Equity Planning

Dorothea Dix Park

Raleigh, NC

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Executive Summary

This report is the first of three documents being submitted by the Partnership & Anchor Study workshop team for the purpose of advising the Dorothea Dix Park Conservancy in the area of park partner selection. It is intended as an explanation of methods, a survey of the issues surrounding partner selection, and an operational guide to the two tools which accompany this report, the asset inventory and the partner selection scorecard, that are the main means by which potential partners and anchors will be categorized and selected. It continues the work begun in our prior report on park case studies, which examined the role of anchor institutions at four of Dix's so-called "peer parks," as well as how each of these parks structure their partner selection processes.

The first two sections of this report charts the foundational research and documents behind our work. The former includes a summary of the salient points from our earlier case studies of Balboa Park, Forest Park, Governors Island, and the Atlanta BeltLine, as well as a brief discussion on the ways in which these four parks fall into "classic" or "modern" park categories, and what this means for the types of anchors and partners represented at these parks. The Literature Review discusses applicable scoring frameworks and Request for Proposals (RFP) processes from these parks, as well as strategies relevant to the questions facing Dix from the Chatham County Incentive Policy and the 11th Street Bridge Park Strategic Plan for Small Business Development.

The heart of this guide, Methodologies Behind Asset Inventory and Partner Scoring Framework, explains the purposes behind the two tools, their anatomy and suggested best-practices for their application, and suggests means of obtaining the most accurate scores. The following section describes a test of the two tools using two already-proposed partners for Dix, the African American Cultural Complex and Marbles Kids' Museum, further clarifying the tools through familiar actors.

The last section on further recommendations stresses the iterative nature of our suggested recommendations and emphasizes the importance of flexibility in light of the process' essential limitations. It also describes specialized techniques that other parks have employed, which may prove interesting and instructive examples for Dix Park decision makers.

Finally, a brief Appendix lays out the Dix Park Core Principles and Key Actions as found in the Master Plan, which were key to building our foundational understanding of both the purpose of our project and the overall vision for the Park.

Introduction & Project Purpose

With its wealth of open space and unused buildings ready for redevelopment, Dorothea Dix Park presents a historic opportunity for Raleigh to create a destination park drawing visitors near and far to the capital city. Key to the creation and success of this destination park will be the involvement of engaged and supportive partners and anchor institutions. Establishing a selection process for these anchors and partners is a key first step toward realizing the Dix Park team's vision for the park's evolution. To this end, our team was tasked with answering two main questions: first, what is the range of anchors and partners necessary to support Dix Park's transformation into a regional destination park; and second, how will these potential partners be selected and evaluated?

In order to answer these questions, we first performed case studies for four "peer parks," each of which are similar to Dix Park in distinct ways: the Atlanta Belt Line, Balboa Park in San Diego, Forest Park in St. Louis, and Governors Island in New York City. The lessons learned about the partnership selection methods, or lack thereof, used by the management teams at each of these parks informed the creation of our two key deliverables, the asset inventory and the partnership selection scorecard.

The asset inventory identifies and catalogues existing community capabilities and capitals within Raleigh and the broader Triangle region, visualizing the range of existing potential partners in the area and how each can

contribute to Dix's mission. It places peer park partners into analogous categories, demonstrating how successful destination parks incorporate a diverse set of partners to create an experience that draws a wide array of visitors.

The partnership selection scorecard scores a potential park partner on five main dimensions: Fit, Visitorship, Finance, Suitability, and Equity, each of which contain sub-scores. Scores are calculated based on whether or not a partner achieves a certain number of objectives specific to each sub-score. The scorecard is formulated such that various scores and sub-scores can be adjusted, discarded, and weighted as the park's needs change or as informed by input from the community.

We understand that scoring, by its very nature, is not an objective process, as much as we would like it to be. While partner selection may be the purview of the park management team for now, there is certainly an expectation that this process, and the way in which various parties participate and their input is weighted, will be one of continuous evolution. Our goal was to provide a responsive and flexible selection framework with appropriate categories that will remain useful to the park for years to come.

Literature Review

In addition to completing peer park case studies, we conducted a literature review of existing plans and policies for evaluating potential partners. Key documents which informed the Scoring Framework are outlined below.

Chatham County Incentive Policy - 2019

The Chatham County Incentive Policy was highlighted by the Dix Park Management team as an objective method for assessing developers and businesses seeking to locate in the county. In the case of Chatham County, the goal of assessing applicants is to determine if the economic benefits they will bring justify an incentive package to recruit them. Their scorecard measures the community benefit of a new development or partner, and the degree of benefit determines the amount of incentive offered.

The Chatham County Incentive Policy includes seven different scoring categories, ranging in weight from 10 to 20 percent in order to balance the county's goals of generating capital investment to increase property tax revenue and focusing development to specific geographic areas and into certain industry clusters. Scoring categories include the number of new jobs created, the wage level of new jobs as compared to county and state averages, the level of capital investment the organization is making to set up the new location in the county, the industry cluster/business type, the quality of new jobs based on the benefits provided to employees, the number of existing county residents hired, and the environmental impact. Within each category, scores are clearly delineated. In some categories, options are mutually exclusive and in others they are cumulative. Two examples with the same category weight are outlined in Table 1 below. The total score determines the amount of incentive grant the developer or business will qualify for. Though this incentive policy is focused primarily on employment metrics, it provides insight into employment-related metrics and illustrates potential mechanics for scoring.[1]

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Table 1 : Mutually Exclusive & Summation Categories

	Mutually Exclusive		Cumulative	
Category	*Wage Level of New Jobs*		*Quality of New Jobs*	
Maximum Points		10		10
Scoring Options	Less Than County Average	0	Partial Employer Paid Health Insurance	1
	County Average	1	Entire Employer Paid Health Insurance	3
	Greater Than County Average, but Less Than State Average	4	Retirement Benefits	2
	State Average	8	Profit Sharing	2
	Above the State Average	10	Employer Paid Vacation	2
			Employee Owned Company	3

Strategic Plan for Small Business Development at the 11th Street Bridge Park - 2016

The 11th Street Bridge Park is highly regarded for its Equitable Development Plan and use of metrics to set clear goals and objectives. Alongside the Equitable Development Plan, a wide range of impact assessments and plans have been developed. Perhaps most relevant for the Dix Park scoring framework is the Strategic Plan for Small Business Development at the 11th Street Bridge Park.

In order to meet its goal of supporting small, local businesses, the Strategic Plan seeks to establish the Bridge Park Incubator, a new entity created to staff, train, coordinate, and connect local entrepreneurs to opportunities to operate kiosk-based food service businesses. The Bridge Park Incubator would further provide subsidized rates for commercial kitchen usage and access to retail opportunities and capital.

The Dix Park Master Plan highlights a culinary incubator and food hall as potential programs for existing buildings on the park campus. This, in combination with the Dix Park Equity Framework, makes the Strategic Plan especially relevant as a framework for providing amenities to park visitors, infusing the local culture into the park, and benefitting local entrepreneurs. The Plan also describes a competitive selection process, and many of the factors assessed in this process could be applicable to the Dix Park Scoring Framework.

To maximize hyper-local benefits, the competitive selection process prioritizes entrepreneurs who live in the one-mile walkshed of the Bridge Park through a graduated-ranking system. The graduated ranking system prioritizes (1) applicants living in the target Bridge Park area, (2) then low-income applicants from across the District, and (3) applicants across the District regardless of income. Graduated ranking can be applied across a wide variety of scoring metrics and may be relevant for advancing community benefits at Dix Park.

The selection process also assesses applicants based on entrepreneurial spirit, product viability, and business maturity (aiming for a mix of established and new businesses) through a three-part process. The process follows a more traditional route, similar to a job interview, which includes a paper application, interviews, and a market simulation, rather than a scorecard.

Another note is that the Plan seeks to move businesses through recruitment and selection, incubation, and graduation, preparing the kiosk-based businesses to grow and succeed beyond the bounds of the park. If this type of model is employed by Dix Park, startups could begin their business cycle in the culinary center, a food hall, or even as a pop-up like a kiosk, and eventually grow to become an anchor, taking up individual space as the Department of Health and Human Services vacates additional buildings.[2]

Adaptive Reuse on Governors Island: Hub for Green Businesses and Nonprofits at Building 301 - 2020

Governors Island's most recent RFP, released October 21, 2020, provides another useful roadmap for evaluating prospective partners. The RFP focuses on a singular building that the Trust is seeking an anchor for and specifically outlines that the 301 building will be used as a "hub of commercial, non-profit, and/or academic uses related to sustainability and climate change." Applicants will be scored based on their proposed use and mission alignment (35%), background and experience (25%), proposed terms (25%), and feasibility and financial capacity (15%).

Though scoring within each category is not delineated, the Trust provides additional information about what information they are looking for from applicants. For example, in the proposed use and mission alignment category, the Trust asks respondents to "position their proposals in the context of both their own mission and vision, as well as the Trust's goals for the Building," and describe:

- The proposed vision and program for the Building;
- A description of the proposed use(s)'s consistency with Governors Island's vision for Building 301 and the Island;
- A description of any non-office uses proposed to be located on-site (i.e. food and beverage, event space, fabrication and testing space, etc.);
- A description by use of any desired space in other buildings on Governors Island;
- A description of any proposed additions or modifications to the architectural plans commissioned by The Trust for Building 301, and a conceptual program for the available space;
- A description of the Respondent's sustainability goals for construction of the Site and how they will be incorporated into the proposed renovation;
- A description of the Respondent's sustainability goals for the operation of the Site, including both Building operations and operations of businesses and/or programs therein; and
- Opportunities identified for engaging the Island's broad and diverse visiting public, the Island community, and New York City residents, including concepts regarding specific events, partnerships, and programs (e.g. events showcasing work of tenant companies to general public, partnerships with other on-Island tenants and licensees, employment training programs for for-profit enterprises, etc.).[3]

The categories used by the Trust for Governors Island, as well as the supplemental information for each proposal section, have informed the categories and scoring options included in the Dix Park Scoring Framework.

Takeaways from Case Studies

This section is a brief overview of lessons learned from case studies on park partnership selection methods. For more details on the research conducted, see our Case Studies document. Evident throughout is a tension between purpose of parks as public amenities and financing needs in an era of privatization. Each case study emphasizes different constraints Dix Park might face in choosing partners. The subsequent section on classic versus modern parks looks more closely at recent developments in park funding.

Balboa Park

Balboa Park illustrates tradeoffs between a park as a community asset and as a fiscally constrained entity, especially when it was not originally built as the latter. Civic and cultural partners can make a park into a more popular destination and more significant cultural hub, but they often need more public financial support, which has proven more difficult since the late 20th century. Efforts toward financial solvency through revenue-generating (more typically private) partnerships have been met with public opposition.

Balboa Park provides some guidance on purposing and planning partnerships for such a significant public space. The park delineates and prioritizes uses and activities by area and essentially stipulates that any new partners or tenants must preserve public and park purposes and uses, limiting building and commercial development. Though these are the blessings of a large open space in an urban area, Balboa Park showcases the difficulties that can come with them.[4]

Forest Park

Forest Park shows us the opportunity that Dix represents, as an example of a large, centrally-located park and a possible "end-state" for such an amenity. Important in any vision like the one being developed for Dix Park is the factor of time – it has taken Forest Park a long time to become the institution it is today. Most importantly, it is still evolving after almost 150 years, with questions remaining as to development of significant portions of the park. Dix Park must remain flexible, willing to wait to see its full potential achieved, and change as the city changes. What this means for partner selection is an imperative of patience.

Forest Park is another example of how funding for public spaces has changed. Having experienced budget problems for a long period, the park reorganized its management structure in the 1980s. While an increased portion of its revenue comes from tenants, most comes from a newly-streamlined private fundraising organization and process - partners are not the only potential source of revenue.

Governors Island

Governors Island has perhaps the most well-developed partner selection procedure of the parks we have studied. Half of the Trust for Governors Island's selection weight is in evaluation of the prospective partner's plans and in their organizational history and compatibility with the park's purposes. The process is adjusted and targeted to specific sites in the park through RFPs. Another important takeaway from Governors Island is the considerations specific to a "destination" park. Inaccessible except by ferry, Governors Island coordinates its partner selection around themes so that visitors coming for one thing will likely enjoy other available activities that interest them. Being cut off from downtown Raleigh by distance and other obstacles, Dix Park will want to consider similar measures to ensure visitors will find it worthwhile to go out of their way.

The stories of Balboa Park and Forest Park show us how public funding can prove fickle over long periods. With public budgets as beleaguered as they are now and the contemporary tendencies of philanthropy, partnerships with private, revenue-generating organizations are starting to seem necessary for more parks. Governors Island puts a significant share of priority (50%) in the

finance question when it comes to partner selection and has planned from its inception to act as a landlord, intending to eventually collect enough rental and other income to pay for itself, though fulfilment of this goal is still a long way off and uncertain.[5]

Atlanta Beltline

The strongest lessons on external equity among our case studies come to us from the Atlanta BeltLine. Crucial in its finance mechanism was an incentive toward gentrification and displacement in adjacent areas that eclipsed a more comprehensive vision for partnerships. Atlanta relied on a tax assessment district (TAD): a TIF-like arrangement capturing revenue based on the ensuing rise in property values to pay for the project. Revenue was the only consideration for partners at first, the only significant partnerships considered being residential developers for sites in the TAD area. The city did not consider using the revenue to mitigate these impacts until it was too late. Though it is difficult to balance such a strategy toward more just housing outcomes in the first place; Dix Park should essentially heed the lesson that matters of gentrification and displacement need to be factored into plans before they are enacted. Though addressing issues early is not certain to prevent problems, Atlanta shows us that there is a point past which it is definitively too late. As far as partnerships, Dix Park should consider partners on more than financial grounds, possibly considering public services or organizations that could help mitigate negative impacts in this area, maybe some off-site.[6]

Classic vs. Modern Parks

Two classic parks developed in the 19th century, Forest Park and Balboa Park, and two more recently developed parks, Governors Island and the Atlanta BeltLine, were selected for case studies. While classic and modern parks share many characteristics and a common mission to provide public benefits, the types of anchor institutions taking residence at the park differ fairly dramatically.

Table 2 : Anchors for Classic & Modern Parks

	Classic (19th Century Parks)	Modern (20th and 21st Century Parks)
Case Studies	Balboa Park, Forest Park	Governors Island, Atlanta BeltLine
Additional Examples	Exposition Park, Central Park, Lincoln Park, Golden Gate Park	Brooklyn Bridge Park, Mission Bay Park, The Presidio
Anchors	Zoo Performing Arts Venue Museums: Arts, Science, History Sports Venue City Operated Event Space	Functional/Operators, potentially related to a theme. Restaurants Entertainment and attractions Locally-focused Active Recreation - destination oriented, rentals Office & Retail Hotel or Residential

Classic 19th-century parks tend to focus on civic institutions, like zoos, performing arts venues, and museums. Forest Park in St. Louis is a very pure example of a classic park. Large grassy expanses fall between the park's five key anchors: the zoo, a performing arts venue, an art museum, a science museum, and a history museum. Balboa Park in San Diego has a similar tenant base, including a zoo, several performing arts venues, and a multitude of museums, but with a larger portfolio of buildings, Balboa Park has been able to house a wide variety of unique museums and cultural institutions, such as the Comic-Con Museum and the Centro Cultural de la Raza, a community center and museum dedicated to Chicano arts and culture. Other 19th-century parks that include these types of anchor institutions are Central Park in New York City, Lincoln Park in Chicago, Golden Gate Park in San Francisco, and Exposition Park in Los Angeles.

