milwaukee County/Mitchell Park Horticultural Conservatory," (Milwaukee: E. F. Schmidt Company, undated), 16-17.

have sought ways to improve failing systems while keeping with Grieb's design intent. The current interior mesh netting required to prevent falling concrete from injuring patrons is evidence that further innovation is necessary.

*National Reputation and Significance* [this section will be further developed if the team makes the decision to go for National Significace]
In the face of tremendous pressure and backed by a progressive and forward-thinking local government body, Grieb attempted to, as one publication put it, "adapt principles of design never tried before."[35] The American Concrete Institute's journal called it a "radical departure from the standard gable type roof design for greenhouses or horticultural exposition buildings."[36] The May 1961 edition of *Milwaukee Engineering* called the domes "unique in the world," and "the world's first space frame in the shape of a complex conoid." At the Mitchell Park Domes, Grieb pioneered a new structural system. He collaborated with engineers and fabricators to build that system. Ultimately, it was the first of its kind, building on existing webbed dome structures while solving issues unique to the site. While the geodesic dome was certainly adaptable for conservatory design, at the time Grieb began developing his conoidal structure the geodesic dome had not yet been used for a glass-roofed conservatory structure (the first was 1960). In terms of large span conservatory design, the two structural forms are contemporaries rather than one deriving from the other. Grieb was challenged with solving issues of glazing, construction, fabrication, and moisture regulation of a glass dome that was still in the process of being flushed out by Fuller, despite Fuller having developed the structural system almost a decade prior.

The Domes precede most other tensile domes in conservatory construction and remain unique among large-span domed structures. They are also unique for their intactness and relatively early adoption of the glass dome design concept using a space frame structural system. The Greater Des Moines Botanical Garden was constructed in 1979 and features a wider, flatter dome (80 feet tall by 150 feet wide). The Bloedel Conservatory in Vancouver, British Columbia, Canada also utilizes varying frame shapes for its triodetic dome. The result, however, is a dome that is wider and flatter, in contrast to the taller coinoidal dome. The acrylic panels that once clad the Bloedel dome have been replaced. The Plexiglas at Missouri's Climatron® has been replaced with modern-era glass. Buckminster Fuller's own significant glass-clad dome of the era, the U.S. Pavilion for Expo 67, the World Fair in Montreal, is composed of a double layer of structural supports connected by a latticework of struts and post-dates the Mitchell Park Domes. The Black River Waste Water Treatment Plant in Baltimore, Maryland (also referred to as the Golden Eggs), has a more similar egg shape but is not glazed nor used as a conservatory.

The result of Grieb's design and ingenuity is an iconic building, highly evocative of its time while continuing to awe visitors in the present. On March 22, 2017, the Mitchell Park Domes were named a National Treasure by the National Trust for Historic Preservation. The difficulties with repairing and preserving the deteriorated structure also earned the building a place on the National Trust's 2016 list of "America's 11 Most Endangered Historic Places." The National Treasure designation is the most recent of many local and national recognitions the innovative domed construction has received. The Cultural Landscape Foundation, in the same press release as the National Treasure announcement, compared the Domes to the St. Louis Arch as a similarly noteworthy mid-century structure.[37]

*Mid-Century Modern Style* [Incorporate additional information from WHS resources when available in final draft]

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[35] "The New Horticultural Conservatory in Mitchell Park," *Journal of the American Institute of Park Executives, Inc.*, September 1965, 486-503.
[36] W. John Hufschmit, "Precast Complex Conoidal Horticultural Domes," *American Concrete Institute Journal Proceedings*, November 1961, 543-554.
[37] National Trust for Historic Preservation, "Nation's Leading Historic Preservation Organization Names the 'Milwaukee Domes' a National Treasure," Press Release, March 22, 2017.

The style of the Domes is heavily influenced by the structural system of the domes themselves and therefore difficult to classify. The engineering feat of the domes is on full display and supersedes any style classification. The extant entrance pavilion, signage, circle drive and plaza features, colors, and interior finishes evoke elements of mid-twentieth century styles such as New Formalism (Philip Johnson's Amon Carter Museum, Fort Worth, Texas, 1961) and Neo Expressionism (Eero Saarinen's Dulles International Airport, Chantilly, Virginia, 1960). Grieb also cited Organic Architecture as a precedent but tended to abstract organic inspiration into graphical shapes and lines to an extent that the organic inspiration was unreadable.

Buildings in the New Formalism Style tend to emulate the forms of past styles and precedents while streamlining and simplifying more ornate details. New Formalist buildings tend to be smooth (even glossy) with thick columnar supports with arches appearing in a variety of shapes made possible by concrete and steel (versus unit masonry). Often the arch is the primary motif, with dramatic full-height arches on the front façade or an arcade surrounding the building. Where ornament is utilized, it takes the form of metal screens, cast stone, grills, and concrete with or without apertures. Philip Johnson began experimenting with the style using classical precedents as early as the 1950s, when he blended elements of New Formalism into Miesian-inspired works. Johnson often adopted the plans of Neo-Classical designs for his New Formalism projects. His theater complex at Lincoln Center, with its central plaza, was based on the Louvre in Paris. Edward D. Stone and Minoru Yamasaki also furthered New Formalism in their work, choosing a more eclectic mix of inspirations than Johnson and pushing the boundaries further. Stone's New Dehli embassy made perforated concrete screens a signature mid-century building feature while Yamasaki's metal screens and Gothic-inspired designs inspired many similar screened elements on smaller-scale projects in downtowns and commercial centers. New Formalism appealed to mid-century ideals that celebrated a growing affluence among the larger U.S. population (even if materials only looked expensive) and sought to restyle classic, culturally-significant forms in the futuristic optimism of a post-war world.[38]

Domes architect Donald Grieb designed many New Formalist buildings in Milwaukee. The Milwaukee Road downtown train depot was a fine example of his New Formalist work (remodeled and façade replaced 2007). New Formalism is present at the Domes especially in the Entrance Pavilion, where the classical arcade has been extracted and extruded into the precast concrete arches. The design of the entrance plaza and reflecting pools also evokes a classical entrance sequence. The domes themselves represent a modern take on the glazed conservatories like the one it replaced. Ribbed instead of tessellated, these nineteenth century structures also attempted to maximize light by using the full width between structural members for class.

Neo-Expressionism eschews typical rectilinear geometry from sweeping curved rooflines to canted columns and details. Arches and vaults are frequently utilized, as long as the arch does not take the form of a semicircle or barrel vault. The semicircle was grouped with other "static" forms lacking the dynamism and movement Neo-Expressionists sought. Other hallmarks of Neo-Expressionism include convex, concave, and faceted surfaces and leaning structural columns and piers. Neo-Expressionism eschews the adoption or adaption of forms, preferring instead to derive form from the program with room for wide interpretation by the architect. Neo-Expressionism was not simply about sweeping geometry, but to express the program (that is, the building's use) in its overall form. In practice, this philosophy manifests in a wide variety of forms. Eero Saarinen, who trained as a sculptor and an architect and was a leader of the Neo-Expressionist movement, designed his TWA Terminal at Kennedy Airport to express the idea of flight experienced through liberty from gravity and continuous movement. Like Saarinen, many architects in the movement were sculptors or inspired by sculptors, while others were engineers or inspired by engineers. Neo-Expressionist structures often required a significant understanding of engineering or collaboration with engineers to manipulate building materials, especially concrete, into new and more expressive forms. Engineers contributed concrete shell vaults and the catenary curved suspended steel-cable roof. An

[38] Marcus Whiffen, *American Architecture Since 1780, A Guide to the Styles* (Massachusetts Institute of Technology, 1992), 261-266.

existing technology that Neo-Expressionists pushed to greater limits was the spraying of concrete (gunite) over a metal armature.[39]

The Domes are Grieb's work with the most Neo-Expressionist elements. The merger of engineering and function/program that drove the architectural expression of the three main domes shares many sensibilities with Neo-Expressionism. The elongated conoidal arch, which is nearly a catenary curve in profile, and the innovative use of reinforced concrete throughout also evoke Neo-Expressionist ideals.

Organic Architecture promotes harmony between the natural world and the impact of the built environment upon that world. Frank Lloyd Wright used the term 'organic architecture' in an article for Architectural Record in August 1914. While Grieb cited many organic inspirations for the domes (i.e. the flower-like arrangement of the dome geometry described in the previous section) the forms themselves are far removed from their organic inspiration and distinct, rather than integrated into the landscape. The incorporation of large smooth river rock in the exterior concrete panels and the natural environments in the Domes themselves are the strongest links to Organic Architecture.