Exposition Park departs from the classic model the most. Exposition Park is primarily owned by the State of California, rather than the City of Los Angeles, and in addition to several museums, Exposition Park is anchored by the Los Angeles Memorial Coliseum, home to the University of Southern California football team, and the recently (re)developed Bank of California Stadium, home of the Los Angeles Football Club (MLS). According to the park's master plan, maintenance and operations are fully funded by revenue generated at the park. Revenue comes primarily from parking revenue and agreements with the operators of the two sports venues, rather than from the civic institutions and museums housed at the park.[7] This funding mechanism aligns Exposition Park more closely with modern parks, many of which have mandates for financial self-sufficiency and more profitable anchor institutions.

Governors Island is another such park – it has a mandate to fully fund operations and maintenance with park revenue. The Atlanta BeltLine is funded through private development in adjacent Tax Assessment Districts. Brooklyn Bridge Park and the Presidio in San Francisco have similar mandates for financial self-sufficiency,[8] and though Mission Bay Park does not have this same mandate, the ground leases at the park fuel the city's General Fund. Revenue generated covers Mission Bay operations and capital improvements, as well as capital improvements at other developed regional parks in San Diego, including Balboa Park.[9] In part because of these financial goals, modern parks tend to have more functional anchoring institutions that coalesce around the park's themes, activate the park, and generate revenue, in addition to providing public benefits.

Governors Island is a strong example of theme-based partner selection in a newer park – it has sought tenants that cohere around the themes of arts, education, and the environment. The Lower Manhattan Cultural Council, Spaceworks, and the Shandaken residency program relate to the arts. Environmental partners include the Climate Museum, partners that have established composting, farming, and beekeeping initiatives, and a proposed "Climate Solutions Center".[10] Educational partners, including the New York Harbor School, a public high school focused on maritime studies, as well as Syracuse University's MFA program and the Parsons School of Constructed Environment, focus primarily on the study of arts and the environment.[11] Functional anchors at other modern parks vary widely: Brooklyn Bridge Park has multifamily residential, retail, and office anchors which activate the park at all hours, Mission Bay Park anchors are singularly focused on recreation and recreational tourism and the Presidio includes housing, hotels, offices, and museums. These anchors are far more diverse than those found at classic parks, and bring people to the park not only for play, but also to live and work.

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Asset Inventory & Partner Scoring Methodology

Asset Inventory

In pursuit of the first objective of the Partnerships & Anchor Study (identifying the range of anchors necessary to support Dix Park as a local and regional destination), the team took a multi-pronged study approach. Through case studies, we identified salient characteristics, priorities, and activity themes among peer parks (see Takeaways above). In particular, we sought to understand how peer parks use partnerships to achieve the core principles and fulfill the programmatic themes of Dix Park Master Plan (see Table 3).

In addition to taking a needs-based approach, we also drew inspiration from Kretzmann and McKnight's (1993) asset-based community development (ABCD) model. An "asset" is considered to be any gift, skill, or capacity that exists within a community at any level: individual people or groups, organizations, and institutions. The ABCD model starts from the assumption that all communities have existing assets, and that they are powerful in developing and realizing a community vision.[12] Assets need to be mobilized, supported, and nurtured by entities such as Dix Park. With this in mind, and the near universal interest of Raleigh organizations (and beyond) to take up residence at the park, we re-framed the initial objective to also ask, "who are the potential partners for Dix Park? What kinds of assets do they have capacity to contribute? In what ways can these potential partners and anchors solidify Dix Park's position as a local and regional destination?"

Identifying and cataloguing assets are preliminary steps in the ABCD process; these steps can be guided by administering a "capacity inventory," a survey or line of inquiry to capture details about the resources, skills, location, and structures of valuable individuals or groups. Our line of inquiry is represented in Document 2, Sheet 2; this serves as a worksheet, or a checklist, that can be completed to describe the key elements for each potential partner. We describe these "key elements" and how they were selected in the Rationale Behind Scoring Categories section. It provides an organizational framework to understand the different dimensions of partners and their possible variations. The asset inventory database serves as a collection of each worksheet; we operationalize the database and explain how to use it as a monitoring tool in the Using the Database Going Forward section.

Dix Park Themes

Governors Island focuses their search for park anchors around key themes, which allows prospective partners to align with the park's mission, collaborate with one another, and also provides a clear expectation of the types of experiences available at the park to prospective visitors (The Trust for Governors Island, President's Report). The Dix Park Master Plan similarly provides programmatic themes for the park, which also apply to the range of anchors and partners needed at the park. The themes of Arts & Culture, Wellness & Play, History & Reflection, Gardens & Ecology, and Food & Community identified for programming have been expanded upon based on the Master Plan's Core Principles and Key Actions (see Appendix 1) and community desires outlined in the section, "A Great Park for Raleigh," for the categorization of potential park anchors.

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Table 3 : Dix Park Key Themes

Theme	Description
Arts & Culture	The Master Plan calls for the integration of creative expression, spaces for performance and exhibition, local and regional arts of all forms, and highlighting the work of local artisans. As such, the park should seek to partner with local artists, organizations that have missions related to arts and/or that provide programming related to the arts. Cultural and civic institutions are also included in this category.
Wellness & Play	The park's legacy as a place for mental and physical healing should be integrated into its future as a recreational asset. Organizations that promote physical, mental, and social health, and/or provide related services, as well as recreational organizations and organizations that provide opportunities for experiential education should be sought for partnership.
History & Reflection	Community feedback emphasized the importance of illuminating the site's complicated history as a potential Indigenous American hunting ground, a plantation whose success is due to the labor of enslaved persons, as a site occupied by Union troops during the civil war, and as a mental hospital founded by Dorothea Dix, a 19th century pioneer in the field of mental health. Organizations that provide opportunities for education and reflection regarding the site, local, regional, and state history, particularly of those communities most impacted by the site, should be included.
Gardens & Ecology	Organizations that contribute to the restoration of the Rocky Branch and reintroduction of native species are prioritized by the Master Plan, but additional partners and organizations related to the environment should be sought for residence at Dorothea Dix Park.
Food & Community	The most prevalent theme in the Master Plan is the goal of creating spaces both reflective of and for the community. Partnering and providing space for community-rooted organizations to operate and for residents to gather is critical to creating a sense of community around the park. Additionally, food has been noted as a key component of Raleigh's culture. Partnering with local restaurateurs and food entrepreneurs can not only create critical park amenities, but reflect the existing and vibrant local culture.

Column Headers

The multiple prongs of our approach--drawing from both the Dix Park Master Plan and peer parks, and investigating organizational capacities--came together in developing the key elements of the asset inventory (see Document 2 Sheet 1). Key elements are represented as column headers, which are independent and variable, described by the list of options. For most columns, the options are not mutually exclusive (i.e. more than one description can be selected); we describe exceptions to this rule for "duration," "audience," and "financial impact." For a visual layout of how these elements are recorded, see Figure 1 at the end of this section.

The first element is "theme," which can be described by any of the six programming themes outlined in the Dix Park Master Plan. Next, the "facility type" column lends specificity to the program theme, outlining how the program is realized or what kinds of activities the potential partner might operate. The current list was drawn from examples in the Dix Park Master Plan and case studies, but the list of options in this column may expand over time as new opportunities arise.

The next three columns, taken together, describe the extent to which potential partners may serve as "anchor institutions" at Dix Park. The first of these, "proposed residency status," describes the way in which the potential partner may occupy space at Dix Park: on a permanent basis as the organizational headquarter or secondary location, or on a temporary/per-event basis, as a vendor of amenities. Partners with more permanent and long-term residence at Dix are more likely than temporary ones to serve as anchor institutions. The Forest Park case study, in particular, guided the delineation of these options, and they roughly align with "duration," or the length of time that we would expect the partner to "live in" or take residence at Dix. For example, ad hoc or programming partners are likely to be "short-term" partners, whereas "permanent" residents (with either main or satellite locations at Dix) are likely to remain in the park for extended periods of time. In the middle, "operators/vendors," in the case of Forest Park, were selected through RFPs every 5 years and may be characterized by "mid-term" duration. While there are likely going to be common combinations between residency and duration, these are not strictly aligned. Taking the case of Forest Park again, Shakespeare Festival St. Louis (SFSTL) inhabits the park only during the summer months (as an "ad-hoc/programming resident") but has a long history of production there and is therefore a "long-term" partner. While SFSTL performs all over the city and does not have a main stage, it has a relatively high level of permanency through its long legacy, and the field where its annual performances take place is named "Shakespeare Glen." We use this as an example to demonstrate the intricacies and variations in the "proposed residency status" and "duration" columns. Likewise, the options in the "audience" column roughly map onto residency and duration, and correspond with likelihood of being an anchor. For example, one-off events or temporary installations will likely draw a nearby audience of neighborhood and city residents. More distant visitors may come to the park for long-term programming partners or institutions who will reliably be present, but, on the other hand, may also be drawn in by niche programs or landmark events, even if they are fleeting. The range of options in the "audience" column is intended to represent the ideal that Dix Park is a park for everyone, both a local and regional destination.

The next three columns collectively outline the ways in which potential partners benefit or serve the Dix Park community. The "community capital" column aims to embody the philosophy of the ABCD model; namely, that potential partners have unique capacities and resources (or types of "capital"), and can nurture these within the community. The specific options for this column come from Texas A&M AgriLife Extension.[13] The "administration" column describes the financial structure of the partner, implying service, advocacy, governance, commercial, or other roles. While "administration" is internal to the organization, "financial impact" explains the likely net effect that the potential partnership will have on Dix Park's balance sheets; this may be determined by the combinations of rents paid or leasehold improvements/capital invested by the partner, versus subsidy provided by the Raleigh Parks Department.

Finally, "relationship origin" and "affiliation" aim to contextualize the interest in partnership from both the organization and Dix Park.

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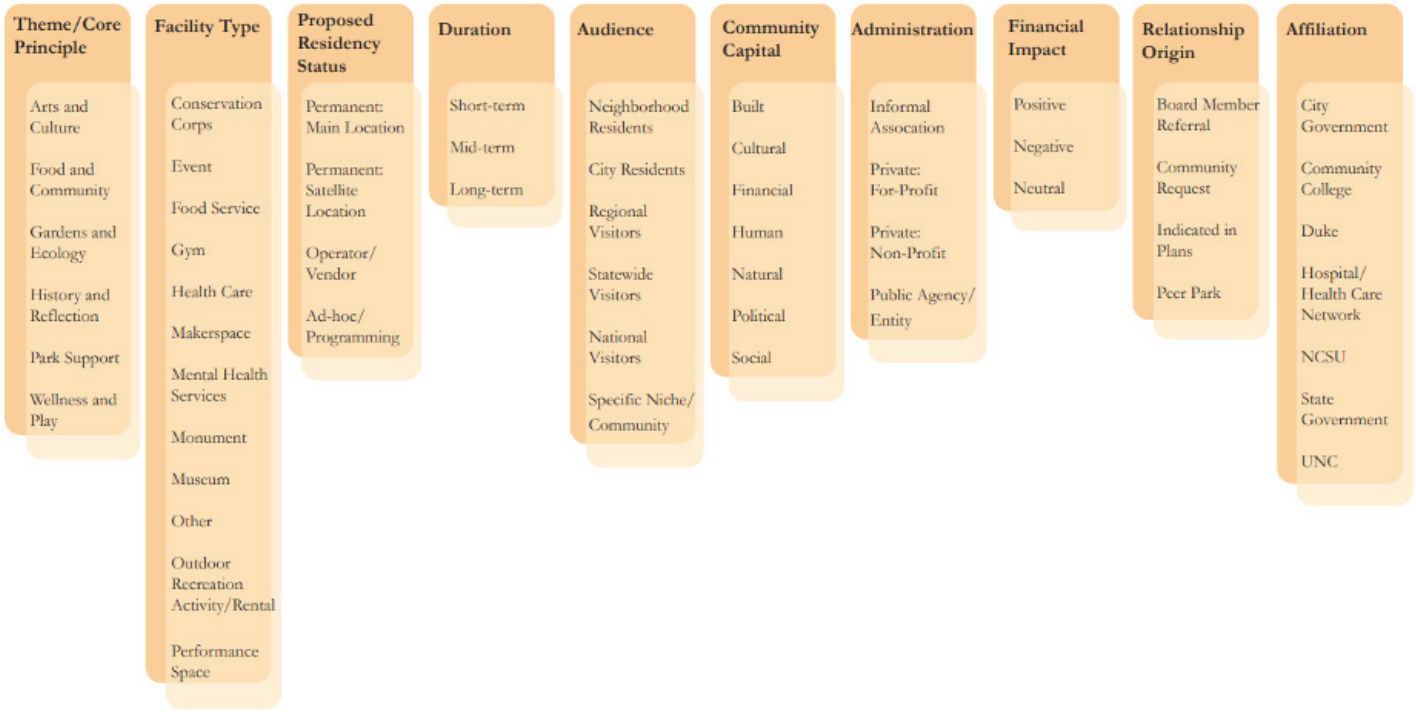
Fig. 1 : Diagram of Categorical Options for Partner Asset Inventory



Using the Database Moving Forward

While Document 2 Sheet 2 functions as a worksheet, to describe a singular potential partner, Sheet 1 serves as a repository to capture the entirety of potential partners. Translating the worksheet to the database, each row represents a unique organization/potential partner, and the columns are filled out with the appropriate options, as described above.

The primary sheet of Document 2 is the running list of potential partners (sheet titled "Potential Partner Database"), and this is accompanied by:

- the "Potential Partner Summaries" sheet, which contains a pivot table to cross-tabulate and filter organizations with specific characteristics
- the "Peer Park Anchor Partners" sheet, which applies this organizing format to examples from the case studies to demonstrate;
- the "Dropdown Source" sheet, which is the reference source for the drop-down menus;
- and the "Dictionary" sheet, which provides an explanation of specific column headers and their options, as was done in the previous section.

We tested the comprehensiveness of columns and options in the Document 2 Sheet 2 worksheet. We expect the Dix Park team to add to this sheet regularly, but we recommend that the team clarify the "Potential Partner Database" (Sheet 1) to organize the many organizations interested in taking residence at and partnering with Dix Park. We developed the "Potential Partner Summaries" sheet (Sheet 2) to be dynamic in counting different combinations of attributes, which can help identify potential partners to compare in the scorecard.

The Dix Park team may consider adding another sheet, which is similar to the "Potential Partner Database," but for partners that are actually selected or actively engaged. Similarly, the team can replicate the "Potential Partner Summaries" sheet to use as a tool in describing the range of partners already engaged and identifying gaps and opportunities.

Partner Scoring Framework

The scoring framework (Document 3) was developed to operationalize the information in the Asset Inventory (Document 2) and assist with the evaluation and selection of partners (objective #2). Like the Equity Scorecard, this tool can be used to compare similar potential partners identified through the Asset Inventory filters for overall score or within a specific range of criteria. It may also be most valuable as the first step in decision making, determining a minimum level of acceptability rather than dictating absolute rank among equivalents. After all, the priorities and needs of the Dix Park team will likely change over the course of development, and there may be determining factors that are neither adequately captured by the framework nor easily measurable. For these reasons, the scoring framework permits flexibility through variable weighting and should be seen as a complement to other decision-making processes.

In line with the Balanced Scorecard Approach (BSA)[14], this scoring framework aims to transparently communicate Dix Park's strategies and goals, but simplifies the burden of measurement.[15] While BSA incorporates financial measures, it does not depend upon them, which is important for public agencies and government services which are driven neither by a financial strategy nor an outcome goal alone.[16] Capturing the full range of organizational performance, BSA uses four evaluative perspectives (financial, customer & stakeholder, internal processes, and organizational capacity). As such, the Dix Park scoring framework establishes key criteria across 5 categories: fit, visitorship, suitability, finance, and equity. Through content analysis of the Master Plan and conversations with the Dix Park team, these categories were selected as evident priorities; visitorship and finance were also developed with insights from peer park case studies in mind (See Case Studies document and above synopses of Balboa Park and Governors Island). Moreover, each category is roughly aligned with a BSA perspective (finance, as similarly stated; visitorship to customers & stakeholders; programming to internal processes; fit to organizational capacity; and equity to a combination of elements).

In the tool, each category has an independent spreadsheet which is organized into subcategories and specific objectives. For each objective that the potential partner meets, 1 point is assigned. For simplicity, all objectives are scored on a binary (earning 1 point for "yes, meets the objective" or 0 points for "no, does not meet the objective"). There is a notes column to describe the provision (or lack) of points and to reference source materials. There is also additional space on each individual spreadsheet for additional considerations or for added explanation of point allocation. The raw scores from each category populate into the main template for a maximum total of 55. Variable weights can be assigned to each category to generate a new total score. To add context, the achieved score is also presented as a percent of the total possible weighted score. The process of weighting is not only a way to maintain flexibility within the framework, but is also an opportunity to engage existing partners in the decision-making process through criteria prioritization.

Fit, visitorship, programming, finance, and equity serve as the organizing priorities for the scoring framework. Each is scored with granularity through subcategories and specific objectives, and is discussed in greater depth in the following section.

Rationale Behind Scoring Categories

This section details narratives behind the scoring layouts for each partner evaluation category and describes ways Dix Park can solicit the information required to complete the evaluation. We believe the value of our work in devising a scoring system lies more in our extensive survey and consideration of issues than in advice on their importance relative to each other, but we aim to provide here some context for why certain issues and information might be important. This section

aims to inform the weighting process, with the following sections corresponding to components of the score card.

Fit

The Dix Park Master Plan creates a vision for a dynamic park that offers something for everyone.[17] Partners and anchors should fit within this vision and actively engage with it. Fit with the park's vision can be evaluated based on the prospective partner's alignment with program themes, the community capitals they represent, and the programming initiatives that the partner plans to bring to the park.

Fit is measured through 10 distinct criteria, each with a binary indicator. In order to score prospective partners, the applicant should provide information regarding their mission, their vision for the use of space at Dix Park, how they view themselves fitting into the park's key themes and core principles, the type of community capital their partnership would most promote, and their ideas for events and programs.

Program Themes

Drawing inspiration from Governors Island, key themes for park partners have been identified for Dix Park through content analysis of the Master Plan. The key themes of Arts & Culture, Wellness & Play, History & Reflection, Gardens & Ecology, and Food & Community were derived from the Master Plan's Core Principles and Key Actions, community desires outlined in the section "A Great Park for Raleigh," and Program Themes.

Table 4 : Example Anchors by Theme

Theme	Examples
Arts & Culture	Performing arts organizations, amphitheater operator, artists' studios and galleries, makerspace, related non-profit offices, cultural events operators, cultural institutions
Wellness & Play	Healthcare organizations, recreation businesses, recreation rentals, camps, related non-profit and advocacy offices
History & Reflection	Institutions with history exhibits, non-profit and advocacy offices
Gardens & Ecology	Garden clubs and societies, birding societies, sustainability groups, environmental learning center, related non-profit offices
Food & Community	Community group and non-profit offices, event hall operator, restaurants, food hall, culinary center, incubator kitchen

Governors Island identified the key themes of arts, education, and the environment for overall park development. Clear articulation of these themes allows partners to align with the park's mission and collaborate with one another. Selecting partners that fall within the themes also facilitates a positive visitor experience - a visitor may come to the park to visit one anchor partner, but find complementary activities and experiences offered by other partners once there.

Governors Island issues RFPs for partner selection. Each RFP identifies the theme the partner should fill, and scores potential partners based on their own mission and vision, as well their fit with the park's goals for the space the partner is applying to reside in. For example, the park's most recently released RFP specifically outlines that the 301 building will be used as a "hub of commercial, non-profit, and/or academic uses related to sustainability and climate change".[18]

The scoring framework has been set up for the early phases of park development. When few buildings and sites are occupied, recruiting a diverse range of partners will be important to providing a robust park experience for visitors, and at present, Dix Park does not value one theme over others. As such, the Program Themes sub-score is evaluated by three objectives with binary indicators, asking does this partner fit with one of the park's key themes, does it fit with two or more key themes, and does it fill an identified gap in the program themes? Cumulatively scoring these three questions prioritizes partners that meet multiple key themes early in the development in order to provide a robust visitor experience when the park has few occupants, and prioritizes partners that fill a programming gap as more anchors come on board. This should serve to recruit a diverse range of partners that meet the use goals identified in the Master Plan.

In the future, Dix Park management may opt to evaluate potential partners in a manner that more closely resembles Governors Island, explicitly stating which theme they hope to fill in a particular space and evaluating potential partner's mission, vision, and offering for alignment with that theme. The first question does this partner fit with one of the park's key themes[19] could be replaced by the question, does this partner fit with the [Arts & Culture, Wellness and Play, History & Reflection, Gardens & Ecology, or Food & Community] theme, placing more points, and therefore more importance, on filling the gap in a particular programming area.

Community Capital

Evaluating if and how a potential partner promotes various types of community capital is an integral aspect of the organization's fit within Dix Park. Community capitals are "resources and characteristics identified with successful and sustainable communities".[20] There are seven community capitals that interact to create dynamic systems, such as regional destination parks: built, cultural, financial, human, natural, political, and social capital. The asset inventory described above assesses the various community capitals as they currently exist in Raleigh and the Triangle, and provides examples of the variety of community capitals which are found in peer parks and make them successful and sustainable. A wide variety of community capitals should be represented in order for Dix Park to become an attractive regional destination in the Triangle and beyond, and selected partners should contribute to this effort.

The community capital sub-score is evaluated using three objectives with binary indicators. The first and second objectives assess whether the potential partner promotes one, or two or more of the distinct types of community capital. The third objective evaluates whether a partner would fill a gap in community capital: in other words, if "political capital" had been underrepresented in existing partnerships at the time of selection, and a potential partner would promote political capital, this objective would allow a small boost to the partner's overall score.

Programming Initiatives

As indicated through case studies of Forest Park and Governor's Island, programming is an important element of park planning. A robust range of program offerings enables a park to meet its goals and reach a diverse audience of visitors. Conversations with Dix Park planners revealed the desire to follow Forest Park's approach and transfer much of the programming charge to park anchors and partners. Therefore, evaluating programming initiatives is key to fully capturing a potential partner's fit within Dix Park.

Programming initiatives are evaluated using four criteria, each measured with a binary indicator. The first objective aims to assess if a potential partner will provide programs and activities that actualize Dix Park's Master Plan while remaining responsive to change. This objective speaks to a partner's ability to serve as a sort of proxy for accomplishing Dix's goals. The second and third objectives, related to the range and type of experiences for park visitors, seek to evaluate a partner's diversity of program offerings. These objectives are pulled from content analysis of the Dix Master Plan and aim to incorporate the idea of an equitable programming dimension at Dix Park.[21] The fourth objective attempts to determine if the potential partner can provide programming in a specific area or category. This could be related to a program theme, community capital, equity dimension, or other identified need. As with program themes and community capital objectives, this objective can be changed to include more specific language if the park is looking to include/exclude particular program types in the future.

Visitorship

Dix Park aims to attract a diverse and engaged audience (and should collaborate with partners to achieve this goal through the evaluation of potential partners based on whether they will help the Park achieve a robust visitorship, diverse audience, and a desired pattern of attendance.[22] These categories can be measured by 10 distinct criteria, each with a binary indicator.

Anticipated Visitorship

The first subcategory, anticipated visitorship, focuses on the projected number of visitors that the partner would attract. The first two indicators assess the number of daily visitors and special event visitors to the partner, seeking to determine whether these projected numbers are appropriate for Dix Park's goals. These follow the criteria employed by Governors Island.[23] These numbers should be supported by past attendance records, if applicable. The final criterion for this subsection asks whether the partner has a demonstrated ability not only to attract the projected number of visitors but also to handle the operational requirements for the projected visitorship. Partners should provide a plan to attract and manage visitors and include relevant information about past experience. This criterion mirrors the indicators for demonstrated financial capacity outlined below.

Anticipated Audience

The second subcategory, anticipated audience, focuses on characterizing the visitors that the partner plans to attract. First, the partner should articulate its core and target audiences through a narrative description with particular attention to if or how the audience for the Dix Park location will differ from the audience at previous sites. This process of articulating audience personas for discrete audience segments, a popular practice in marketing,[24] will not only demonstrate whether the partner's audiences match with Dix's goals but also encourage the partner to develop an audience strategy. Dix Park should then assess whether this strategy matches or supplements the Park's own core and target audiences. Second, the partner should provide any available demographic information about its experienced or projected visitors. This breakdown will likely take the form of a zip code analysis, a common measurement for visitor diversity implemented by Governors Island and many other organizations, but partners should

also provide a narrative description that can help Dix Park determine whether the partner's audience include groups that are currently underrepresented in the Park's audience.[25] Using this information, Dix Park can also determine the answer to the third criterion, which is whether the partner advances Dix Park's geographic reach to a regional or national audience. Finally, the partner should describe the audience of particular special events or programming, and Dix Park should evaluate whether these events might attract a diverse audience distinct from daily visitorship.

Anticipated Pattern of Attendance

The third subcategory evaluates the partner's pattern of attendance. Responding to the concern from Forest Park that some partners, such as the Steinberg Skating Rink, leave seasonal gaps in the park's programming calendar, the partner should provide a projected distribution of visitors across a 12-month year. The first two indicators determine whether the partner's projected visitorship is evenly distributed throughout the year and whether the partner might fill under-programmed gaps in the Park's calendar. For example, if the Park has many partners that facilitate summer visitorship, but fewer that offer programming suitable for the winter months, an ice-skating rink would score in the affirmative on this criterion. Finally, the partner should articulate a long-term plan for repeat attendance. While the Park will want to involve a diverse array of partners, some of which visitors may only go to once, a long-term strategy that builds stable audience relationships will necessitate anchors characterized by repeat visitation.

Financial Viability

Suggested finance-related information to seek from prospective partners:

Current operating budget, fundraising/contribution sources

Park will want to know the prospective tenant's internal financial picture – documents in this category will answer the capacity side of the equation and some of the cost side (labor).

Plans for modifications, estimations of service and programming costs

Park will need to know what a prospective tenant needs beyond the amenities of the site as it currently exists. Part of this might be requiring an applicant to submit a site plan if changes are large enough.

Rent-related documentation

At Governors Island, prospective tenants propose rent rates for the first year and are told to account for maintenance and service costs as well as an annual 3% increase.[26] This helps the Trust gauge the financial picture of a possible partner further. Barring this, the park should weigh a prospective partner's financial capacity against any rent structure it plans to enact, propose or request. Maintenance and service costs for other parks are often separate from rent, and potential partners should be made aware of these factors and address them in the manner the park has decided.

Scoring:

Our framework for scoring the financial viability of a potential partner and project depends on information in three main categories. The first is an organization's internal financial picture. Answers to questions in this category will come from current budget documents statements provided by the organization. This will tell the park whether the potential partner is financially competent at a basic level, without taking on the project it proposes.

The second group of questions, focused on the costs of the proposed project and operation, will be

answered by plans and other parts of the requested proposal. The corresponding part of an RFP would seek to remind applicants of the costs that would come with the proposed project and ongoing programming, and encourage more thorough planning. These questions will assess a prospective partner's financial ability to go beyond its current operations.

The last scoring section deals with the thoroughness of the information provided by the prospective partner and the partner's longer financial history. The question, on track record and history, may be answered by research or basic knowledge, if the organization does not provide satisfactory financial history information.

We want to emphasize flexibility and discretion of the park in weighting within the scoring framework for financial viability. Many potential partners may be startups or have unconventional funding structures. The past may also not define the future, and some of these objectives may not always be appropriate. Tenants need time to develop operational efficiency in new settings, and people need time to discover a park.

As with all of our score criteria, Dix Park team members and authorities would decide on the ultimate weight of a financial suitability score in the overall score.

Suitability

A partner's suitability refers to the potential for a match within the existing framework of the park, both through filling physical gaps and bridging needs for complementary uses. This can be evaluated through the partner's potential for adaptive reuse, which has been indicated a priority form of development by the Master Plan. Additionally, a partner's intended use of facilities and occupancy needs can provide insight into the way space is utilized throughout the park, with the goal of maximizing benefits. Finally, by identifying existing relationships between potential and planned partners, the Dix staff can ensure that the uses throughout the park are harmonious. Each of these three categories will be assessed by three objectives, measured with binary indicators, to give a total suitability score.

Adaptive Reuse

The Dorothea Dix Park site has a rich history in the Raleigh area, as recognized in the Master Plan. One of the core principles found in the plan highlights the importance of "building from what is there," in a way that honors the legacy of the site and takes advantage of the existing opportunities for restoration, reuse, and rehabilitation. There are over 80 existing buildings on the Dix site, which are in varying states of suitability for reuse, and the Master Plan details both suggestions for buildings to be repurposed and programmatic ideas for these buildings.[27] The first objective asks whether partners fit within an existing space intended for adaptive reuse as indicated in the Master Plan, as these would be ideal candidates for adaptive reuse. This can be identified by evaluating the physical needs of the partner, in order that they be matched with suitable spaces, such a single office room, a restaurant with a kitchen, or an auditorium. The goal of this objective is to minimize the need for construction or other drastic changes to the site by reusing what is already there. The second objective accounts for the fact that the Dix Park planners may also have prioritized specific buildings to repurpose, due to their contribution to the integrity of the park, desirable location, or ability to be restored with minimal costs. Partners who can fill the need at these vacant spaces should be given high priority, particularly during the early phases of park development. Finally, the third objective highlights that park planners should also consider the historic significance of the targeted building and its associated legacy. By predetermining the significance and themes, if applicable, during an inventory of existing buildings, planners can evaluate whether their understanding of the proposed partner and their intended use of park space will align with that of a specific building designated for reuse.

Facilites & Occupancy

In addition to prioritizing the adaptive reuse of existing facilities, the scoring framework evaluates partners' proposed occupancy through three objectives with binary indicators.