*Architect Donald L. Grieb*
Donald Leon Grieb was born September 24, 1918 in Milwaukee to Leon Grieb, a builder, and Lulu Grieb. He wanted to be an architect from a young age. He earned his architecture degree from the University of Illinois and returned to Milwaukee to practice. He worked as a designer for Eschweiler & Eschweiler from 1945-46, with Fritz Von Grossman from 1949-1952 (briefly as a partner), and then with Brust & Brust during 1952 before founding his own firm. He intentionally avoided partnership opportunities, desiring to be the sole name on the letterhead. He won the American Academy of Rome award in architecture in 1941 and received the Joseph Horn fellowship to the University of Pennsylvania in 1942 on the basis of work done as a student at the University of Illinois where he graduated with honors. He served during World War II as a first lieutenant in the U.S.A. Air Force from 1942-1945. [40] [41] [42]

Grieb was an important mid-century architect in Milwaukee with a diminishing extant portfolio. Prior to the Domes he designed the Glendale Municipal Building (a north Milwaukee suburb, building partially demolished) and participated in design for the Milwaukee Arena, Marquette University's Memorial Union, and the 95th Street School.[43] His work on the Domes led to many other public commissions, many of which have been razed or dramatically altered. He designed a large annex to the Milwaukee County Courthouse featuring the "Whaling Wall" mural overhanging 1-43 (razed), a plaza and clock tower at MacArthur Square (clock tower razed), and a number of local school and commercial buildings including the Whitefish Bay State Bank (Milwaukee) and the Green Tree Elementary School (Glendale). He often used futuristic curves and arches in his Mid-Century Modern designs. Grieb's design for the downtown train depot was supposed to usher in a Union Station environment. It replaced a historic Milwaukee Road depot, an unfortunate turn that did not ingratiate him with preservationists. When Grieb's train station was completely transformed by a façade renovation in 2007, it occurred with little protest. He received an AIA honor award for his work at the Mitchell Park Domes.[44]

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[39] Whiffen, *American Architecture Since 1780*, 273-278.
[40] "Donald Grieb to Design Park Conservatory," *Milwaukee Sentinel*, June 15, 1957.
[41] Rick Barrett, "Architect who designed Milwaukee landmark the Domes has died at age 99," Milwaukee Journal Sentinel, March 17, 2018.
[42] "Grieb, Donald," AIA Directory, various years 1956-1972.
[43] "Donald Grieb to Design Park Conservatory," *Milwaukee Sentinel*, June 15, 1957.
[44] "Grieb, Donald," AIA Directory, various years 1956-1972.

Grieb bore similarities to R. Buckminster Fuller beyond experimenting with dome design. He sought answers to problems he perceived in the built environment, experimenting with plastic and Styrofoam-like homes and advocating for affordable design. His son recalls him waking up at 4 a.m. to experiment with toothpicks and balsa wood. He somewhat strangely advocated for an area of downtown Milwaukee to be completely reimagined in the pattern of a Copenhagen's Tivoli Gardens, a nineteenth century amusement park. Minneapolis architect Vincent James, a contemporary of Grieb, called him "a self-styled visionary, as idealistic as he was idiosyncratic… the Jetsons would have loved some of his buildings."

Later in life, he relocated to Houston. He died February 25, 2018. His family requested that donations be sent to Friends of the Domes, a private non-profit that supports educational, scientific, and cultural programs held at the Mitchell Park Domes, a final nod to his greatest architectural achievement.[45]

**Conclusion**

The Mitchell Park Domes represent a significant method of construction that resulted in an architectural and engineering icon. Grieb's fully integrated dome construction system incorporates drainage, structure, glazing, stiffening, and access for repairs and maintenance. It is the first and only dome system of its kind used in a conservatory. It represents an architect's vision that is intricately tied to use, that considers unique requirements for plants and visitors, and that seeks to achieve a complex mix of programmatic elements and site considerations through an architectural form that evokes the architecture of the time while imagining the possibilities of the future. [expand conclusion based on additional research findings for final draft]

[45] Rick Barrett, "Architect who designed Milwaukee landmark the Domes has died at age 99," Milwaukee Journal Sentinel, March 17, 2018.

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**United States Department of the Interior**
National Park Service

# National Register of Historic Places
**Continuation Sheet**

Section **10** Page 1

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**Verbal Boundary Description:**
Beginning at the east curb line of South Layton Boulevard at the intersection with West Pierce Street, continue north along the curb line until the north side of the Mitchell Park Horticultural Conservatory Entrance Drive. Cross the drive and continue east along the drive, crossing the first park road to the north and continuing along the curving east curb of the park road, which goes north, northeast, and then east. Continue east until the fence at the north loading and service area begins. Follow the fence line east until it turns south. Continue south along the fence. At the southeast corner of the fence, continue straight south to the north curb line of West Pierce Street. Follow the curb west to the starting point at the intersection with South Layton Boulevard.

**Boundary Justification:**
The boundary of the Mitchell Park Domes includes the Domes complex (contributing buildings and objects and non-contributing objects) as well as parking areas and the south lawn where the sunken garden was located (removed 1994). Due to its setting within a park, which shares management of the Domes, a combination of historical boundaries/site features and existing fences/curbs is utilized to define the present boundary. The Domes and the Greenhouse Complex are located at the northeast corner within the site boundary. The fences that delineate the service areas of these buildings form a clear boundary from the rest of the park, which is programmatically separated from the Mitchell Park Domes.

The south dome, the Tropical House, is aligned with its center on the north-south axis of the original sunken garden, which predates the Domes. The former horticultural conservatory used to be aligned on this axis as the main focal point at the north end. When the Domes were built, they were designed to have the Tropical House be the main focal point. Their design and siting was directly related to the location of the sunken garden. Although the garden has been razed, the sunken depression remains in the landscape. The remnant of this garden and the relationship of it to the siting of the current building are considered part of the defining landscape characteristics. As a result, this land is included in the site boundary. The remaining area to the west includes the Domes parking lots and landscape features. There are no park facilities or functions occurring between the parking and the roads. The curb lines are used to form the south and west boundaries for simplicity and clarity.

**United States Department of the Interior**
National Park Service

## National Register of Historic Places
**Continuation Sheet**

Section **photos** Page 1

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Insert Photo Descriptions
[To be completed for final draft.]

End of Photo Descriptions

**United States Department of the Interior**
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## National Register of Historic Places
**Continuation Sheet**

Section **figures** Page 1

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[Figures referenced in text only included with this draft. Additional figures to be provided for final draft]


*Figure 1*
Site diagram of boundary (Google Earth) [DRAFT pending completed site plan to be submitted with final document]

**United States Department of the Interior**
National Park Service

# National Register of Historic Places
**Continuation Sheet**

Section **figures** Page 2

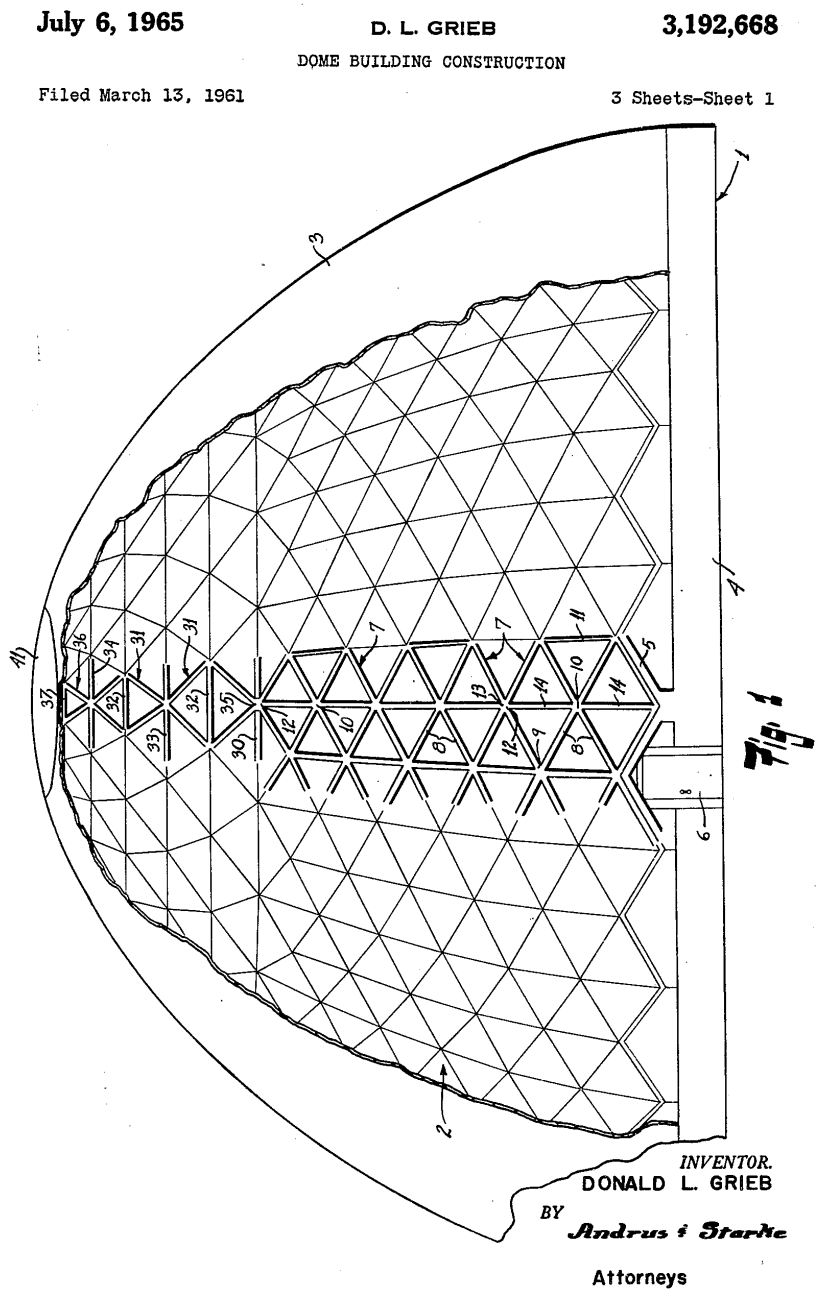


*Figure 2*
Diagram of dome structural shapes from U.S. Patent drawing (US3192668A)