The first objective asks does this partner align with a residency need identified by Dix Park? Dix Park will seek a variety of different types of partners: Those that aim to have Dix Park as their primary or permanent location, those that are seeking to expand on an established headquarters with a satellite location in the park, and particularly in the short term, those that seek ad hoc residence in Dix Park for an event or season, like Forest Park's Shakespeare in the Park.

The second objective asks, can this partner share facilities with one or more existing or planned partners? Several high-priority buildings, such as the Historic Hospital, are proposed for use by multiple organizations in the Master Plan. For example, under the 'regional attractions' program proposal, a hotel and a restaurant would share facilities with community spaces such as meeting rooms. For these high priority buildings with significant square footage, the ability to share facilities with other organizations is an important criterion for occupancy. This criterion may shift over time to prioritize partners that can occupy an entire building: As more spaces are vacated by the Department of Health and Human Services, and as smaller spaces in critical condition, such as the cottages, are made ready for tenants by Dix Park and the Conservancy, partners that have the ability to occupy whole buildings may take precedence over the ability to share facilities.

Finally, the third objective asks does this partner's occupancy activate the park at an existing low-activity period? The Master Plan places importance on park activation, and as Jane Jacobs writes in the Death and Life of Great American Cities, "people do not use city open space just because it is there". Successful parks have a wide range of users that visit during different times of the day and week. In the case of Dix Park, which is large and somewhat isolated from surrounding uses, prioritizing partners that bring in visitors to the park during low-activation periods, such as weekday evenings, will aid in activating the park and keeping it dynamic and safe. This criterion mirrors the Visitorship criteria regarding the anticipated pattern of attendance.

This category can be scored by the management team with information provided by the applicant related to their vision for the use of space, events and programming offered, and information about their projected employment and/or visitorship. The information required for Visitorship section scoring should be supplemented with a projected distribution of visitors across a typical week for the Facilities and Occupancy sub-score.

Relationships with Existing & Planned Partners & Anchors

In order to draw a diverse visitorship and truly offer something for everybody, Dix Park must ensure that each partner selected for residence or programming within the park complements other partners and anchors, both existing and planned.

This sub-category asks whether a partner achieves each of three objectives and assigns a binary score based on the answer, yes or no. The first is whether the potential partner has an existing relationship with Dix Park. The second is whether the partner has an affiliation with any existing or planned partners or anchors in the park. These two objectives are purposefully vague, and are not intended to give outsize priority to partners that are already known to the park and to other partners; rather, the hope is that these existing relationships will provide useful evidence of connections between partners that will allow for the complementarity described above. This element of scoring also makes room for Dix to consider the importance of maximizing benefits to local small businesses, perhaps those whose owners live within a certain radius of the park, as in the case of the 11th Street Bridge Park Strategic Plan for Small Business Development.[28] If at a certain point, the Dix Park team determines that there is less of a need to include these objectives in the scoring, they can be discarded. Finally,

the third objective is that the partner is not in conflict with any other partners or with surrounding uses. This objective can be assessed in multiple ways, such as through engagement with the surrounding community to ensure that its needs are being met, as well as through engagement with existing partners or an assessment of various partners' goals and mission statements. For each of these objectives, an answer of "yes" would give a score of 1 for that objective.

This category can be scored by the park management team using information from the potential partner about existing affiliations and connections with the Park or with other Park partners, where the partner sees itself fitting within the existing park ecosystem, and how the partner expects to respond to the needs of the local community.

Equity

The seven categories for equity were adapted from the Dix Park Equity Plan Framework. These were created to guide how Dix Park can inclusively and equitably support its community, layout principles, strategies, and desired outcomes in areas of equity relevant to Raleigh, and ensure Dix delivers the promise of "A Park for Everyone, Built by Everyone".[29] The programming dimension in the Equity Pan was not included as it is incorporated throughout the entire partnership scorecard, falling cohesively into categories within Themes, Financial, and Visitorship. These themes also complement the work done by our colleagues on the Equity Indicators team, and the objectives chosen for the scorecard were adapted from their chosen indicators for consistency in scoring and articulating equity. This collaboration allowed for a comprehensive look at equity in deliverables for Dix Park.

Accessibility

The Dix Park Master plan proposes various programmatic uses and park spaces that span across many different interest areas and uses. As a "Park for Everyone", Dix Park must meet this commitment through universal design and inclusion standards that consider the full range of abilities represented in the community. Additionally, access to programs and services is also essential to ensure the participation of a diverse range of potential park users. This category included components of Universal Design while not specifically basing scores off of infrastructure. This category hopes to capture components of the accessibility of services and programming provided by the partner. A partner gains points for accessibility if the services offered are in diverse languages, are for different levels of ability, and if programming and services are offered outside of typical business hours of Monday to Friday, 9AM-5PM. Dix Park should collect information from the partner about the languages used for programming, engagement, services, and decision making. Additionally, Dix should ask about the typical hours and days the partner hopes to engage with visitors of the park.

Affordability

The Dix Park Master plan proposes various programmatic uses and park spaces that span across many different interest areas and uses. As a "Park for Everyone," Dix Park must provide opportunities to participate in programs and services provided by partners regardless of financial ability. The partnership process will continue to build on the success in maintaining affordability that is already seen by Raleigh Parks, Recreation, and Cultural Resources. Additionally, this subcategory can encompass opportunities for long-standing local communities to live and work in the communities surrounding Dix Park. The scoring for the affordability category was devised to promote partners that offer opportunities to minimize costs. Points will be given to those who do not require fees from participants for use or service, sliding scales for charges on goods and services to meet needs of diverse participants, and the ability to accept multiple forms of payment, including but not limited to cash, check, credit card, EBT, and phone apps.

Engagement

Community engagement is a core part of the Dix Park Master Plan. Community feedback and engagement conducted by Dix Park and partners informed the creation of the core principles, key themes, and program themes that guide the future development of the park. The ability for community members to participate in partnership decision-making, as well as long-term park planning, regardless of identity is essential. The scoring for engagement prioritizes and incentivizes partnerships that focus on long-standing residents and are supportive of local business, letting the existing communities that surround Dix Park hold the park and potential partners accountable. Points are given to partners that provide services catered to long standing local residents and engage with long-standing local residents to make decisions about services and programming. Dix Park should collect information on the partner's ability to engage with current residents in the surrounding neighborhoods, such as their ability to hold focus groups or lead social media engagement. Additionally, Dix Park should collect information on the partner's ability to be flexible and change their programming and services over time after receiving feedback from engagement, so that if underrepresented groups and local residents are interested in one aspect of the partner's services more than another, being able to pivot and change plans is in the partner's capacity.

Environmental

Sustainable systems are an important aspect of the Equity Plan Framework. As partners find temporary or permanent homes in the park to administer programs and services, having sustainable practices that are managed and maintained will lead to the longevity of the park and the natural landscape—this is especially important given the size of the park and the sheer number of potential partners it could house. The environmental score focuses on sustainability and respect and care of Dix Park by partners. Points are given to partners that are committed to sustainable businesses practices and employ environmentally sustainable landscaping practices and stewardship of Dix Park's land.

Economic Opportunity

The Dix Park Equity Plan Framework values the distribution of economic development opportunities through onsite development, programming, and events. Opportunities exist from pre-build to and through construction. Opportunity across industries should be equitably distributed. An essential part of this sub-score is the provision of opportunities for diverse participants, including underrepresented populations and long-standing local residents. The scoring framework for economic opportunity focuses on equitable strategies to support those employed by partners. Points are given to partners that create employment opportunities for historically-underrepresented populations and/or communities surrounding Dix Park, and the ability to pay employees an hourly wage at or above the Raleigh average.

Health

Health and wellness are explored extensively throughout the Master Plan. Health is also a Park program theme—the Park is envisioned as a place to practice many forms of health as a break from busy urban lives, to rejuvenate, to encourage mindfulness, and to experience the healing potential of natural spaces. The scoring framework for health has the foundational idea of prioritizing and supporting the health of historically-underrepresented populations. These objectives were more difficult formulate, based on varying definitions of health and how diverse identities start from different baselines, given their different lived experiences. However, wording was chosen carefully to try to capture this aspect. Points are given to partners that emphasize physical, mental/emotional, social, and spiritual health for historically-underrepresented populations through programming or services that promote social connectedness within and across diverse identities.

Legacy

Recognizing and honoring the layers of history and legacy of the Dix Park site is an essential component of the Dix Park Master Plan. It is critical that partners of Dix Park provide equitable exposure to the many elements of this site's history. Additionally, external equity for legacy honors the long-standing local communities surrounding Dix Park. The three layers of legacy of Dix Park extend beyond the park to the surrounding neighborhoods. Recognizing and preserving this integrated history is an important aspect of Dix. The scoring of this category is similar to Themes described above, and similar to the discussion around the program themes, not one of the three legacy aspects are more important than the other. To recognize the importance of diversity in the initial phases of establishing partners, partners receive points if they honor the legacy of one of the three historic stages associated with Dix Park, honor the legacy of two or more of the three historic stages associated with Dix Park, and fill a gap and honors an underrepresented stage of Dix Park's history.

Desk Pilot of Asset Inventory and Scoring Framework

In order to test the effectiveness of the Asset Inventory and the Scoring Framework, we ran a pilot of two potential partners that have either been named or demonstrate strong fit with the proposed programming outlined in the Master Plan. The selected partners are the African American Cultural Complex and a Marbles Kids' Museum satellite. Though the African American Cultural Complex has expressed interest in residing in Dix Park, this pilot is intended to be theoretical and is based solely on publicly available data. As such, this pilot should not be understood as definitive programming or scoring for either of these potential partners. Multiple assumptions were made in each pilot, and are noted in the attached Pilot Scoring documents.

The African American Cultural Complex

The African American Cultural Complex (AACC) is a non-profit organization officially established as a 501c3 in 1994 by Dr. and Mrs. EB Palmer, dedicated to preserving and showcasing outstanding contributions made by African Americans. The AACC operates history exhibits, holds an extensive African American folk music collection, hosts theatrical performances, runs educational programs, and has been recognized by Library of Congress as a Local Legacy. In 2000, the AACC had over 140,000 visitors, including groups from schools, churches, sororities and fraternities, and community groups, as well as individual visitors.[30] Key statistics detailed in the Asset Inventory are displayed in Table 5 below:

(continued on next page)

Table 5 : Asset Inventory for African American Cultural Complex

Partner	The African American Cultural Complex
Current Address	119 Sunnybrook Road, Raleigh NC 27610
Theme/Core Principle	History & Reflection, Arts & Culture
Facility Type	Museum
Proposed Residency Status	Permanent: Main Location
Duration	Long-Term
Audience	Regional Visitors
Community Capital	Cultural, Built
Administration	Private: Non-Profit
Expected Financial Structure	Neutral
Relationship Origin	Indicated in Plans, by Dix Park staff as interested party

The AACC is currently located in southeast Raleigh, housed on a property owned by Dr. and Mrs. EB Palmer that is leased to the museum for $1 per year. The site includes two parcels, one with the Palmer House, and a second wooded parcel with to the rear with three exhibit houses, a mini-amphitheater, a bird sanctuary, a picnic area, a botanical garden, and access to a nature trail.[31] The complex is located in close proximity to an existing bus stop (Sunnybrook Road at Kidd Road) and to the proposed BRT New Bern Avenue corridor.

Fig. 2 : AACC Existing Facilities

source: North Carolina Building Footprint Data

In 2019, the AACC submitted a proposal for residence at Dix Park to the Legacy Committee, and they have been cited in the Master Plan and by Dix Park staff as a desirable anchor tenant. Their stated goal in expanding to Dix Park is to "develop and present a history and cultural arts program in Raleigh, NC that will supplement the North Carolina school curriculum, the goals and objectives of the Dorothea Dix Park Commission, and those of the Raleigh City Council." Additionally, they aim to partner with and supplement the work of other museum programs, enrich the cultural environment of Southeast Raleigh, and help the park "respect, reflect, and forward the legacy of the woman, the hospital, and the land."

The AACC strives to become self-sustaining through individual donations, grants from local, state, and national agencies, and philanthropy. Though it is important to note that admission to the AACC has always been free, they also host dramatic productions and educational and arts programming which may require a fee. Additionally, they hope to use some space to operate souvenir sales.

The AACC plans to use space in Dix Park for history exhibits, displays, an auditorium, public program space, meeting rooms, work space, storage, art workshops and exhibits, office facilities, souvenir sales, and outdoor space for dramatic productions and storage. These activities are typical for museums operating in peer parks.

While visitor demographics are not publicly available, in their proposal for the Dix Park Legacy Committee, the AACC projects annual attendance of 1-2 million visitors, the majority coming from the local and regional area.[32]

Though additional information on visitorship, finances, and operating plans, the scoring framework returned a score of 89% for the AACC with all categories weighted equally. The AACC scored 100% in the categories of fit and visitorship, as well as finance, for which the most information was publicly available or had been commented on in the AACC proposal to the Dix Park Legacy Committee. With additional information, the AACC is likely to score higher in the suitability and equity categories. Additionally, Dix Park may opt to weight certain categories more heavily than others, which would influence the outcome. As it stands, Equity is weighted most heavily, followed by fit and visitorship, suitability, and lastly, finance. The full pilot framework is attached with this report, and where assumptions were made is noted.

Table 6 : Total Score for the African American Cultural Complex

Dix Park Partnership Scoring Matrix					
		AACC (Raw)		AACC (Weighted)	
Category	Weight	Score (Raw)	Total Possible Points (Raw)	Score (Weighted)	Total Possible Points (Weighted)
Fit	1	10	10	10	10
Visitorship	1	10	10	10	10
Finance	1	8	8	8	8
Suitability	1	8	9	8	9
Equity	1	13	18	13	18
Totals		49	55	49	55
			SCORE	49	
			SCORE (%)	89%	

Marbles Kids' Museum

Marbles Kids' Museum is a non-profit children's museum which was established in 2007 as a public-private partnership with Wake County, and whose mission is to "spark imagination, discovery, and learning through play." The museum is the #2 Most Visited Museum in Raleigh and has won several awards for STEM education, inclusion, and access. Dix Park management has indicated that a Marbles satellite location adjacent to the Plaza & Play gateway would be an ideal anchor, as it would provide a variety of indoor and outdoor play opportunities to a base of similar users. Key statistics detailed in the Asset Inventory are displayed in Table 7 below:

Marbles lives in the heart of downtown Raleigh, across from the recently renovated Moore Square. Their facilities consist of the museum (83,000sf), an IMAX theater and cafe (38,000sf), and the recently acquired and renovated Play Annex (16,000sf). In order of importance, Marbles is funded by admission fees, government grants and contributions, other contributions, membership dues, and fundraising events.[33] Marbles was able to acquire the Play Annex in 2017 from a charter school, but the Main Building parcel which houses the museum and IMAX theater is owned by Wake County and operated by Marbles under a long-term lease. With 700,000 annual visitors and growing, the current museum space reaches 92% capacity on a typical day, and exceeds capacity by up to 31% on busy days.[34] As such, Marbles has secured Interlocal Funding to construct additional facilities on their existing campus. However, Interlocal funding has been delayed due to the coronavirus pandemic.[35]

The museum's core audience is children from birth to age 10 (and their adults), but they also offer programming for older youth and events for adult audiences. Although about half of visitors reside in Wake County, the museum receives visitors from all 100 North Carolina counties, all 50 states, and international visitors each year. General admission is subsidized by the county, and at $9 for general admission, Marbles is one of the least expensive children's museums in the country. Further, the museum offers free access to more than 32,000 visitors annually, and has won the National Inclusion Project's Founders Award and the Distinguished Service Award from the ARC of Wake County. Further, Marbles builds bridges

Table 7 : Asset Inventory for Marbles Kids' Museum

Partner	Marbles Kids Museum
Current Address	201 E Hargett Street, Raleigh NC 27601
Theme/Core Principle	Wellness & Play
Facility Type	Museum
Proposed Residency Status	Permanent: Satellite Location
Duration	Long-Term
Audience	Regional Visitors
Community Capital	Human, Built
Administration	Private: Non-Profit
Expected Financial Structure	Positive
Relationship Origin	Peer Park
Affiliation	County Government

to underrepresented communities by doing pop-ups at community libraries, creating programming at the museum specifically for these families, and employing a full-time staff member dedicated to creating opportunities for English language learners at the museum. The museum also offers Title 1 playdates at Marbles and programs 'Family Fun Nights,' which are lower-sensory evenings for families with children with special needs, with free access.

Marbles offers robust public information, but additional information regarding finances and operating plans would help to fine-tune scoring. The scoring framework returned a score of 87% for Marbles with all categories weighted equally. Marbles scored 100% in the categories of visitorship, finance, and suitability. With additional information, Marbles is likely to score higher in the equity category. Additionally, Dix Park may opt to weigh certain categories more heavily than others, which would influence the outcome. The full pilot framework is attached with this report, and assumptions are noted.

Limitations & Recommendations

The partnership asset inventory and scoring matrix are intended as prototypes for Dix Park's evaluation of potential collaborators to take residence in the park. As such, both tools should be regarded as iterative and further informed by practical experience and implementation. As Dix Park enters later phases of development, the Park may need to adapt the tools for evolving needs.

Table 8 : Total Score for Marbles Kids' Museum Satellite

Dix Park Partnership Scoring Matrix					
		Marbles (Raw)		Marbles (Weighted)	
Category	Weight	Score (Raw)	Total Possible Points (Raw)	Score (Weighted)	Total Possible Points (Weighted)
Fit	1	9	10	9	10
Visitorship	1	10	10	10	10
Finance	1	8	8	8	8
Suitability	1	9	9	9	9
Equity	1	12	18	12	18
Totals		48	55	48	55
			SCORE	48	
			SCORE (%)	87%	

Asset Inventory

The asset inventory is meant to survey possible partners who would occupy a physical space in the Park, either through adaptive reuse of an existing building or new construction. We recognize that the Park will also likely have long-term programmatic partners who act in some similar ways to partners-in-residence but do not have a physical space in the Park. These purely programmatic partners are outside of the scope of the current tool. Future efforts should be made to view these two groups in relationship to one another, to ensure that programming partners complement and enhance residential partners.

On the asset inventory itself, each category is composed of a series of options. In application, however, many of the partners might have shifting statuses that do not fit neatly into these clear delineations. For example, partners might be short-term occupants as a trial for long-term occupancy or might have an expected financial structure that requires significant Park support in the initial years to later become self-supporting. These nuances should be explained in the notes section of the inventory. These notes should be carefully attended to when using the tool.

Scoring Matrix

The current scoring matrix asks that potential partners furnish extensive information about their operations. We imagine that this material would be gathered in response to a Request for Proposals (RFP), but this strategy may not be appropriate for all projects and the specifics of the RFP will need to be determined by Dix Park staff. For example, Governors Island asks potential partners to propose a rent rate in response to the RFP, but Dix Park might want to establish a rent rate before issuing the RFP, similar to the strategy of Forest Park. These specific choices can only be made by Dix Park staff in accordance with organizational goals. It is also possible that some partners might not be able to provide this information, especially if they are small organizations or new outfits. Projections might also be inaccurate, especially in light of serious disruptions such as the COVID-19 pandemic and economic recession. Dix Park staff should track whether applicants are able to provide the relevant information and work with potential partners to gather needed background for evaluation, which might include adapting the criteria.

The current version of the scoring matrix provides the relevant criteria for evaluating partners while leaving the specific weighting of these criteria up to Dix Park staff. These weighting recommendations can be determined based on the Park's particular short and long-term goals for various partners. Further work by the Dix Park team will be needed to decide the weighting for individual partners. The scoring matrix is also intended for the comparison of similar applicants, and an overarching weighting strategy might be needed if Dix Park staff is to use the tool to compare dissimilar partners. For example, the tool does not currently facilitate the comparison of a major anchor cultural institution, such as a museum, with a series of smaller partners. In its initial phases, we believe this apples-to-apples strategy will be helpful as Dix Park experiences robust interest from all kinds of partners and has many spaces available for occupancy. However, in later phases, as Park space fills up, disparate partners may increasingly compete for the same available spaces. A more nuanced strategy might be required in order to make these comparisons.

Application of the scoring matrix may also reveal opportunities for use in coordination with other tools, such as the equity scorecard. Because the partnership scoring matrix is intended to evaluate partners with a spatial presence in the Park, and the equity scorecard will evaluate programming, they each stand as independent tools. However, because many partners and anchor institutions may offer programming, Dix Park staff should consider how these may be used in concert.

Conclusion

Dorothea Dix Park is a rare opportunity, but it will also face many of the challenges emblematic of contemporary American urban development. We have attempted to take the widest possible array of factors in the successes and struggles of parks (and the people and cities behind them) into account in our partnership scoring framework. A park should serve the public, and it should be designed and occupied as such, but a park must also remain viable in today's fiscally constrained environment. We have arranged potential park priorities--some seemingly contentious like these and others maybe more harmonious--in a manner we hope adds clarity to the process of weighing them and potential partners' impact on them.

This document outlines what we hope is a lucid means of considering park partnerships, but given our limitations we are ultimately here to add what we can to the wisdom of Dix Park decision makers and to make suggestions. Our tools should be seen as a starting point; the asset inventory highlights the Park's long road of careful consideration ahead in attaining its optimum mix of partners. Our studies of legacy parks suggest the same. As we have elsewhere stated, the story of Dix Park is just beginning, and our intent is to support a vision that lasts and changes.

Appendix 1: Dix Park Core Principles & Key Actions

Open Up and Connect	Relevant Theme
Break through the physical and institutional barriers that limit access to the park site today	[Physical Park Design]
Work with neighboring communities and institutions to maximize local and regional connections to the park	Food & Community
Create new physical connections that invite activity at park edges and expand upon existing landscape experiences	[Physical Park Design]
Improve existing entries and create new ones, welcoming visitors from all directions in as many ways as possible	[Physical Park Design]
Continue to welcome everyone to the park with innovative and dynamic programs	Wellness & Play
Support learning opportunities led by the educational, cultural, arts and STEM (science, technology, engineering and mathematics) institutions of Raleigh	Wellness & Play
Host events and gatherings for citizens, families, community groups and local institutions in park spaces	Food & Community

Build From What Is There	Relevant Theme
Create park plans, designs and programs from the existing opportunities of the site	[Physical Park Design]
Honor the legacy of Dorothea Dix by creating park spaces and programs that support the wellness of visitors	Wellness & Play, History & Reflection
Follow and promote the best practices in design, planning and sustainability through restoration, reuse, and rehabilitation	History & Reflection
Bring meaning and relevance to the site's complex layers of history through new park elements	History & Reflection
Weave into the park experience innovative resiliency projects that reveal the natural landscape systems	Gardens & Ecology
Create value to sustain a world-class park	[Park Support]
Restore complexity and diversity to water systems and landscapes, adding features that reflect the region's ecosystems	Gardens & Ecology
Sustain the implementation and maintenance of the park by welcoming the expertise of Raleigh citizens and the support of volunteers	Food & Community
Integrate the work of the region's artists, builders, craftsmen, and makers into park spaces	Arts & Culture
Offer Something for Everyone	Relevant Theme
Restore and celebrate the site's cultural landscapes to connect the past to today	History & Reflection, Gardens & Ecology
Create an easily understood and accessed framework for the park that will endure through time	[Physical Park Design]
Bring together park spaces that are urban and civic with those that are natural and boundless, and celebrate that contrast	Arts & Culture, Gardens & Ecology
Create "nature escapes" in the Creek, the Grove and the Meadow landscapes	Gardens & Ecology
Include spaces for active and civic programs in the Gateway, the Ridge and the Valley landscapes	Arts & Culture
Design park spaces to be flexible and dynamic, so that they can support a range of meaningful and engaging activities and events and adapt over time	[Physical Park Design]
Enhance the destination value of the park by including programs that can be found nowhere else in the area	[Park Support]
Include spaces for creative expression	Arts & Culture

value capture

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Value Capture
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Executive Summary

This report serves as the final deliverable for the Value Capture Workshop Team. It not only summarizes key takeaways from the case study report and literature review, but also provides findings and recommendations as a result of applying a value capture strategy to Dix Park.

In response to the team's overarching research questions – How can the Dix Park Team ***feasibly and effectively capture value accruing to private parties*** as a result of park development? How can that value be used to support more ***equitable outcomes*** for Raleigh residents? – the team reached the conclusions in Table 9 below:

Case studies on San Francisco's Eastern Neighborhoods Plan and the use of zoning as a mechanism for value capture; New York City's Bryant Park and the implementation of a Tax Assessment District (TAD); Minneapolis' use of special assessment districts; and Ping Tom Memorial Park and the River South Tax Increment Financing (TIF) District of Chicago revealed that ***layering value capture strategies*** would result in larger streams of revenue to support park operations and improvements.

A ***Municipal Services District*** rose to the top after conducting a ***literature review*** of seven value capture strategies: MSD, development agreement, upzoning, inclusionary zoning, tax increment financing, land lease, and impact fees. Given the legal, political, and

Table 9 : Value Capture Thematic Conclusions

Effectiveness	**Value capture is instrumental** in meeting both financial sustainability and equity goals, both in and outside of the park's physical boundaries, as well as deepening connections to nearby development and communities.
Feasibility	While North Carolina legislation **severely restricts** municipalities' abilities to capture value, **Municipal Service Districts** are legally and administratively feasible, have significant expected returns, can be paired with other strategies, and are more equitable than many other municipal financing approaches.
Application	The prevalence of **tax-exempt parcels** surrounding the park limits value capture, but there are opportunities for significant **additional development** and **institutional partnerships.**
Equity	MSDs may impose additional **financial burdens on lower-income households**; thoughtfully drawing MSD boundaries can help to mitigate these effects. **Public engagement** will be key to framing and communicating the benefits accruing to property owners, tenants, and other stakeholders.

administrative feasibility of an MSD in the context of Dix Park, as well as the consistency and flexibility of expected revenues, an MSD may be the most effective approach for capturing private value resulting from development of the Park.

Implementation of an MSD depends on defining its purpose (e.g., ***Urban area revitalization***) and meeting the legal and administrative requirements outlined in the Municipal Service District Act of 1973.[36] ***Framing and public engagement*** will be crucial to generating public buy-in, institutional partners, and potential service provides of the MSD.

An ***Example of MSD Application*** outlines potential MSD boundaries across six geographies within two and half miles of Dix Park: four neighborhoods (Boylan Heights, Fuller Heights, Caraleigh and Kirby-Bilyeu) with significant taxable value, and two institutional, tax-exempt parcels (Spring Hill and the Farmers' Market). ***Fuller Heights*** represents the most taxable land (by area) and most taxable commercial value, while ***Boylan Heights*** represents the most taxable value in general. These two neighborhoods account for approximately 70% of the total taxable value in the MSD.

The ***MSD Calculator*** provided in Appendix 3 allows decision-makers to explore multiple possible future scenarios based on current parcel data and market values. Variables to include or exclude include the geographies, distance thresholds, and distance threshold multipliers. Users may also vary their assumptions about the tax rate levied in the MSD, though this is linear.

Overall, the student team recommends that the Dix Park Team explore the creation of an MSD while implementing Phase 1. This value capture strategy can be combined with others mentioned in the literature review, such as ***inclusionary zoning*** or ***land leasing***, to maximize effectiveness and equity objectives. However, any decisions regarding an MSD should be made in their current context, which consider zoning and land use changes, results from the Dix Edge Area Study, Bus Rapid Transit expansion, etc.

While an MSD is not a perfect solution, its precedent in the City of Raleigh and flexibility are encouraging characteristics during times of uncertainty. Mindful creation of an MSD has the potential to support long-term financial sustainability and equity for Dix Park and its surrounding neighborhoods.

Introduction & Project Purpose

Land value capture (hereafter, "value capture") is a financing mechanism that "enables communities to recover and reinvest land value increase resulting from public investment and other government actions".[37] Its core premise is that public action should generate public benefits. Indeed, value capture is one strategy towards meeting Dix Park's financial sustainability and equity goals.

This report builds upon previous work completed by the City of Raleigh, the Dorothea Dix Park Staff Team, and HR&A Advisors. The Dorothea Dix Master Plan[38] proposed value capture as a fourth funding source to support mid- and long-term operations and maintenance. Appendix X[39] provided an overview of four value capture mechanisms (i.e., tax increment financing [TIF], park assessment district, on-site development, and developer impact fees); value capture examples or park case studies; methodology for assessment; and key questions for the Business Advisory Team.

This report further explores value capture's benefits, limitations, and implications for Dix Park through two main research questions:

- How can the Dix Park team ***feasibly and effectively capture value accruing to private parties*** as a result of park development?
- How can that value be used to support more ***equitable outcomes*** for Raleigh residents?

The student team created four deliverables in order

to analyze these issues: the value capture case study report and presentation, literature review and evaluation of value capture strategies, Dix Park application, and final report and recommendations. This final report summarizes the first two deliverables and provides detailed findings for the last two. In particular, the section on "***Implementation of Municipal Service District***" argues that an MSD is the most feasible value capture strategy from those studied in the literature review due to its high legal feasibility, moderate administrative feasibility, and moderate expected returns. The "***MSD Application***" section illustrates one framework for analysis which draws on current parcel data to create potential MSD boundaries. The "***MSD Calculator***," given in Appendix 3, is a live spreadsheet for conducting sensitivity analyses based on neighborhoods and their distance to Dix Park. Resulting values include total and exempt values; taxable commercial and residential values; and total, commercial, and residential revenues.

Overall, the student team recommends that the Dix Park Team explore the creation of an MSD while implementing Phase 1. This value capture strategy can be combined with others mentioned in the literature review, such as inclusionary zoning or land leasing, to maximize effectiveness and equity objectives. However, any decisions regarding an MSD should be made in their current context, which consider zoning/land use changes, results from the Dix Edge Area Study, Bus Rapid Transit expansion, etc.

Like many value capture strategies, good governance and deep civic engagement will contribute to the success of implementing a Dix Park MSD. An intentional MSD will truly support "a park for everyone, built by everyone."

Literature Review

To better understand the appropriateness of various value capture strategies to the context of the City of Raleigh and Dix Park, our team conducted a series of brief literature reviews. Each review covered the legal, political, and administrative feasibility of the strategy under consideration, as well as the expected financial or in-kind returns that Dix Park might expect to generate. We provide abstracts of our findings below.