*Figure 3*
Photograph of the apex installation at the top of a dome. (Milwaukee County Parks Historic Photograph Collection)

*Figure 4*
Photograph showing a pre-assembled glass panel being lifted into place. The hubs connect the glass to the concrete at designated points (dark squares). (Printed in Mitchell Park Horticultural Center guidebook ca. 1968)

*Figure 5*
Architect's model showing a concept with additional domes. (*Milwaukee Sentinel*, July 20, 1958)

*Figure 6*
First Lady Lady Bird Johnson speaking at the dedication of the Domes, October 1965. (Milwaukee County Parks Historic Photograph Collection)

*Figure 7*
Photograph of the falsework used to construct the Arid House. (Milwaukee County Parks Historic Photograph Collection)

DURKIN ASSOCIATES

To: Louise Stevens

From: Bill Durkin

Re: Private Fundraising Potential for Re-Envisioned Mitchell Park and Its Domes

Date: August 7, 2019

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This memo is intended to give The Domes Task Force an assessment of the potential to pursue private contributions as a component of multiple revenue streams collectively enabling a $66 million investment in one of Milwaukee's five original parks dating to the 19th century.

The assessment is based on a review of the draft report prepared by The Domes Task Force, a half-dozen interviews with individuals representing diverse viewpoints on Milwaukee's philanthropic community, and the experience our firm has gained over nearly 30 years of capital campaign experience having served more than 100 non-profit organizations.

Our report lists conclusions, recommendations, sequence of activities, expense projects, and interview findings.

## Conclusions

1. The *case for support* clearly meets threshold requirements for importance, relevance, and urgency assuming private contributions will be designated to support new Mitchell Park initiatives and activities rather than addressing deferred maintenance costs resulting from the absence of public investments over the years. In particular, access drives and the Welcome and Education Center appear to provide the *margin of excellence* private donors will find compelling.

2. Volunteer leadership will be the most important element in securing major gifts and candidates for those key positions have yet to be identified. Essentially, it will require experienced civic champions to tell the story in the face of vigorous competition among the 64 current capital appeals in Milwaukee.

3. Access to major gift donors could gain some early momentum as a couple of notable foundations with significant assets have adopted the Clarke Square and Muskego Way neighborhoods that are direct beneficiaries of a revitalized Mitchell Park.

Conclusions *continued…*

4. Internal capacity to sustain a $13.5 million campaign will need to be constructed with a cost ranging from 5 – 10 cents to raise a dollar – a figure including donor recognition. It is unclear whether this $600,000 – $1.3 million cost projection is included in the $66 million budget for the overall investment in Mitchell Park.

5. The campaign theme should emphasize Mitchell Park and its potential including the historic Domes and the revised educational program that will benefit from modernized horticultural programming. The alternative emphasis on the Domes themselves will likely raise concerns about whether they can be salvaged after highly publicized stories that they are in a state of deterioration including recommendations they should be demolished.

6. Questions need to be anticipated and addressed about the sustainability of high-quality educational programs attracting partnerships with recognized community assets. Major gift donors will expect to be able to anticipate the impact a re-envisioned Mitchell Park will have on the immediate neighborhood as well as the community as a whole.

7. The campaign story should identify recent investments in surrounding neighborhoods as well as future plans for the Menomonee River Valley and related anchor businesses and agencies. Donors are likely to have little firsthand knowledge of those issues beyond perceptions that it is a relatively poor area.

## Specific Conclusions

| | |
|---|---|
| Question One: | Is a written plan displaying full capital cost projections available to be reviewed by prospective donors in full, or in summary fashion within the context of presentations and proposals limited to non-repair gift requests? |
| Answer: | *Yes,* and such a detailed assessment will be an effective guide in the give-and-take of implementation. Over time, these projections can be increased with other capacity-building costs for a fully-articulated model scenario. |
| Question Two: | Does a campaign goal of $13.5 million correspond to the gift potential that exists within the base of annual fund appeals? |
| Answer: | *No*, the Friends Group raises small gifts and there is little record of larger gifts since renovations in 2009. This campaign represents significant and essential enhancements. |
| Question Three: | Can campaign leadership attract people who have access to major sources of support in Milwaukee? |
| Answer: | *Yes,* this has the potential for high impact and is relatively substantive compared to some current appeals -- $5 million to light the Hoan Bridge – that are simply cosmetic. |
| Question Four: | Are there significant candidates for donations at a magnitude satisfying higher levels of the Gift Pyramid? |
| Answer: | *Maybe,* although the Gift Pyramid in the draft report should be revised to fewer gifts of a larger amount. It may be the top 10 gifts are 90% of the $13 million. |

Specific Conclusions, *continued…*

| | |
|---|---|
| Question Five: | Does the planned organizational table reflect appropriate reporting relationships supporting a case in managing staff/volunteer partnerships so critical to major gift successes? |
| Answer: | *No*, it is not yet clear where the campaign Cabinet fits in terms of accountability and responsibilities. It is unlikely major civic leaders will want to join a new Board with as many as 30 representatives *and* be fully engaged in sponsoring a $13 million campaign. |
| Question Six: | Is there an inherent *will-to-win* fueling efforts to succeed in a capital campaign requiring more gift income than previous efforts? |
| Answer: | *Yes*, the task force membership, draft report, and persistence are powerful signs that, for the first time, a path forward is sketched. |
| Question Seven: | Is there the capability to develop strong and compelling support materials? |
| Answer: | *Yes*, the renderings give tangible and compelling reasons to take a further look. Endorsements, real-life stories, and quotes from leaders in philanthropy will be most meaningful, along with the next phase of conceptual images to be developed. |
| Question Eight: | Can a coherent donor recognition program be constructed in light of current obligations and requirements for approval by the County Board? |
| Answer: | *Hopefully*. It can be difficult to keep donors enthused when offers are tentative subject to vetting by a political body. |

Specific Conclusions, *continued…*

| | |
|---|---|
| Question Nine: | Are efforts to revitalize parks perceived as attracting leaders and donors who are well-recognized for their achievements? |
| Answer: | *Yes.* For one example, efforts to restore treasured statues in our parks have attracted favorable attention and lots of gifts over the years. The loss of quality parks has long been considered a potential catastrophe to our residents. |
| Question Ten: | Can the campaign expect to attract balanced commitments of support among foundations, individuals, and corporations? |
| Answer: | *Yes*, although the campaign is likely to attract a greater number of individual gifts while a significant portion of funds will be from foundations, including advised funds. |

## Recommendations

*October 2019 – January 2020*

1. Draft a *case statement* for private contributions based on the adopted report of The Domes Task Force.
2. Develop a roster of 6 – 8 candidates to serve as civic champions based on their place in the philanthropic community, a demonstrated interest in parks, and potential historic ties to this area of the city's southside.
3. Prepare a roster of qualified major gift prospects with gift ratings that exceed $25 million.
4. Identify candidates to serve as the fulltime campaign staff director with professional consulting resources available to be of assistance.

## Recommendations

*February – September 2020*

5. Recruit campaign leadership with a Cabinet of 8 – 12 individuals who among them will contribute the first $1 million.
6. Revise the *case statement* to reflect views and priorities of the volunteer leadership as well as donor recognition opportunities for major donors.
7. Submit 6 – 8 major grant requests to foundations that will make determinations by the end of 2020.
8. Rate and assign top 25 prospective donors for appeals in the next year.

## Recommendations

*October 2020 – Spring 2021*

9. Strive to have campaign reach $3.5 -- $4.5 million in contributions giving it a sense of inevitability for completion by 2022.

10. Hold a public event announcing the campaign expectations for furnishing the margin of excellence in the reemergence of Mitchell Park.

11. Incorporate Honorary Chairs into the Cabinet recognizing 7-figure donors whose reputations lend credibility to the campaign.