Municipal Services District (MSD)

An MSD refers to the geographic area in which a local government levies a surtax on real property to fund additional services, infrastructure, or amenities. The tax is charged only to the owners of property in the district that will benefit from the project. In North Carolina, the city council may define a service district to fund downtown or urban area revitalization projects when the proposed district is in need of such services to a demonstrably greater extent than the remainder of the city.

An MSD has a number of advantages as a source of public funding. For one, MSD revenue tends to be fairly stable over time because it is collected annually and is tied to the assessed values of properties within the district. MSDs also are effective at limiting free-riding because they require beneficiaries within the district to contribute to the cost of providing public services, infrastructure, or amenities.[40] Further, the funding from an MSD is highly flexible and can be used in various ways that support the maintenance and operation of a specific project.

However, MSDs also present a number of concerns. Additional property tax burdens may disproportionately burden lower-income residents, while the benefits funded through MSDs may increase property values, potentially leading to forced residential displacement. For example, subsequent to the MSD-funded renovation of Bryant Park in New York City, asking rents for real estate surrounding the park increased at a much higher rate than did rents in other areas of the city.[41] Additionally, the successes of MSDs can lead municipalities to rely on special localized taxes to fund what were formerly generalized public services, thus increasing inequities in the provision of and access to public services. Further, an MSD may be politically unpopular because it entails

additional costs for district residents, some of whom may benefit from MSD-funded services less than others. Many residents may also expect that their property taxes already fund the services that are proposed by an MSD.

In terms of expected revenues, MSDs can provide stable but modest annual revenues; North Carolina municipalities cannot levy property taxes--including any property taxes levied as part of an MSD--beyond a rate of 1.5% without approval from a majority of qualified voters residing within the district. In Raleigh, this cap is not likely to limit the taxing capacity of a new MSD, as the County's and City's property tax rates in 2020 were only .6% and .3552%, respectively, and the existing MSDs only levied additional taxes of .044% and .0965%.[42]

Given the legal, political, and administrative feasibility of an MSD in the context of Dix Park, as well as the consistency and flexibility of expected revenues, we believe an MSD may be the most effective approach for capturing private value resulting from development of the Park. Further, as the area surrounding the park is developed more intensively, and as property values rise, MSD revenues will increase proportionally.

Development Agreement

A development agreement is a voluntary contract between a local government and a developer. This contract specifies each party's rights and obligations for a certain period of time.[43] In the context of value capture, development agreements are one potential mechanism through which local governments could negotiate project-specific public benefits in exchange for allowing development.

Although voluntary, development agreements are binding once they commence, so for local government, the primary legal concern has been whether the agreement constitutes an impermissible form of contract zoning--signing away some of the municipality's police powers or undermining the discretion and capacity of future elected bodies.[44] However, development agreements are expressly permitted by the North Carolina Legislature, albeit with some limitations, including a minimum land area requirement of twenty-five developable acres.

A development agreement has benefits for both sides. It provides assurances to the developer that the development regulations that apply to the project will not change during the term of the agreement. On the local government side, there are also benefits to the public when the provision of public facilities is coordinated with development and environmentally-sensitive lands are well managed and monitored. However, development agreements also have a number of important downsides, including some that are specific to North Carolina. Broadly, individually negotiated development agreements may entail an ad hoc decision-making approach that does not account for comprehensive plans or a sufficiently broad community context.[45] Further, because development agreements are complex, project-specific contracts, they bring with them significant transaction costs, which may significantly detract from the net value associated with any public benefits that are secured. Meanwhile, North Carolina's 25-acre minimum effectively precludes the use of development agreements for most of the parcels in the immediate vicinity of Dix Park. Perhaps most importantly, the expected monetary benefits from development agreements are low because local governments in North Carolina are unable to charge developers impact fees and are greatly constrained in their abilities to impose other exactions. However, local governments may negotiate for other benefits (like the construction of public facilities) via development agreements.

Upzoning

Zoning affords governments myriad opportunities to capture public benefits, both in the form of in-kind transfers--e.g., dedications of land, construction of public facilities or affordable housing units--and via

more direct cash transfers. Building on our review of the Eastern Neighborhoods Plan in San Francisco (see the case study above), which detailed how San Francisco has captured significant value via zoning for a range of public services, including parks, we evaluated the applicability of zoning-as-value-capture to Dix Park. After research into the North Carolina legal landscape and an informational interview with Tyler Mulligan, Professor of Public Law and Government at the University of North Carolina at Chapel Hill, it appears that zoning is likely not legal as a mechanism for generating revenue for Dix Park from off-site development. However, approaches similar to voluntary inclusionary zoning (see following section for more detail), where developers opt to pay in-lieu fees in exchange for density bonuses or another incentive, might be legally permissible and could create an additional revenue stream tied to new or more intensive development around Dix Park.

Inclusionary Zoning

Inclusionary zoning refers to the practice of tying new development to the production of affordable housing units. In voluntary schemes, developers choose to build affordable units in exchange for some incentive, commonly a density bonus. In mandatory schemes, developers are required to build affordable units, though they often also receive some type of incentive. Many programs have in-lieu fees or off-site provisions that allow developers to meet their affordable housing requirements without building units on-site.

Chief among the strengths of inclusionary zoning is its ability to produce income integration at both the neighborhood and development levels.[46] While other affordable housing subsidy programs such as the Low-Income Housing Tax Credit (LIHTC) produce greater volumes of affordable units, they are generally less effective at achieving mixed-income communities. A drawback of income integration in these programs is that they typically don't target very low-income groups to the same extent as programs such as LIHTC.[47] Another key strength of inclusionary zoning programs is their demonstrated effect of racial desegregation.[48]

One of the most significant limitations of inclusionary zoning is its reliance on strong local housing markets.[49] Reliance on the housing market for program success can be problematic, as downturns can produce significant drops in affordable housing production. In-lieu fees are also commonly set too low to fund equivalent numbers of units; when fees are adequate, fiscal mismanagement or political gridlock can lead to inefficient or delayed use of these funds.

An inclusionary zoning ordinance for the neighborhoods that surround Dorothea Dix Park has the potential to not only retain housing affordability in the currently low-income Fuller Heights neighborhood as green gentrification occurs, but also to increase housing affordability in the higher-income Boylan Heights neighborhood. Unfortunately, the current political climate in the state of North Carolina is rather hostile to inclusionary zoning. North Carolina is a Dillon Rule state, which means that municipalities' power is limited to that specifically granted by the state government. Due to the current nature of legislative control in the state, even cities such as Raleigh that would like to implement inclusionary zoning programs are greatly restricted in their ability to do so. As it stands, the state government is almost certain to prohibit the implementation of any inclusionary zoning program that would require all developers to include affordable units in their projects. However, the state government has demonstrated an openness to permitting inclusionary zoning programs that do not require, but rather incentivize, the inclusion of affordable housing units in large developments. Incentive-driven inclusionary zoning programs are often based on density bonuses that allow developers to build more units than allowed under standard zoning rules for each unit of guaranteed affordable housing that they include. The current legality of voluntary inclusionary zoning programs is not so much up for debate, but the political fight over mandatory programs continues. It is possible that with a change in legislative leadership, the potential to use mandatory inclusionary zoning would become available, but until that time, legal structures essentially limit municipalities to voluntary programs.

Expected Monetary Benefits

The use of inclusionary zoning as part of the development of Dorothea Dix Park is not about capturing value in the traditional sense of generating monetary dividends for park funding, but rather about capturing the more abstract value of affordable housing and keeping it in the neighborhoods bordering the park. While this particular form of value is incapable of providing direct financial support to park services, its importance in providing the benefits of development investments to residents of all income groups cannot be overstated. Without mechanisms in place to prevent the pricing out of financially vulnerable residents in the coming years, the central tenet of value capture to provide the benefits of massive investment to all people cannot be fully realized.

Tax Increment Financing (TIF)

TIF is a form of municipal financing that relies on the increases to property values resulting from public investments (the "increment") to secure the publicly-issued debt that funds these same investments. TIF's primary advantages over other municipal financing mechanisms are political. TIF does not require voter approval, in contrast to a general obligation bond, for example , which affords municipalities greater latitude in the capital projects they might undertake.[50] The concept of a "self-financing" capital project can also be politically appealing, especially against the backdrop of ballooning municipal debt. However, TIF has many significant downsides. Most fundamentally, because it is riskier than other municipal debt financing strategies (e.g., installment financing), TIF requires a much higher interest rate to induce investors to purchase debt, making it a very cost inefficient approach to paying for infrastructure. In North Carolina, TIFs also require approvals from both the county in which the TIF is proposed and the Local Government Commission, which may be particularly challenging because the manner in which TIF increments are calculated tends to deprive overlying jurisdictions, including counties, of property taxes that they would otherwise receive.[51] The TIF approach also has serious equity implications (beyond underfunding schools and county services), in that it may limit the redistributive functions of the property tax. By capturing neighborhood-level property taxes and redirecting them back to hyper-local capital projects, TIF constrains the extent to which municipalities can target expenditures to lower-income communities and reduces the pot of funding available for community-wide initiatives. In the context of Dix Park, TIF also is a poor fit for the Park's maintenance and operation needs, since TIF can only be used to finance capital projects. For these myriad reasons, we encourage the Dix Park team to avoid using TIF as a financing tool; "synthetic TIF", which is simply installment financing, is a somewhat better approach to paying for infrastructure.

Land Leasing

A land lease or ground lease is when the public sector leases land to a private lessee for a fixed term. The public actor serves as a landlord, while the developer provides all of the other aspects of project development to the building footprint.[52] Leasing land in Dix Park to private developers while giving them ownership of the buildings on the land may serve as a useful value capture strategy because it allows the City to retain ownership of the Park while simultaneously promoting new development. This strategy serves as a form of value capture for two reasons:

1. the public actor collects ground rents from the lease of the land over a fixed period of time; and
2. any improvements to the site are ultimately transferred back to the public actor at the end of the lease term through increased site improvements and subsequent increased property value.

Land leasing provides benefits to all parties involved. The public actor is able to maintain control of site development via ownership of the land and by negotiating site specifications into the lease agreement.[53] A ground lease provides the public sector with "the

opportunity to realize longer-term economic value in the property once improved".[54] Land lease agreements can also add additional value if the private developer wishes to make any changes to the building that are not permitted in the initial agreement, which may warrant an adjustment of ground rent, thus increasing revenues to the public actor. The public sector may also benefit from the expertise of the lessee, which adds long-term value and revenue generation to the project.[55] The land-lease structure also provides tax benefits to a developer, as the leased land is typically tax-exempt, as is the case in Dorothea Dix Park.

Though mutually beneficial, land-lease agreements pose several challenges. Arriving at a mutually agreeably set of terms--including rents, allowable and prohibited uses, operations, transfer restrictions, and any other context-specific arrangements--can be difficult given that lessor and lessee may have conflicting aims, and that these terms, once decided, have long-term implications for the profitability and character of the site. Revisions to the terms of the lease, such as periodic rent increases, pose a great deal of uncertainty for a developer; rental increases in combination with prohibited uses may put the lessee in a situation where it cannot afford to pay rent given a building's current use, and cannot easily convert it to a more profitable use. Among other issues, land leasing also has the potential to be politically unpopular if clear, shared objectives are not set in place at the outset of the partnership, and if there is not significant buy-in from local stakeholders.

Land leasing stands to be a moderately profitable approach for Dix Park to monetize the value of portions of the Park property without precipitating the political challenges associated with selling Park land for development. Further, land leasing can start with a single development project and then be scaled if successful, allowing for Dix Park to iterate and learn from initial experiences.

Impact Fees

A development impact fee is "a monetary exaction other than a tax or special assessment that a local government agency charges a project applicant in connection with approval of a project," typically used to fund new or expanded public capital facilities.[56] For impact fees to be legal, they require voluntariness and a "rational nexus" between the amount of the fee and the needs/benefits generated by new development.[57] For municipalities to leverage impact fees, they must also be so empowered by the state government. HR&A Advisors evaluated developer impact fees as a potential value capture strategy for capital and operations funding for Dix Park. Ultimately, HR&A concluded that development impact fees are not feasible for Dix Park due to legal constraints in North Carolina. After additional research and an informational interview on value capture strategies with Tyler Mulligan, Professor of Public Law and Government at the University of North Carolina at Chapel Hill (October 14, 2020), we reached the same conclusion. Without legislative changes or a significant reversal in the North Carolina Supreme Court's jurisprudence, impact fees are not a feasible funding source for Dix Park.

Takeaways from Case Studies

Our team first conducted a series of case studies related to value capture strategies used by other municipalities around the country to better understand how value capture strategies can both increase revenue and provide public benefits for Dorothea Dix Park. Our research focused on four case studies: San Francisco's Eastern Neighborhoods Plan and the use of zoning as a mechanism for value capture; New York City's Bryant Park and the implementation of a Tax Assessment District (TAD); Minneapolis' use of special assessment districts; and Ping Tom Memorial Park and the River South Tax Increment Financing (TIF) District of Chicago.

San Francisco Eastern Neighborhoods Plan: Zoning & Impact Fees

The Eastern Neighborhoods Plan (2008)[58], took advantage of increasing development pressures to establish "upzoning," which allows for more dense development. In exchange, property owners are required to pay impact fees that support public infrastructure projects such as parks, and provide affordable housing in proportion to the benefits that upzoning provides. The plan's use of an established zoning ordinance to provide community benefits proportional to the scale of new development offered insights for how the City of Raleigh and Dix Park can think about value capture from development in the areas surrounding the park through an equity-focused lens. Our team noted a few significant limitations; most importantly, the use of impact fees is not legally feasible in North Carolina, and it is unclear whether or not Raleigh could mandate inclusionary zoning requirements.[59] However, it illuminated several useful value capture strategies. First, the Eastern Neighborhoods Planning Team used a community needs assessment to help to identify desirable public benefits and prioritize value capture-funded projects. The Dix Park Team could use a similar strategy to determine what projects additional revenue can help to fund in surrounding neighborhoods. Second, this strategy utilized a residual land value analysis to substantiate the magnitude of value created through zoning changes. Using a similar land value analysis to demonstrate the benefit of various value capture strategies can empower public officials to more effectively negotiate for public benefits.

New York City's Bryant Park Tax Assessment District (TAD)

In 1980, the Bryant Park Management Corporation (BPMC) was established as a nonprofit organization to coordinate between New York City officials, property owners, tenants and city officials with an interest in improving Bryant Park and the surrounding area. Tenants and property owners in the area agreed to form a Tax Assessment District (TAD) to fund the approved activities of BPMC in 1983. Through the TAD, the BPMC would levy an additional tax (not to exceed 3% of the city's general property taxes) to fund improvements, including operations and maintenance costs, within the park district.[60] Our research indicated that forming a TAD in North Carolina, while technically feasible, would be politically and legally challenging without overwhelming consensus within the community. However, it also demonstrated that capturing value through some form of tax assessment district can provide stable, albeit moderate, revenue for park improvements over an indefinite timeline. If the Dix Park Team considers a similar taxation strategy, it should also consider the potential for gentrification as property values increase along with improvements to the park and surrounding areas. Any value capture strategy that involves improvements to park-adjacent areas should think critically about equity implications.

Special Assessments and Service Districts in Minneapolis

Similar to TADs are the use of special taxation assessments over time to fund park projects. In 2016, Minneapolis developed a 20-Year Neighborhood Park Plan, backed by an annualized bond and increase in property taxes, with the potential to transform the Minneapolis Park and Recreation system with its 180 park properties attracting 26 million visits each year.[61] Additionally, the city funds park improvements through the use of 15 special service districts that charge certain land owners with a significant amount of property within a service district a service charge.[62] These service districts are typically non-profit organizations that provide planning, greening, and beautification services. Finally, Minneapolis enacted an "equity ordinance" that makes decisions about funding across the park system based on equity indicators in an effort to disburse park funding to geographies that need additional park access or improvements. This case study produced similar findings to the Bryant Park case; though special

assessments and service districts may be politically and legally challenging in North Carolina, Raleigh could build upon similar principles by integrating its business improvement districts, increasing property taxes, and consider tying equity indicators to funding.

Chicago's Ping Tom Park and River South TIF District

Since the 1980s, Chicago has implemented over 180 Tax Increment Financing (TIF) districts. Funds from these districts can be utilized to finance a range of projects, from public improvements such as street repairs and public parks, to leveraging private investments in areas such as affordable housing and commercial development.[63] In 1997, the River South TIF district was established to help finance the development of a new park in the Chinatown neighborhood of Chicago. Following two separate phases of development from 1998-1999 and from 2009-2011 and millions of dollars generated from the TIF district, Ping Tom Memorial Park is now one of Chicago's prized public parks and serves as the cultural and civic heart of the Chinatown neighborhood, generating $383 million in total revenues.[64] This case study provided several key insights; first, TIFs are technically not a strategy for capturing new value, but rather re-allocating funding from the increase in property value to other areas. Second; TIFs cannot provide all of the funding necessary for park development in themselves, because TIF funding is distributed across multiple investments. Third, the development of a TIF would be politically and legally challenging given North Carolina's limitations as a Dillon Rule state (see literature review section). While politically challenging, however, it reinforces the point that providing a long-term, consistent stream of funding can help to improve both park improvements and equity initiatives such as affordable housing.

General Takeaways

Our case study research highlighted several opportunities and limitations to consider for developing a value capture strategy for Dix Park. First, we found that none of the value capture strategies (or TIF) will be enough to fund park operations and improvements on their own; we recommend layering strategies if possible to provide multiple streams of revenue where it is feasible. it may be both feasible and efficient to layer strategies. For example, a TIF district can support infrastructure projects, while a tax assessment district affords greater flexibility for more general services, such as operations and maintenance. Each case study also speaks to the importance of local contexts, including the legal, political, financial, and administrative feasibility of different approaches. While several strategies may not be legally or politically feasible in North Carolina, they still provide a useful framework for thinking through equity, public benefits, and assessment of land and property value. Nonetheless, Dix Park may be able to adapt takeaways from the Eastern Neighborhoods, such as the residual land value analysis and negotiating for public benefits through zoning processes. Lastly, these funding strategies are similar in that they involve long-term funding that may fluctuate on a year-to-year basis based on property values and other market conditions. Though returns may vary, a strategy that can be implemented over a longer time horizon is more apt for the needed operations and maintenance funding at Dix Park.

Implementation of an MSD

Methodology

Upon completion of our literature review, our team developed a Value Capture Strategies Matrix (see Appendix 1) to compare the strategies across several metrics; including the legal, political, and administrative feasibility, overall feasibility, and expected returns. The matrix ranked the seven strategies covered in the literature review on a scale of 1-4 for each category, with 1 denoting high feasibility/expected returns and 4 denoting low feasibility/low returns. Each of the

four individual scores were added to create an "Overall Feasibility" score, with the lowest total scores signaling the highest overall feasibility, similar to a 'golf score-style' ranking system. Overall, the most feasible strategy from the literature review was the Municipal Service District (MSD). On the whole, MSDs can be characterized by high legal feasibility and moderate administrative feasibility and expected returns. As noted in the literature review, MSDs can be politically challenging. In the following sections, we will discuss some of the key legal, administrative, and political considerations that can help to alleviate some of these challenges. Our report will then walk through an example of an MSD application, identifying neighborhoods that could fall within an MSD at Dix Park, and providing a methodology for calculating potential returns.

Legal & Administrative Consideration

The Municipal Service District Act of 1973 provides the primary guidance on legal and administrative procedures for establishing an MSD. The first step is to identify the purpose of the MSD. We recommend classifying the MSD as an "urban area revitalization project," as it meets the following requirements in § 160A-536(c):

1. It is located within the city/urban area; and
2. Dix Park is the center of the proposed MSD and serves a concentration of public and institutional uses.

Next, Raleigh City Council should work with staff to complete a feasibility report required by §160A-537(b), which includes three parts:

1. Developing a map of the proposed district boundaries;
2. Preparing a plan for what services will be funded with MSD revenues; and
3. Verifying that the services funded by the MSD will benefit properties within the district to a demonstrably greater extent than properties in the remainder of the city.

Finally, the City Council will hold a public hearing, providing sufficient notice so that property owners within the proposed district can express their concerns or otherwise "opt out" of the district. If MSD-funded services are to be provided by a private entity (which is common with commercial districts), there must also be a competitive bidding process to select the service provider (see "Framing and Public Engagement" section). However, if the Parks Department or another agency of the City of Raleigh were to be directly responsible for MSD-funded services, no competitive bidding process would be required. After the ordinance approving the MSD is passed at two city council hearings by majority vote, an Effective Date will be set for the beginning of the upcoming fiscal year.

Framing & Public Engagement

Equally important to the implementation of an MSD is developing a strategy for "framing," or communicating the benefits that Dix Park can provide to the surrounding area. Through our research, we found several examples of MSD proposals where organizations clearly laid out expected benefits across several categories, such as environmental, economic, and public safety benefits. For example, in the feasibility study for the Blue Ridge Corridor MSD, the City of Raleigh developed a table that described the type and level of service provided as well as the expected cost of each service.[65] Our team recommends following a similar approach by developing a matrix to determine potential benefits that the Dix Park MSD can provide. Figure 1 below is an example of how the Dix Park Team might think through various economic, environmental, public safety, infrastructure, or other benefits. For instance, an economic benefit might be a workforce development program that services residents in adjacent neighborhoods; a public safety benefit might be improved lighting around the perimeter of the park.

Table 10 : Sample Matrix of Public Benefits Provided by Dix Park MSD

Economic	• Events in Dix Park will attract visitors to surrounding areas • Workforce development opportunities within the park
Environmental	• Improvement to surrounding water quality (creeks, streams) • Cleaning/trash collection
Public safety	• Improved lighting and visibility around perimeter of park
Public infrastructure	• Funding for improvements to sidewalks, crosswalks, etc. • Improvement of community space within mixed-use district

As the team develops this matrix, it is critical that public input plays a role in developing expected benefits. We have heard from the Dix Park team that civic engagement is limited in the neighborhoods surrounding the park. However, the North Carolina General Statute requires that those communities that will be impacted by an MSD are given proper notice and have a chance to submit sufficient feedback. Specifically, N.C.G.S. 160A-537(c) and (d) provide guidance around public hearing requirements and state that a feasibility report must be published and available prior to a public hearing. It may be beneficial for the Dix team to provide opportunities outside of the required public hearing, such as forming an advisory group or steering committee composed of residents and other constituents within the proposed district.[66] Public input should be solicited from as diverse a group of constituents as possible; this might include representatives from the hospitality industry, larger property owners and investors, real estate developers, members of the retail/office/restaurant community, residents, and civic leaders.

Our team also recommends incorporating NCSU into the process of forming an MSD if possible. Because public universities are tax-exempt, current and future development on NC State's campus would not be taxed. However, universities can add value to the overall public benefits package. A representative from NC State might take part in a public steering committee to further identify public benefits from an institutional perspective. NC State might also serve as a critical financial partner in the Dix Park MSD. For example, NC State recently provided a $100,000 grant to the Hillsborough Street Business Improvement District, which equated to roughly 11% of their annual income. These funds were utilized to provide street cleaning, safety services, and hosting large events and festivals. Similarly, UNC-Chapel Hill has contributed roughly $91,000 to economic development and innovation efforts in downtown Chapel Hill.[67]

The Dix team will also need to determine who the service provider for the MSD will be. When forming an MSD, a common approach is to contract with a service provider to coordinate and provide identified services.[68] The Dix Park team will need to identify what stakeholder(s) are necessary for implementation of the MSD when selecting a provider. It might be that the City itself, via the Dix Park team, is the "service provider." Or, the team might choose to have a private organization, such as the Conservancy or another local organization,

contract these services. If the City desires to contract with an external service provider, the General Statute requires a bid process to determine which provider is best suited to achieve the districts needs based on selected criteria, as well as how money will be spent and how long a contract would last. It is important from the offset for this organization to have a clear understanding of how the services provided will add value to the overall identity of the MSD, in order to make this process transparent to the outside community. Our recommendation would be to engage the Downtown Raleigh Alliance, which services the Downtown Raleigh MSD, to discuss framing strategies and brainstorm ideas for unique services that an MSD could provide. We were not able to speak with the organization this semester, but they have developed innovative service provision strategies, for example providing Downtown Ambassadors within their MSD that provide community engagement and safety services.[69]

Example of an MSD Application

Here we present a preliminary analysis of an MSD surrounding Dix Park. The purpose of this analysis was primarily to explore, visualize, and quantify considerations relating to drawing MSD boundaries around parcels surrounding Dix Park, as opposed to advancing a particular recommendation.

Methodology

Our primary criteria for drawing potential MSD boundaries and identifying constituent neighborhoods (not legally necessary, but neighborhoods that are defined by distinct built environment and socio-demographic characteristics facilitate examining different MSD geographies) were the tax-exempt status of parcels, the likelihood of parcels for future development, and the distance of parcels from the Park. The existing literature indicates that property value impacts of urban parks comparable in size to Dix Park tend to diminish significantly beyond one mile,[70] so we prioritized including parcels and neighborhoods that were within one mile of the park, though some parcels are slightly further away. We identified six geographies in total: four neighborhoods (Boylan Heights, Fuller Heights, Caraleigh and Kirby-Bilyeu) with significant taxable value, and two institutional, tax-exempt parcels (Spring Hill and the Farmers' Market) (see Figure 3). While we excluded other large, tax-exempt parcels, such as Central Prison, we included Spring Hill and the Farmers' Market at the suggestion of Dix Park staff because these areas have high development potential within the near future, and because it is possible that improvements to these properties could be taxable.

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Fig. 3 : Potential MSD Neighborhoods

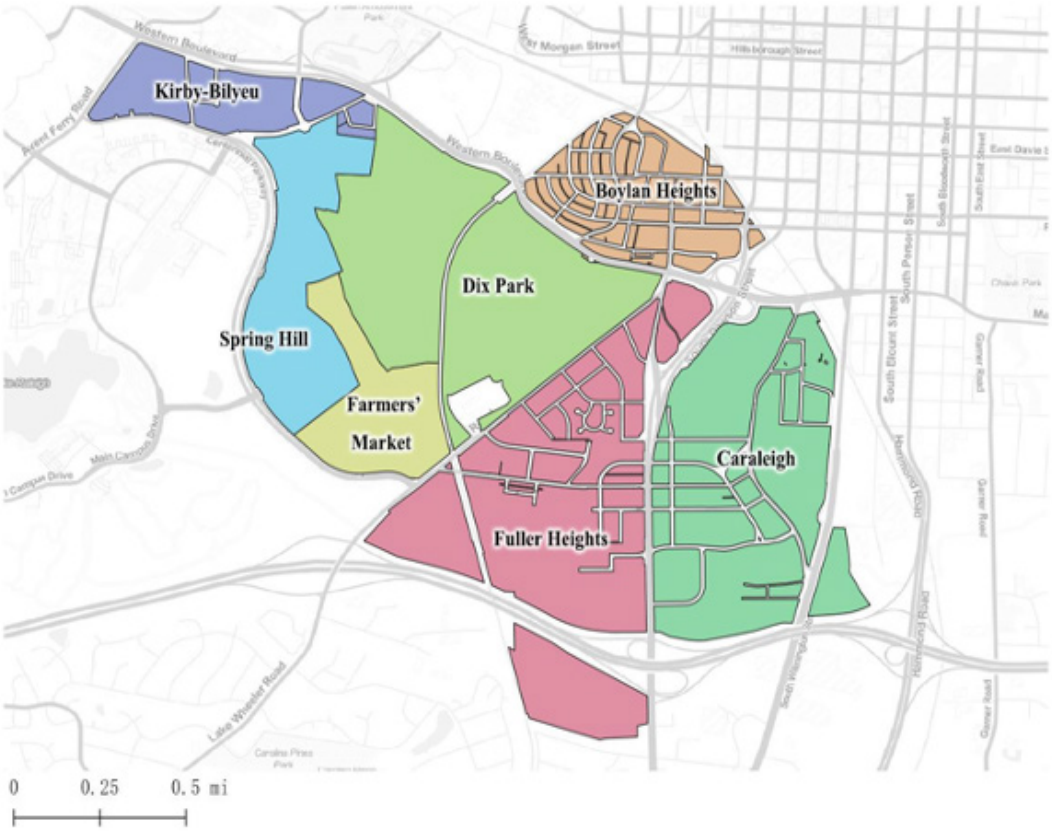
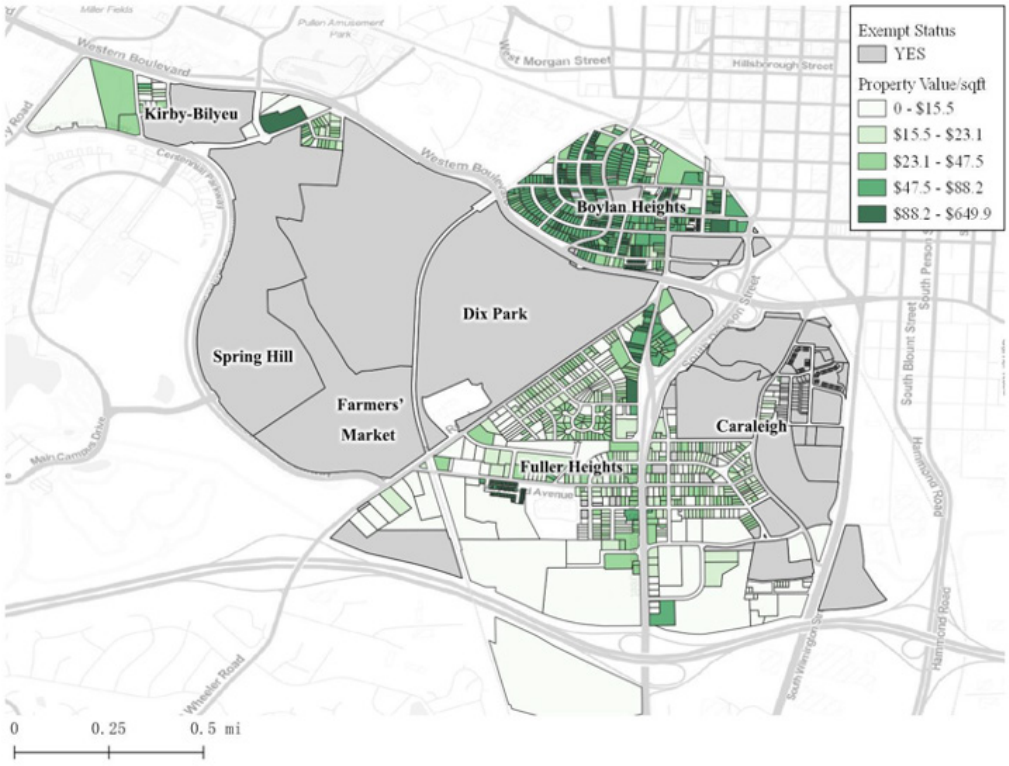


Fig. 4 : Property Value per Square Foot in Dix Park MSD



Results

Figure 4 above shows the taxable value of properties within the proposed MSD. The grey areas represent tax-exempt parcels; most land in the MSD is tax-exempt. According to our statistical summary in Appendix B, Fuller Heights represents the most taxable land (by area) and most taxable commercial value, while Boylan Heights represents the most taxable value in general. These two neighborhoods account for approximately 70% of the total taxable value in the MSD.