12. Approach next 25 highest-rated donors for consideration of major gifts.

## Recommendations

*Beginning summer 2021*

13. Pursue loans against pledges to enable construction to proceed when certain gift levels are reached.

14. Complete major gift appeals by Fall 2021 with pledge payments extending to 2025 or beyond.

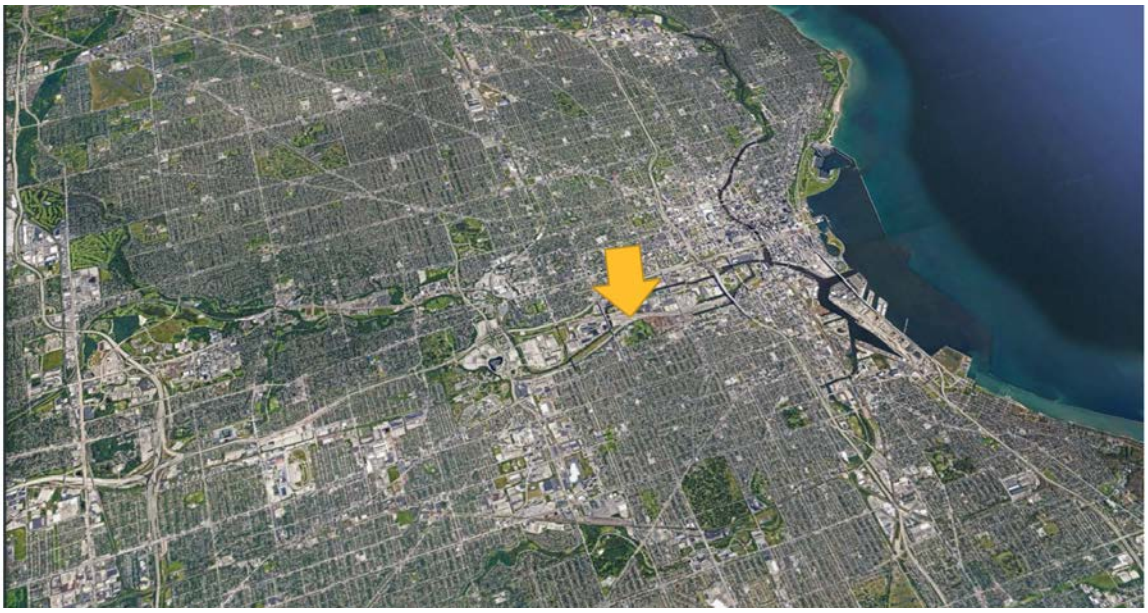
15. Gain necessary approvals for donor recognition awards in a Milwaukee County park.

16. Sponsor campaign completion event in the Welcome and Education Center.

## Findings

- Parks differentiate our community, giving it a competitive edge
- Parks are considered more important than ever in today's urban areas
- Domes considered important but neglected
- Relatively handful of donors care about parks compared with arts and culture
- Have to blend public and private funding because parks are considered public assets
- Development of Menomonee River Valley beyond the foundation for a re-envisioned Mitchell Park
- People need more reasons to go to Mitchell Park than just the Domes
- $14 million is larger than most of the current capital campaigns but fits well into the range
- Campaign goal should account for program and endowment requirements
- The Welcome and Education Center is most attractive to private donors
- More investment now beginning to happen on Milwaukee's southside
- Need to combine park re-envisioning with other assets like healthy food and fresh water
- As a community and as a state we have to determine how to fund parks
- A measure of success will be better horticultural quality in Milwaukee

The Domes at Milwaukee's Mitchell Park Conservatory are iconic historic architecture. The architectural conceptual design and plan call for the rehabilitation of these for the next fifty years, maintaining their importance on the list of important Milwaukee architectural destinations. Visible for miles in every direction, they represent the "heart" of the City.



Mitchell Park and its Domes are located in what has always been an ethnically diverse area of Milwaukee. The neighborhood's early residents were Yankees, Swedes, Norwegians, and Irish, followed shortly by immigrants from Poland, Bulgaria, Croatia, Serbia, and Slovenia, Germany, Hungary and China. These diverse immigrants (both working class and wealthy) created homes, businesses and churches. In the 1920's, early Mexican immigrants moved to Milwaukee for tannery jobs and began forming a Latino community that now comprises over 60% of Clarke Square. Later, after 1968 when Open Housing laws were finally passed, small portions of the city's African American population moved to the south side and

in the 1980's, immigrants from southeast Asia found a new home there, joining Native American and white residents — making Clarke Square one of Milwaukee's most diverse neighborhoods.

Into this diverse neighborhood came Mitchell Park. The land was originally purchased by Milwaukeean Alexander Mitchell for a botanical park, which he called Mitchell's Grove. He built a glass conservatory. After his death, the City of Milwaukee purchased the land along with another 28.5 acres of adjacent land, forming a 62-acre parcel to become one of the five original public parks in Milwaukee.


Designed by architect Henry Koch – the same architect who designed the Pfister Hotel, the Milwaukee City Hall, Turners and some 700 other buildings – the early structure was a grand crystal palace of the style popular in the late 1800's. By the mid 1950's, however, it was leaking and falling apart. Milwaukee County decided to launch an international competition for a replacement; the contest was won by Milwaukee architect Donald L. Grieb who originally proposed a total of five domes. Grieb's Domes were a response to Buckminster Fuller's geodesic domes and to the geodesic dome that had previously been built (1960) at the Missouri Botanical Garden. While the height of the Missouri dome – like all geodesic domes – is constrained to be equal to its radius, Grieb's conoidal domes are shaped to allow for more tall trees within a similar area.

Mitchell Park's original "dome", part of the crystal palace-style Mitchell Park Conservatory.

Missouri Botanical Park's geodesic dome, 1960.

Mitchell Park's conoidal domes.

Grieb was a visionary. His domes won patents for their engineering design. But he couldn't have foreseen the needs and realities of operating a horticultural center in the 21st Century. Nor could he have foreseen the issues that many mid-60's structures throughout the country faced with the new materials they employed. Just as the original conservatory in Mitchell Park began to let in the rain and winter winds, Grieb's domes started to face the same problems.

In Grieb's day, a few horticulturalists could work in a cramped office in a basement, and a modest retail store could operate out of a closet. Today, inaccessible offices that are unable to fit the required staff, and lack of public amenities required by visitors – including food service, retail, visitor welcome center exhibits, and classrooms mean that the Domes cannot be the attractive national and international destination that they were when first constructed in the 1960's. The Domes early visitation far exceeded other glass conservatories such as Missouri Botanical Garden's: today, the lack of workable space for special exhibits, education, community partnerships and events means that Mitchell Park and Domes have fallen behind its former peers in annual visitor counts. The Domes need physical repair to remain viable as structures. They also need the support of additional new spaces to provide the programming required by today's visitors.

Thus, in order to solve the challenges being faced by the Mitchell Park Domes, it will be necessary to reimagine the entire park they inhabit. The addition of a restaurant and improvement of event venues will showcase the Park as a destination for celebrations. The conservatories themselves and the surrounding park landscape will largely retain their existing uses, but the spatial needs of new programming will require both existing spaces to be overhauled and exciting new spaces to be constructed.

A 15,000 square foot new visitor's center will be positioned south of the Domes, centered on the axis formed by the Rainforest and Desert domes and the former sunken garden.

The eastward approach into the buildings along an enhanced pedestrian avenue will acknowledge the famous historic front view of the Domes with its original undulating entrance before visitors enter the

new courtyard nestled between the visitor's center and the southmost dome. The new and existing buildings will frame the park landscape beyond.

Plants and other goods for sale will spill out into the courtyard when the glass garage doors into the ample new gift shop and snack bar are open. The visitor center's lower level will house an expansive hall to host events, from weddings to farmer's markets to horticultural or medical research symposia and gatherings of schoolchildren. The hall will feature an immediate view of the 23,000 square foot revamped sunken water garden plaza just outside and easy access to the wedding garden directly east of the building.

Upon purchasing admission in the courtyard, visitors will enter the Domes themselves. Though the current plant collection will be retained, programming in the renewed Rainforests of the World and Deserts of the World domes will expand to include rotating cultural exhibits. The Show Dome will be reimagined as the "Our World" Dome, showcasing the variety of plant life found throughout the temperate zone inhabited by Milwaukee. This dome will also be an important component of the Wisconsin Center for Urban Horticulture and will continue to present exhibits currently enjoyed by Domes visitors.

The space between the three domes will be utilized as a commons eating and relaxation area, and the former front entrance will open to outdoor seating. The new Family Discovery Garden behind the Domes will invite children to learn about plants, food, and ecology through play and hands-on exploration.

The round transition greenhouse, between the Domes and the rear access road to the north, will be renovated into a full-service restaurant. This will be the center of the park's catering operations. The addition of an outdoor dining terrace will provide views towards downtown Milwaukee. A secondary entrance to the Domes will also be added in this area, in order to connect with the bridge from the Hank Aaron Trail and Three Bridges Park and provide close access to visitors coming from the restaurant. This entrance may be used for evening/after hours events in the Domes.

Existing mid-century park elements will be remodeled. Scattered terraced seating will shape the landscape at the amphitheater, making it a more functional venue for wedding ceremonies and performances. The 8800 square foot boathouse pavilion on the lagoon's north shore will be upgraded and modernized. An intimate garden and outdoor cooking area will be tucked into the building's northside exterior corner.

An important new function of the park will be that of a Wellness and Horticulture Learning Campus. The annex greenhouse currently used for events will be repurposed into a demonstration kitchen, research laboratory space, seminar rooms and classrooms for students of all ages.

While the north three greenhouses will continue to be used for park plant production, the remainder will be transformed into educational botanical labs. Programs in these will include youth apprenticeships, workforce development, certificates in horticulture and culinary arts, urban agriculture support, and community wellness services.

The Learning Campus will extend out into the park, with gardens focusing on nutrition and sustainability east of the Domes and north of the lagoon. The implementation of a water recirculation plan to keep the

lagoon clean, reconstruction of a portion of the historic sunken water garden and display of stormwater management methods will provide opportunities for ecosystem stewardship instruction.

Mitchell Park is a prominent retreat for members of the community. In order to better access its underused areas, a new narrow winding road with parking areas will begin at the terminus of S. 23rd Street and meet the existing access road near the new secondary entrance into the Domes. The truck entry to the north railyard will be reconfigured to increase safety for bikers using the Hank Aaron Trail connection bridge. Increased activity at the restaurant and event venues after Domes hours will heighten the sense of security for other park users. Food trucks will serve visitors throughout the park. Features such as the Packers football field and the splash pad will remain. A portion of the sunken garden will remain as open green space that can host outdoor markets, festivals and other activities, as well as its current popular use as an impromptu neighborhood soccer field and social space.

Tennis and basketball courts will be added to the park to foster the growing relationships between the park's athletic facilities and the neighborhood's Journey House and Cristo Rey High School.

Event venues and the restaurant will increase attendance and revenue, while creative partnerships with other Milwaukee institutions can strengthen both the park and the rest of the community. The park's most popular assets will be enhanced. Re-envisioned, the Domes and Mitchell Park will enjoy a vibrant future**.**


Site and Garden Master Plan Narrative - Mitchell Park Conservatory Domes

The renovation and repair of the Mitchell Conservatory Domes is based on a comprehensive outreach and funding strategy that necessarily seeks to expand its role and presence linking horticulture to community and global issues. This strategy has footholds in the heritage of the domes and the funding opportunities present in a historically appropriate approach: urban agriculture and wellness, the education and demonstration of where food comes from and the disconnect that has evolved with urbanization, and the importance of water and the water cycle in the environment.

The Mitchell Park Master Plan seeks to illustrate opportunities that could be implemented in support of the renovation strategy to reestablish a vital recreation asset for the neighborhood and Greater Milwaukee Community and identify the Mitchell Park Conservatory Domes as the international feature it once was and can continue to be. The challenges and goals of this strategy are embodied in a few guiding principles for the site renovation.

- **Preserve the Domes - structures and collection.**
- **Serve and connect to the Clarke Square Neighborhood grid that surrounds the park; the facility is a part of the community identity.**
- **Solutions must be self-sustaining.**
- **Design solutions should have a combined facility approach to attract the best/most partners – educational, horticultural, cultural, social.**
- **Facility should provide an experience that extends guests' time spent at Mitchell Park.**

**Preserve the Domes**

The site development recognizes the historic, formal presentation of the domes complex and its symmetry by anchoring the axial approach with a new entry garden that will present and preserve the historic view. The plant collections within each dome will become a touchstone for an expanded integration of outdoor gardens and activities related to each indoor environment. The transition dome will become an anchor restaurant for the facility. Outdoor spaces, parking and vehicular circulation and service areas are modified to give the domes a 360-degree presence and appeal. Necessary service portals into the domes structure are separated from public access and views, or otherwise de-emphasized in the plan.

**Serve and connect to the Clarke Square Neighborhood grid that surrounds the park; the facility is a part of the community identity.**

The master plan strengthens and expands connection to the neighborhood with multiple bike paths, connecting neighborhood streets to the Hank Aaron trail and bike path complex north of Mitchell Park. A new park road aligned along a historic route provides vehicular access throughout the entire park and creates parking near neighborhood facilities where it currently does not exist. The road, parking, and adjacent walks and trails make the entire park accessible and more conveniently linked to the neighborhood and beyond. New recreational facilities, a soccer field, public fishing pier, and tennis courts, are added to the park. Opportunities for playgrounds, picnicking, trail-based recreation, and other activities can be included in a detail study. The historic marker north of the football field is given a more suitable presence with direct and accessible access routes as shown. Road and pathway lighting will add to the safety and security of park users.

**Solutions must be self-sustaining**

The overall strategy for the domes and park renovation is based on creating a revenue stream using a wide range of tools: investment and tax saving opportunities, partnerships with private sector organizations, promotion of volunteer participation, and donor recognition options and collaborations. The site master plan supports these initiatives by providing clear, intuitive circulation to a variety of destinations within the complex, while de-emphasizing the railroad yard presence and access. Conveniently located and increased parking will make park facilities accessible to all, support new destinations and functions, and expand overall use and activity. The plan seeks to build upon the regional bicycle facility connection by continuing off road bike and multiuse paths through the park connecting to the city and neighborhoods.

The site master plan views security of the new garden spaces as a programmatic necessity, protecting rare and sensitive horticultural collections and arrangements from herbivores and protecting permanent and seasonal displays and exhibits from after hour vandalism and theft. At the same time, the master plan does not necessarily combine security with entry fee or revenue control. The two are not necessarily directly connected.

Space rental for activities and events is a potentially important revenue stream. To that end, the plan suggests several event venues that could be rented for any number of possibilities. Event areas could be used for weddings; facilities can be planned as outdoor venues with nearby indoor space for inclement weather. Outdoor music events, conferences and symposia of multiple scales and topics, along with meetings for businesses and neighborhood activities, could all contribute to revenue streams with costs possibly on a sliding scale depending on the initiators.

Much of the financial strategy for this renovation is based on partnerships with private interests.

**Design solutions should have a combined facility approach to attract the best/most partners – educational, horticultural, cultural, social.**

Outreach to potential partners is a fundamental aspect of the renovation strategy. The master plan suggests specialty garden areas as meant to be an introduction to private organizations initially

identified as potential partners. This includes gardens associated with wellness and health, urban agriculture and permaculture, exercise, water conservation, runoff management practices, and rainfall harvesting. The master plan illustrates demonstration areas that speak to large scale urban production, backyard gardening, and all the scales in between.

**Facility should provide an experience that extends guests' time spent at Mitchell Park.**

The outdoor garden collections will create an entirely new experience. At full buildout, the gardens will provide users with hours of strolling, learning and recreation. The redeveloped park will not only extend visitor time in the park, but it will also provide more reasons to visit and a more convenient, accessible experience. New uses envisioned in the master plan include:

- A new horticulturally themed restaurant in what is now the transition dome. This restaurant will take full advantage of being associated with the Domes, occupying a replica space and having a direct connection to the interior domes complex.
- A water conservation-based theme in the park that could be demonstrated visually in a "storm water garden" as well as a wide variety of best practices to improve the water quality of the existing lagoon, water based recreation amenity additions, and a truly functional approach to rainwater harvesting for irrigation of indoor collections and recharge for garden water features.
- A multi-generational recreation and education theme around horticulture, nature, and urban agriculture. This concept combines play, socialization, nature, and urban agriculture into numerous garden settings where visitors can learn about and participate in the natural processes that support our civilization.
- Renovation of the existing "boathouse" building to a waterfront conference, meeting, and event facility. The master plan supports the locational appeal of this facility with water-based recreation programs, newly created garden spaces, convenient parking and bike path connections, and water quality improvement measures to maximize its appeal and functionality.
- The new park loop roadway and other improvements make the park and gardens available for "pop up" events, food trucks during high traffic times, and formally programmed festivals. The private sector partners could have access to the park for their own activities and events.
- While technically not "guests", almost assuredly, the operation and maintenance of the renovated site and gardens will benefit and be supported by volunteer participation. There will be ample opportunities throughout the park to engage volunteers seeking to contribute their time for recreation, exercise, education, community and neighborhood service and to be simply involved with a prestigious facility. The master plan suggests that volunteers and staff have dedicated facilities, parking, preparation and organizational space, and interior office space to optimize their time spent at the park.
- More activity in the park will create a better sense of security and safety.
- Strong connection to the indoor horticultural environment will extend the outdoor season to year-round. Opportunities for winter recreation, cross country skiing, ice skating on the lagoon, or an artificial seasonal or event-based installation, can be explored as the park evolves.

The renovation of the Mitchell Park Conservatory Domes adjoining gardens is a future vision to be created by the consortium of public/private partnerships, an organizing board, and dedicated staff. The ultimate make up, themes, and composition of the surrounding gardens and park will be the result of process that is yet to occur. This master plan serves to highlight the opportunities arising from a funding

and operational strategy to preserve the resource. It is not the answer; it is not what will be constructed. Only through the continued dedication of human and financial resources will this idea evolve to a future, yet to be fully determined, reality.

**Mitchell Park Domes and Park Master Plan**

**Site Master Plan Development Estimate**

**Saiki Design, Landscape Architects**

| Description | Quant | Units | Cost Per Unit | Subtotal Included in Budget | Subtotal Not Included in Budget | Notes |
|---|---|---|---|---|---|---|
| | | | | | | |
| **A. Entry area** | | | | | | |
| site prep | 170000 | SF | $ 1.00 | $170,000.00 | | remove pavements, improvements, strip vegetation, topsoil, |
| grading | 30000 | CY | $ 5.00 | $150,000.00 | | |
| new entry drive and parking lot pavement | 63000 | SF | $ 2.50 | $157,500.00 | | entry at Layton to restaurant drop off, incl. 113 parking stalls |
| conc curb and gutter | 2700 | LF | $ 15.00 | $40,500.00 | | |
| lighting | 1 | Allow | $ 100,000.00 | $100,000.00 | | |
| landscape | 1 | Allow | $ 100,000.00 | $100,000.00 | | parking and perimeter landscape only |
| pedestrian pavements | 5000 | SF | $ 6.50 | $32,500.00 | | sidewalks |
| bike path | 11000 | SF | $ 1.75 | $19,250.00 | | asphalt surface |
| perimeter | 1200 | LF | $ 150.00 | $180,000.00 | | fence, masonry columns, gates, |
| monument sign/entry feature | 1 | Allow | $ 20,000.00 | $20,000.00 | | |
| Entry Garden | 30000 | SF | $ 24.00 | $ 720,000.00 | | garden space, high quality pavements, walls, planter walls for demo plots, irrigation, detailed planting, water feature, lighting, etc. |
| Restaurant Garden | 12000 | SF | $ 20.00 | $ 240,000.00 | | " |
| | | | | | | |
| | | | | | | |
| **SUBTOTAL** | | | | **$1,929,750.00** | **$0.00** | |
| **20% Contingency** | | | | **$385,950.00** | | design and construction contingency |
| **General Conditions @ 20%** | | | | **$385,950.00** | | |
| **Total Construction Area A** | | | | **$2,701,650.00** | | |

| Description | Quant | Units | Cost Per Unit | Subtotal Included in Budget | Subtotal Not Included in Budget | Notes |
|---|---|---|---|---|---|---|
| | | | | | | |
| **B. Gardens** | | | | | | |
| site prep | 160000 | SF | $ 1.00 | $160,000.00 | | remove pavements, improvements, strip vegetation, topsoil, |
| grading | 18000 | CY | $ 5.00 | $90,000.00 | | |
| perimeter walks | 16000 | SF | $ 6.00 | $96,000.00 | | new walks only, concrete |
| lighting | 1 | Allow | $ 100,000.00 | $100,000.00 | | |
| perimeter | 1500 | LF | $ 150.00 | $225,000.00 | | fence, masonry columns, gates, |

| | | | | | | |
|---|---|---|---|---|---|---|
| Entry Courtyard | 12000 | SF | $ 25.00 | $300,000.00 | | |
| Event Garden lower level | 30000 | SF | $ 25.00 | $750,000.00 | | |
| Event Garden upper level | 50000 | SF | $ 25.00 | $1,250,000.00 | | |
| Childrens Garden | 65000 | SF | $ 30.00 | $1,950,000.00 | | garden space, high quality pavements, walls, planter walls for demo plots, irrigation, detailed planting, water feature, lighting, etc. |
| Storm water Garden | 45000 | SF | $ 25.00 | $1,125,000.00 | | " |
| | | | | | | |
| **SUBTOTAL** | | | | **$6,046,000.00** | **$0.00** | |
| **20% Contingency** | | | | **$1,209,200.00** | | design and construction contingency |
| **General Conditions @ 20%** | | | | **$1,209,200.00** | | |
| **Total Construction Area B** | | | | **$8,464,400.00** | | |

| **Description** | **Quant** | **Units** | **Cost Per Unit** | **Subtotal Included in Budget** | **Subtotal Not Included in Budget** | **Notes** |
|---|---|---|---|---|---|---|
| | | | | | | |
| **C. Parking Expansion** | | | | **Subtotal Included in Budget** | **Subtotal Not Included in Budget** | |
| site prep | 200000 | SF | $ 1.00 | $200,000.00 | | remove pavements, improvements, strip vegetation, topsoil, |
| grading | 6000 | CY | $ 5.00 | $30,000.00 | | |
| new entry drive and parking lot pavement | 100000 | SF | $ 2.50 | $250,000.00 | | entry from Pierce St. to main drop off, incl.259 parking stalls |
| conc curb and gutter | 3000 | LF | $ 15.00 | $45,000.00 | | incl. entry road |
| lighting | 1 | Allow | $ 100,000.00 | $100,000.00 | | |
| landscape | 1 | Allow | $ 75,000.00 | $75,000.00 | | parking and perimeter landscape only |
| pedestrian pavements | 5000 | SF | $ 6.50 | $32,500.00 | | sidewalks |
| monument sign/entry feature | 1 | Allow | $ 20,000.00 | $20,000.00 | | |
| | | | | | | |
| | | | | | | |
| **SUBTOTAL** | | | | **$ 127,500.00** | **$0.00** | |
| **20% Contingency** | | | | **$19,000.00** | **$0.00** | design and construction contingency |
| **General Conditions @ 20%** | | | | **$19,000.00** | **$0.00** | |
| **Total Construction Area C** | | | | **$ 165,500.00** | **$0.00** | |

| **Description** | **Quant** | **Units** | **Cost Per Unit** | **Subtotal Included in Budget** | **Subtotal Not Included in Budget** | **Notes** |
|---|---|---|---|---|---|---|
| | | | | | | |
| **D. Maintenace and Urban Agriculture Area** | | | | | | |
| site prep | 192000 | SF | $ 1.00 | $192,000.00 | | circulation and parking corridor |
| grading | 15000 | CY | $ 5.00 | $75,000.00 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| new entry drive and parking lot pavement | 85000 | SF | $ 4.50 | | $382,500.00 | yard pavement, service drive, incl. floor slabs for sheds |
| conc curb and gutter | 600 | LF | $ 15.00 | | $9,000.00 | |
| lighting | 1 | Allow | $ 40,000.00 | $40,000.00 | | |
| landscape | 1 | Allow | $ 40,000.00 | $40,000.00 | | |
| pedestrian pavements | 10000 | SF | $ 1.25 | $12,500.00 | | garden paths -gravel |
| perimeter | 1900 | LF | $ 25.00 | $47,500.00 | | fence with gates |
| Garden plots | 30000 | SF | $ 8.00 | $240,000.00 | | raised plots |
| Hoop houses | 5 | Each | $ 5,000.00 | $25,000.00 | | prefab mylar, unheated, no floor. |
| | | | | | | |
| **SUBTOTAL** | | | | **$672,000.00** | **$391,500.00** | |
| **20% Contingency** | | | | **$134,400.00** | **$134,200.00** | design and construction contingency |
| **General Conditions @ 20%** | | | | **$134,400.00** | **$134,200.00** | |
| **Total Construction Area D** | | | | **$940,800.00** | **$659,900.00** | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **E. Waterfront Pavilion Area** | | | | | | |
| site prep | 20000 | SF | $ 1.00 | $20,000.00 | | remove pavements, improvements, strip vegetation, topsoil, |
| grading | 2000 | CY | $ 5.00 | $10,000.00 | | |
| perimeter walks | 2100 | SF | $ 6.00 | $12,600.00 | | new walks only, concrete |
| lighting | 1 | Allow | $ 100,000.00 | $100,000.00 | | |
| boardwalk/pier | 1000 | SF | $ 35.00 | $35,000.00 | | |
| perimeter | 250 | LF | $ 150.00 | $37,500.00 | | fence, masontry columns, gates, |
| Event plaza | 3000 | SF | $ 25.00 | $75,000.00 | | |
| Orchard | 9000 | SF | $ 15.00 | $135,000.00 | | |
| | | | | | | |
| **SUBTOTAL** | | | | **$425,100.00** | **$0.00** | |
| **20% Contingency** | | | | **$85,020.00** | | design and construction contingency |
| **General Conditions @ 20%** | | | | **$85,020.00** | | |
| **Total Construction Area E** | | | | **$595,140.00** | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **F. Community Park** | | | | | | |
| site prep | 250000 | SF | $ 1.00 | $250,000.00 | | circulation and parking corridor |
| grading | 37000 | CY | $ 5.00 | $185,000.00 | | |
| new entry drive and parking lot pavement | 90000 | SF | $ 2.50 | $225,000.00 | | entry at Layton to restaurant drop off, incl. 100 parking stalls |
| conc curb and gutter | 1000 | LF | $ 15.00 | $15,000.00 | | parking lot only |
| lighting | 1 | Allow | $ 120,000.00 | $120,000.00 | | |
| landscape | 1 | Allow | $ 70,000.00 | $70,000.00 | | parking and perimeter landscape only |
| n pavements | 12000 | SF | $ 6.00 | $72,000.00 | | sidewalks stairs/walk to historic marker |

| | | | | | | |
|---|---|---|---|---|---|---|
| bike path | 12000 | SF | $ 1.75 | $21,000.00 | | asphalt surface |
| Historical marker garden | 4000 | SF | $ 18.00 | $72,000.00 | | seating, pavement, signs, landscape, no lighting or water feature. |
| soccer field | 1 | Each | $ 250,000.00 | $250,000.00 | | soil management, underdrain, new turf |
| basketball and tennis courts | 1 | Allow | $ 125,000.00 | $125,000.00 | | asphalt surface, goals, nets, fencing |
| | | | | | | |
| **SUBTOTAL** | | | | **$1,405,000.00** | **$391,500.00** | |
| **20% Contingency** | | | | **$281,000.00** | **$78,300.00** | design and construction contingency |
| **General Conditions @ 20%** | | | | **$281,000.00** | **$78,300.00** | |
| **Total Construction Area F** | | | | **$1,967,000.00** | **$548,100.00** | |

| | | |
|---|---|---|
| **Site Plan Total** | $10,605,350.00 | $391,500.00 |
| **Contingency 20%** | $1,980,170.00 | $78,300.00 |
| **Conditions 20%** | $1,980,170.00 | $78,300.00 |

# Recommended Pre-Capital Redevelopment Budget

# September 2019-2020

This plan recommends immediately moving forward with implementation of pre-capital redevelopment, recognizing that there are many action steps required over the next year that are not currently within the County budget. The plan recommends assigning the cost of these to the redevelopment itself that begins in 2021. For example, architectural and engineering fees for detailed plans and other related expenses will be paid for by Historic Tax Credits and the related short-term loan HTC will employ to provide the working capital starting in 2021. A short-term internal loan for 2020 from the receipt of this scheduled in2021 should be considered. NMTC and PACE provide similar capacity to reimburse upfront expenses that they address. Finally, it is typical in a capital campaign to strive toward some bridge funding for venture start-up. The plan anticipates applications for major national grants as well as seeking "launch" support from local funders to address 2019-2020 expenses.

The planning process has worked to line up prospective funders and lenders, all of whom have reiterated the need for continued movement forward as soon as the County has approved the plan/direction.

| Cost Center | Timing | Amount | Reimbursed From/Paid by |
|---|---|---|---|
| Partnership and enterprise structure and drill down business plans resulting in firm agreements and detailed plans for subsidiary entity operations. | September 2019-February 2020 | $70,000 | NMTC |
| Legal structure; planning | September 2019-February 2020 (subset of above) | $8,000 | HTC/NMTC |
| Organizational start-up Conservancy: governance, detail plans, legal corp. | October 219-December 2020 | $30,000 | HTC/NMTC/OZ/Capital campaign |
| Legal fees for legal structure, twinning credits and loans | October 2019-July 2020 | $300,000 | HTC |
| Architectural and design fees | September 2019-September 2020 | $6,000,000 | HTC, NMTC, OZ |
| Capital campaign fees and costs | October 2019-December 2020 | $700,000 | Capital campaign |
| Executive search, Conservancy CEO, Development VP | September 2020-December 2020 | $60,000 | Capital campaign |
| Programming ramp up and phase in (medical, research, education) | May 2020-December 2020 | $150,000 | Grants, NMTC/OZ |
| Subsidiary ramp up and launch | June 2020-December 2020 | $400,000 | NMTC/OZ |
| TOTAL | | $7,718,000.00 | |

**ArtsMarket and team responses to County Questions are in bold type**

**Date**: August 7, 2019

**To**: Louise Stevens, ArtsMarket, and Consultant Team

**From**: Julie Bastin

**Re**: Questions related to Phase 3 Reports

Milwaukee County staff have reviewed the consultant team's work in support of the third phase of the Domes Task Force; this message contains our accumulated feedback. We greatly appreciate the work that has been done to date. Milwaukee County has maxed out our property and sales taxes while every year we send more money to the State. Due to this imbalance we need new revenue sources to address capital needs and support operations, and this vision incorporates new revenue in both the capital and operating plans. The Domes are an important asset to Milwaukee County and because we want to see a viable and successful recommendation move on to the County Board. It would therefore be helpful if you could address the following questions. The questions are followed by a list of risk factors that should be considered by the Task Force and County Board related to the proposal and items that should be further verified by third party financial, real estate, and accounting experts.

**Our team has reviewed the questions and risk factors given to us. Our responses are in bold type. Relative to the call, above, for further verification by third party financial, real estate, and accounting experts, we have ourselves included independent legal/real estate counsel from the Milwaukee office of Husch Blackwell on our team to review our premises and assumptions at every step. We have also spoken with HTC/NMTC/PACE and OZ experts at the local, state, and national level throughout the study to gain their independent opinion. We recommend that the County focus on legal expertise rather than third party financial, real estate, or accounting. The recommendations presented are based on this. Finally, our job was to provide a business plan, not a proposal. We have submitted a business plan.**

**Questions**

- The operating plan recommends adding new revenue generating uses such as a full-service restaurant and the sale of plants in a new entrance/lobby space. The capital plan also relies on obtaining historic tax credits and historic designation. Is it possible that the historic designation could prevent these other facility uses from taking place as historic designation places dramatic limitations on what can be done to a building? **Anything but. In fact, our plan takes the details of HTC totally into consideration. We have built the plan around the requirements of the funding streams.**
- The operating plan incorporates elements from both the "Targeted" and "Eco-Dome" options recommended by the Task Force in Phase 2. It is referenced throughout the report, but more objective analysis that led to this conclusion needs to be presented. As discussed at the July Task Force meeting, can you provide the justification for why the recommendations from Phase 2 were not pursued in favor of this new recommendation, which blends elements from the

"Targeted" and "Eco-Dome" options? **Those elements would not merit support from NMTC or OZ investment, or from donors. We have tried to state this repeatedly through the report.**

- One question raised in the public comment portion of the July Task Force meeting was whether the expanded use of the park would be included in a fenced perimeter, thus reducing publicly accessible green space in lieu of ticketed access. Can you elaborate or advise on how to balance public accessibility with increased programmed and ticketed space? Perhaps some of the case studies have examples of how to address this concern. **The renderings show very sensitive gates that can be further developed as your planning continues, but that leave open most of the park for public access. Locating those gates will be important: i.e. leaving open as much space as possible while preserving the viability of ticketed areas and protecting the gardens both from theft (which is a constant concern in botanical gardens everywhere) and from critters. We imagine careful work will need to be done to finesse this.**
- The operating plan assumes sequential dome-by-dome rehab in years 2021-2024. Is the $30 million capital repair isolated for this purpose in year 1 or spread throughout the first three years? **We actually have built $43 million into the first three years, assuming that at least one Dome at a time will need to stay open for revenue. Ideally, we would want to see two Domes at a time remain open, and have assumed that a portion of that $43 million will go into the new building and renewal of the Pavilion so that these can begin producing revenue to support the revenue plan.**
- Regarding the applied horticultural and medical research partnerships with entities, such as the Medical College of Wisconsin, MATC, UW Extension, and others, what does a successful partnership look like and have any of these partners succeeded in similar endeavors? **They have each asked for on-going dialogue as a group and individually, this fall, for mapping out the partnerships. Yes, they have been involved in both successful and unsuccessful partnerships. They want a facilitated planning process. We have added this to the work plan for the fall.**
- Are there any restrictions or requirements associated with the use of NMTC, OZ, PACE, and historic tax credits that would interfere with one another? **Perhaps some minor elements, but experts we spoke with throughout the country are experienced in working through these. That's where legal counsel comes in. Any project including HTC or any other credit or financing mechanism requires a legal process. We have included this in the budget and timeline for 2019-2020.**
- There are multiple recommendations that would re-shape the use of the greenhouses, but the existing uses are not accounted for. Almost all of the space within the greenhouses is used for needed back of the house functions, including storage – which has already been dramatically reduced in other facilities and areas of the building. Does the plan envision moving plant growth, storage, and other back of the house functions elsewhere to create the new exhibit production hub? **We believe that much space has been poorly used. We believe that by cutting back on the show-dome programming from multiple shows a year may eliminate space. We have built some plant growing areas into the exterior, and there may need to be additional plant raising areas that will be needed after everything is cleaned up and efficiently used.**

- If the exhibit planning function is a critical external revenue function of a sustainable operating plan, is it then taxable? **A Conservancy subsidiary that is revenue-focused would be assumed to be taxable, yes.**
- Assuming a historic rehab of the Domes, will the combination of old design and construction methods with new materials create any efficiencies in the overall rehab of the Domes structures to effectively reduce ongoing utility and maintenance costs? **Yes, absolutely, which is what makes the project eligible for PACE financing. As a matter of fact, the interest of PACE lenders from around the country has led us to up our estimates of what PACE might bring to the table, which we have reflected in the final version of the report.**

**Risks**

- The timeframe to receive all necessary approvals, create operating entities and contractual relationships, raise funds, and construct new facilities is laid out in an extremely aggressive and potentially unrealistic timeframe. One external driver of this timeframe is the annual decrease in viability of the Opportunity Zone program, which is under federal control. **Indeed. It will be up to the County to make this happen or potentially lose revenue. NMTC, HTC, and PACE are also federal and could be changed at any time. As we have said repeatedly, absent County ability to bond the entire project, this is likely a timeline that will have to work, even though it will be a push.**
- In addition to legal fees, other professional services, such as architects and tax credit advisors, would be needed in the 2020 budget to support this timeline. Based on existing needs, Milwaukee County began the 2020 budget process with a $28 million gap. **We are detailing a budget for 2020 that includes items that will need to be completed in 2019 and2020 but that will be paid for by the funding and financing that will follow, from HTC, NMTC, PACE, OZ and capital campaign proceeds as well as by grants for start-up. For example, HTC will cover the architectural and engineering fees. We recommend thinking about 2020 in part as a loan to the project as a whole rather than added expense.**
- Historic designation has the potential to limit green infrastructure, sustainability improvements, or new-technology architectural solutions that would improve the efficiency and longevity of the Domes. Improving the operating efficiency of the facility is critical to achieving sustainable operations in the future. **While HTC/Secretary of the Interior calls for items such as windows to be "repaired" rather than "replaced" the rules are very sensitive to energy efficiency and other technology. With thoughtful architectural leadership there is nothing that limits green infrastructure or sustainability.**
- The plan to implement a water recirculation plan incorporating the lagoon, water gardens, underground cisterns, and a water reuse plan assumes a new partnership with the Milwaukee Metropolitan Sewerage District. Current and ongoing discussions with MMSD have been focused on other areas of the park system and this new project would need to compete with existing stated higher priorities for MMSD. It is unclear if this would be supported by MMSD, and if so, on what timeframe. The plan would need to be independently reviewed by qualified engineers to determine feasibility from a hydrological perspective. **We understand that. We**

**have met with MMSD leadership and the Water Council and would want to continue those meetings.**

- The "fourth dome" space is currently used to transition plant specimens, which aids in avoiding widespread insect infestation and plant diseases. That benefit would be lost if this space is converted to a restaurant and the risk of plant infestation could increase if the relocation is not well planned. Other suggestions in the plan further reduce the plant growth in the greenhouses, which compounds the issue of where horticulture activity is taking place in this facility. **Understood. A solution will need to be found. The importance of the restaurant to the overall plan and to securing the HTC is so important that another solution will be necessary.**
- The proposed operating relationship would effectively eliminate and replace the Friends of Domes with a new entity. It is unclear such a dramatic shift is necessary and may alienate the most passionate supporters of the Domes programming. **That is not true. The Friends remain in the plan. A new entity, the Conservancy, will be added but as with any such garden or museum, there is an on-going very important role for a Friends organization.**
- The capital pro forma includes a New Markets Tax Credit allocation of $11 million. This is essentially a loan that would need to be repaid. Committing to taking on debt of this magnitude requires fully verifying the assumptions built into the business plan, and if the plan is not successful, the County may be at risk to penalties in repaying this debt. **Not really. First, we call for $12 million in NMTC. Second, we have discussed this issue at length with advisors from around the country who work with NMTC. The typical solution is to re-write the balance of the loan at the time the NMTC term is up until it can be paid down. We have noted that in the plan.**
- The capital pro forma includes an Opportunity Zone allocation of $8 million. Recent conversations with Opportunity Zone experts were not encouraging related to the likelihood of receiving any Opportunity Zone allocation because half of the advantage of the program (return on investment) is not realized through investing in public infrastructure. Based on this, there is assumed risk in relying on Opportunity Zone in the capital plan. **We would have appreciated being a part of those discussions, because we have developed the subsidiary and partnership mechanisms specifically to make the entire project eligible for OZ investment. We would not recommend a $10 million investment stream without carefully working out its viability in supporting the subsidiary operations of the restaurant, retail and other revenue centers.**
- The recommendation to add outside legal assistance to support a new operating entity has been estimated at a $500,000 County expense in 2020. There is currently no funding allocated to this request and it is unlikely to be in any department's requested budget. **Again, we recommend that this along with other 2020 expenses be "expensed" to the capital development. This is typical in a project such as this. NTC, NMTC and private sector investment can be matched to these expenses. Without continued counsel from legal as well as planning experts, the whole thing obviously falls apart.**
- The plan to better integrate the Domes with Mitchell Park includes a new parkway. It is unclear if this makes sense from a transportation and circulation perspective and if park users would prefer this new paved asset in lieu of green space. T**he parkway is actually a return to the historic road that was removed at some point, and addresses both the need for additional parking and needs related to safety. However, these are expenses and if we can remove the expenses from the budget because there is no perceived need for them, fine. Our team**

**believes these improve access, safety, and parking, which all support sustainability. We also recommend seeking funding for a reinstalled parkway from the Department of Transportation.**

- The County's contribution of $18 million would be recommended within the context of the County's well-known capital funding shortfall. Competition with other projects, structural funding issues, and the County's self-imposed bonding cap all present risk to the viability of this assumption. **We have recommended $13.5 M. If there is no ability to make this limited investment happen, we don't believe the project as a whole can happen because individual donors and private sector funders, as well as investors, will believe there is no county will to support the vision. Pls. see the capital campaign analysis done as an addendum to the final report.**
- The proposed partnerships are relied upon to provide direct revenue support in the operating budget, but it is unclear how or to what extent these partnerships could be net revenue producers given the focus on research and education. **It is clearly shown in the budget. We recommend you review the pro forma line for partnerships.**

**Further Review is Needed**

- The model to stack various tax credits, grants, and private equity is incredibly aggressive and it is recommended that someone with real estate financing expertise look into the viability of raising the funds in this capital pro forma. **We will be happy to make recommendations. The various lenders and experts who we have contacted throughout the study are interested in carrying this forward. Some have asked how fast after the task force meeting they can start working on this.**
- The proposed operating structure appears to have the Parks staff functioning on all cost centers and functions (plant and facility maintenance) while the revenue centers would reside with the new conservancy. It is unclear if the proposal would improve the County's annual operating costs. **The model provides for the number of horticultural positions as are currently maintained, while moving non-horticultural work to the Conservancy cost centers. The Conservancy will actually be paying the County for an increasing share of the County's staff positions over time as it increasingly subsidizes Park operations. We have illustrated this in the plan pro forma.**
- The plan presented by Engberg Anderson and Saiki to integrate the Domes with Mitchell Park includes new improvements, such as a new parkway, that would add expense and maintenance to the Parks Department. The costs of these improvements seem significantly under-estimated in the project budget and it is unclear if removing greenspace for paved assets would be supported by existing park users. **See earlier note. By not adding these, however, there may be safety issues and access issues to some of the community spaces we have built in such as the soccer field. We recommend that maintenance may be the responsibility of the Conservancy and have assumed this in the budget. We think there are a number of viable ways forward.**
- One of the stated benefits of the proposal is an estimate that 300 jobs would be created in the fully realized version of this plan, which is about 40 jobs/acre. This seems like an unrealistic assumption and the job creation estimates need to be broken out by function and examined for

viability. **We have, and again we would not be so brash or irresponsible as to make a claim like this without the ability to back it up. See the breakout of jobs in the plan.**

- The capital pro forma includes a Property Assessed Clean Energy (PACE) allocation of $4 million. Prior conversations at the County related to the applicability of PACE financing to County buildings lead to the conclusion that the interest rates that are available to PACE financing exceed the County's bonding, making it more expensive to use PACE than traditional bonds. T**hen we recommend that the County not use it and use County bonds instead. We were given instructions to find other ways other than County bonds to make this project happen. Most non-bond financing is more expensive than bonds.**
- Without demonstrated success or comparable markets, it is difficult to evaluate the viability of the estimated revenue generation from the applied horticultural and medical research partnerships. The operating plan assumes $75,000-$180,000 in direct revenue and up to $2.25 million in grants per year in support of these programs. **We have been in significant discussions with MCW about their bringing large federal and other research grants to the table. On-going planning with MCW will be a part of the fall planning schedule we have proposed to finalize this. We have reviewed the likely support level from national foundations that have placed considerable emphasis on what Kresge calls the "civic commons" type of uses we have recommended in the plan. Based on what we have studied throughout the planning process, we are confident, for now, of the figure.**
- Without demonstrated success or comparable markets, it is difficult to evaluate the viability of revenue assumptions from exhibit planning and construction activities. The operating plan assumes $45,000-$200,000 in direct revenue per year from Touring Exhibit Fabrication. **That is a low assessment. Touring exhibits are a significant source of revenue to those that development. We studied models such as the Phipps Conservatory in Pittsburgh and the Cincinnati Museum Center for this plan.**
- Attendance growth is dramatic with revenue generated from admissions estimated to double in ten years. There is risk in this assumption, one particular aspect that requires further investigation is how re-construction of the Domes would negatively impact attendance. The current operating model only shows a modest $50,000 admissions reduction in year 2, presumably related to construction impacts. **Yes, and we have shown revenue rising dramatically when all three Domes plus the gardens can be presumed to be completed. We have combined the new Domes, new Welcome Center, children's garden, and other gardens into the admissions model, assuming two or three price increases over the ten years based on the new elements opening up, and assuming on-going free days.**
- The capital pro forma includes an expense item that is the Owner's Contingency of $1 million, which is 1.6% of the overall project. Typical projects would include a construction contingency of 10%. The assumption here requires further review. **We will wait on the final construction estimates for that. This may have negative impact on what can be accomplished, and our team is aware of that. The contract requested a conceptual architectural plan which we assume will need considerable detailing in the coming months.**