Calculator

Sensitivity analyses, which allow decision-makers to explore multiple possible future scenarios, are critical to--though underutilized in--planning in the face of uncertainty.[71] In terms of evaluating an MSD in the neighborhoods surrounding Dix Park, there are multiple future conditions that are unknown, including but not limited to: the boundaries of the MSD; property values at the time of MSD implementation, as well as variations in property values while the MSD is in effect; the tax rate imposed in the district; and the prevalence and value of tax-exempt versus taxable parcels. While it is impossible to obtain perfect estimates of any or all of these variables that influence the scope and effects of the proposed MSD, sensitivity analysis can help to identify the range of possible characteristics of the MSD, as well as how different policy choices (e.g., upzoning around the Park's edges) may influence MSD outcomes.

To provide the Dix Park team with a simple tool for conducting sensitivity analyses of the proposed MSD, we took cadastral data for the parcels surrounding Dix Park, assigned them to neighborhoods (see Figure 3), calculated their Euclidean distances from the Park, and added them to an Excel-based model (the "calculator"). As visualized in Figure 5, the calculator allows users to select which neighborhoods to include in analyses; choose a tax rate for the MSD; and input assumptions for how Dix Park will affect property values, as compared to current assessed values. (For example, a user could specify a scenario where properties within a tenth of a mile of the Park increase in value by 20%, within a quarter-mile by 10%, within half a mile by 5%, and within 1 mile by 2%.)

Fig. 5 : MSD Calculator - Model Outputs

Neighborhoods	User Values	Total Value	Exempt Value	Taxable Value	Taxable Commercial	Taxable Residential	Total Revenue	Commercial Revenue	Residential Revenue
Dix Park	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Boylan Heights	1	$ 261,559,370	$ 28,031,210	$ 233,528,160	$ 53,015,598	$ 180,512,562	$ 350,292	$ 79,523	$ 270,769
Fuller Heights	1	$ 180,130,324	$ 12,158,640	$ 167,971,684	$ 116,468,542	$ 51,503,142	$ 251,958	$ 174,703	$ 77,255
Caraleigh	1	$ 146,669,223	$ 84,110,921	$ 62,558,302	$ 33,541,719	$ 29,016,583	$ 93,837	$ 50,313	$ 43,525
Spring Hill	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Farmers' Market	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Kirby-Bilyeu	1	$ 172,839,277	$ 67,427,428	$ 105,411,849	$ 30,177,360	$ 75,234,489	$ 158,118	$ 45,266	$ 112,852
All Neighborhoods		**$ 761,198,194**	**$ 191,728,199**	**$ 569,469,995**	**$ 233,203,219**	**$ 336,266,776**	**$ 854,205**	**$ 349,805**	**$ 504,400**

Distance Thresholds	Multiplier
0.1	1
0.25	1
0.5	1
1	1
Tax Rate per $100	0.15

INSTRUCTIONS: This simple model helps to simulate revenues from a municipal service district (MSD) under varying assumptions. Users may select which neighborhoods to evaluate (enter a "0" to exclude a neighborhood) to vary their assumptions about the boundaries of the MSD. Users may input different multiplier values AND distance thresholds to vary their assumptions about how property values will change in relation to properties' distances from Dix Park. For example, setting the first distance threshold to .1, and the multiplier to 1.2, reflects a scenario where parcels within .1 miles of the park will have assessed values 20% greater than their current assessed values. Users may also vary their assumptions about the tax rate levied in the MSD, though this is linear (for example, increasing the rate two-fold will simply double projected revenues). For reference, parcel-level data are in columns A-G (hidden by default), and can easily be updated with more current data.

We took a cue from the recently-completed Blue Ridge Corridor Municipal Service District Feasibility Study and sought to format the model outputs to encompass both projected revenues and characteristics of the parcels included in different geographic configurations of the MSD (including taxable vs. tax-exempt parcels and residential vs. non-residential parcels). While this model is inherently limited--for example, it cannot account for the effects on property values of other municipal and market influences, such as new transit infrastructure--it provides an easy-to-use interface for exploring the dimensions of an MSD around Dix Park.

The full calculator is available in Appendix 3.

Recommendations & Next Steps

Keeping in mind that no single value capture strategy or other similar fundraising mechanism will be able to produce the revenues needed for the development, maintenance, and operations of Dorothea Dix Park, our ultimate recommendation to the Dix Park planning team is not to just cherry-pick the most feasible and profitable value capture strategy for implementation, but rather to envision their value capture efforts as a network of interrelated strategies that can be employed at various points throughout the life of the project. Due to the strength of an MSD in regards to legal, administrative, and political feasibility as well as its high potential profitability, we recommend at the very least that this particular strategy be pursued as the primary mechanism for value capture.

Given the flexibility of an MSD and the opportunity to implement additional value capture strategies alongside it, we also recommend that Dix Park consider land leasing, which is both fairly feasible and is expected to produce moderate long-term revenues. Land leasing may also help to spur additional development by demonstrating the market appeal of property on and near the Park. While mandatory inclusionary zoning is dubiously legal, voluntary zoning based on some form of development incentive, such as density bonuses, could be an effective way to generate affordable housing units around the Park, which will be especially important if the Park increases nearby property values. If the legal environment around inclusionary zoning changes, we encourage the Dix Park team to adopt a mandatory program so as to ensure the greatest supply of housing affordable to lower-income residents in the communities adjacent to the park.

Regardless of the strategies that Dix Park and the City of Raleigh choose to employ, it will be critical to coordinate Park-focused efforts with land use planning in the neighborhoods surrounding Dix Park. The outcomes of the Edge Study will provide important information about expected development patterns, and by working in concert with the City's Planning Department, the Dix Park team can think how best to leverage the suggested value capture strategies above to produce equitable and sustainable growth on- and off-site. Prioritizing proactive, transparent, and two-way communication with residents, business owners, and other stakeholders on and around the Park will also be key to informing, achieving, and maintaining value capture and other land use policies. As detailed in the case studies and our section on framing and public engagement, incorporating stakeholders' needs and messaging the value of proposed policies in relation to those needs can be a make-or-break factor in the success of the Park's value capture policy agenda.

Conclusion

Our literature review, outline of legal, administrative, and framing considerations, and application of a Municipal Service District illustrated several major points that the Dix Park Team should consider when evaluating potential value capture strategies.

First, North Carolina's state legislation and status as a Dillon Rule state significantly limits the ability to pursue certain value capture strategies; impact fees, for example, are impractical, and inclusionary zoning is minimally feasible and politically challenging. The Value Capture Strategies Matrix (see Appendix 1) can

be used to review the overall feasibility of each strategy assessed. Our matrix demonstrates that Municipal Service Districts are an attainable strategy for value capture: they are legally and administratively feasible, have moderate to significant expected returns, and are relatively more equitable than comparable value capture strategies, such as regressive sales taxes. That being said, value capture strategies can be layered, and the Dix Park team might consider pursuing an additional strategy, such as inclusionary zoning or land lease, in concert with an MSD.

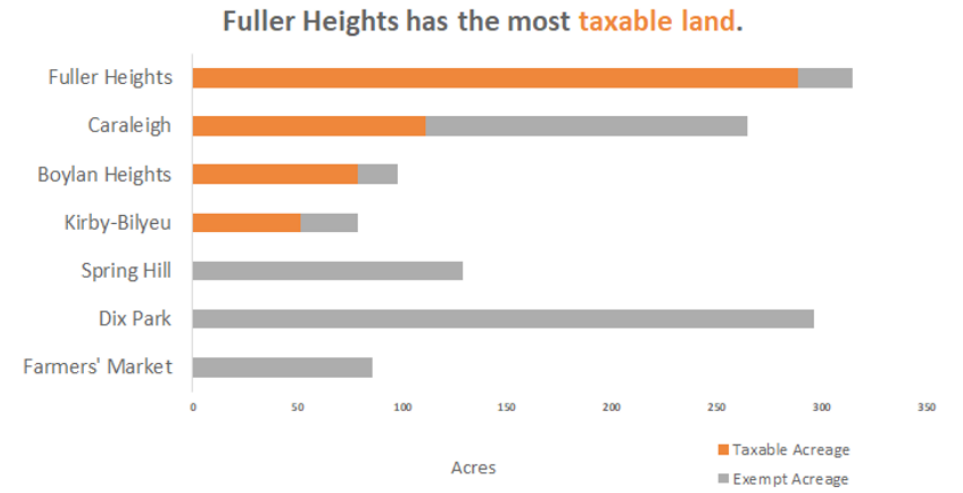
Second, while MSDs offer significant opportunities, they also pose challenges that should be considered prior to implementation. MSDs are preferable as a long-term value capture strategy that can help to pay for the cost of operations and maintenance over time. MSD funds are relatively unrestricted, can be used for a variety of park needs and investments, and provide revenue on a consistent, annual basis. Additionally, although many of the parcels surrounding the park are either institutional or city-owned, and therefore exempt from taxation, there are still significant opportunities for new development near the park. Institutional partners can also offer financial support in other ways, such as providing grants that support infrastructure or other investments within the MSD.

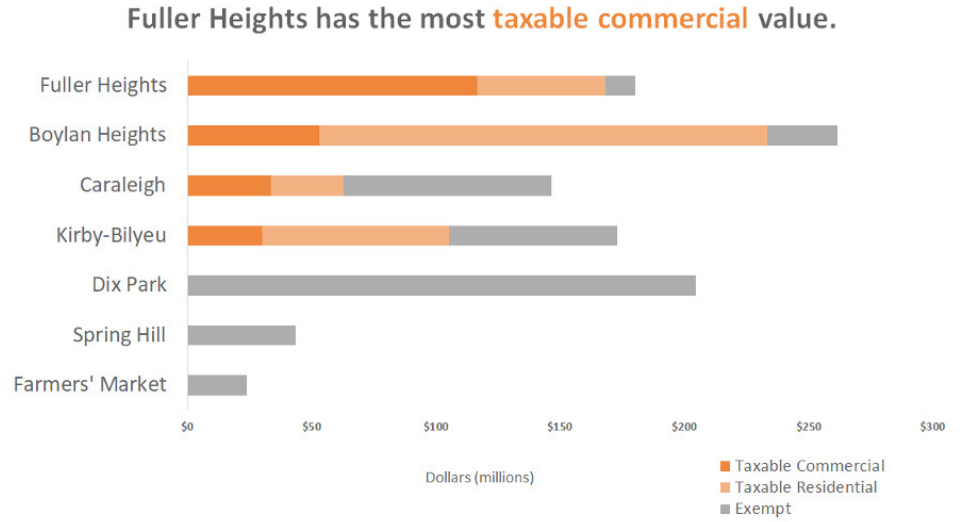
Finally, the Dix Park team will want to be intentional about considering potential equity concerns that might arise from implementing an MSD. As Figure 4 demonstrates, property values are not uniform across the neighborhoods we evaluated. MSDs may impose additional financial burdens on lower-income households, raising significant equity concerns and potential political pushback. Thoughtfully drawing MSD boundaries can help alleviate these concerns; our MSD model allows the Dix Park team to select different combinations of neighborhoods as they think through potential boundaries. Relatedly, public engagement (of residents, business owners, civic leaders, etc.) will be key to communicating the benefits that accrue to each party by implementing an MSD. It is our hope that the findings of this report serve as an effective basis for modeling the implementation of an MSD, and demonstrating to the public that an MSD will increase the overall vibrancy of both Dix Park and its surrounding neighborhoods.

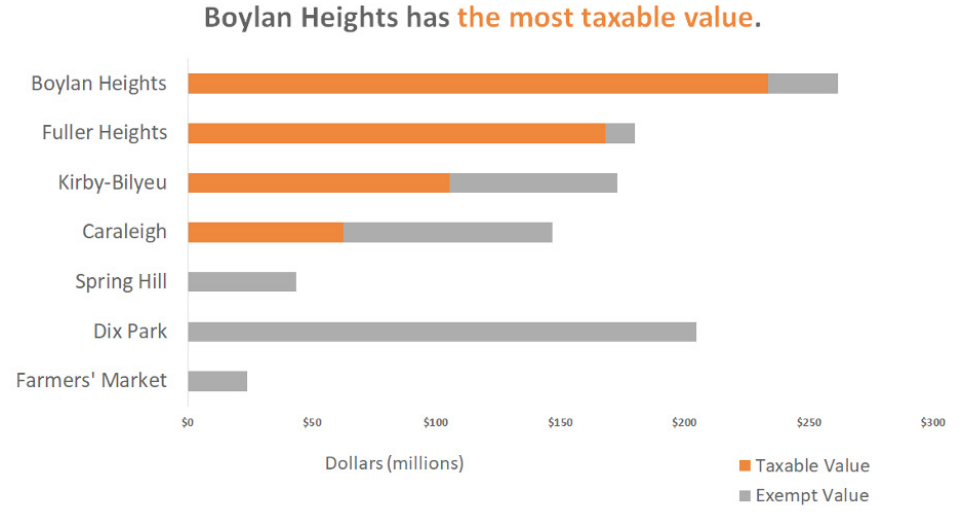
Appendix 1: Strategy Matrix

Strategy	Rank (Overall Feasibility)**	Legal Feasibility	Legal Feasibility	Administrative Feasibility	Administrative	Political Feasibility	Political Feasibility	Expected Returns	Value Captured
Land lease	8	Legally complex; require significant legal assistance in formulating contracts between public and private actor	2	Adminstratively complex; requires significant negotiation and shared understanding	1	Have potential to be politicaly unpopular without shared mutual objectives and community buy-in (see Brooklyn Bridge Park articles)	2	Moderate returns that reflect the increase in property value	3
Development agreement	8	Feasible	1	High	4	Low	2	Low	1
Inclusionary zoning	10	Infeasible	3	High	2	Low	3	*Generates affordable housing, not revenue	2
Impact fees	13	Infeasible	4	Medium	3	High	3	Low / medium	3
TIF	8	Feasible	1	Medium / high	3	Medium	2	Low	2
MSD	7	Feasible	1	Medium	2	Low	3	Medium	1
Upzoning	9	Less feasible	3	High	2	Medium / high	2	Low / medium	2

Appendix 2: Taxation in Fuller Heights & Boylan Heights







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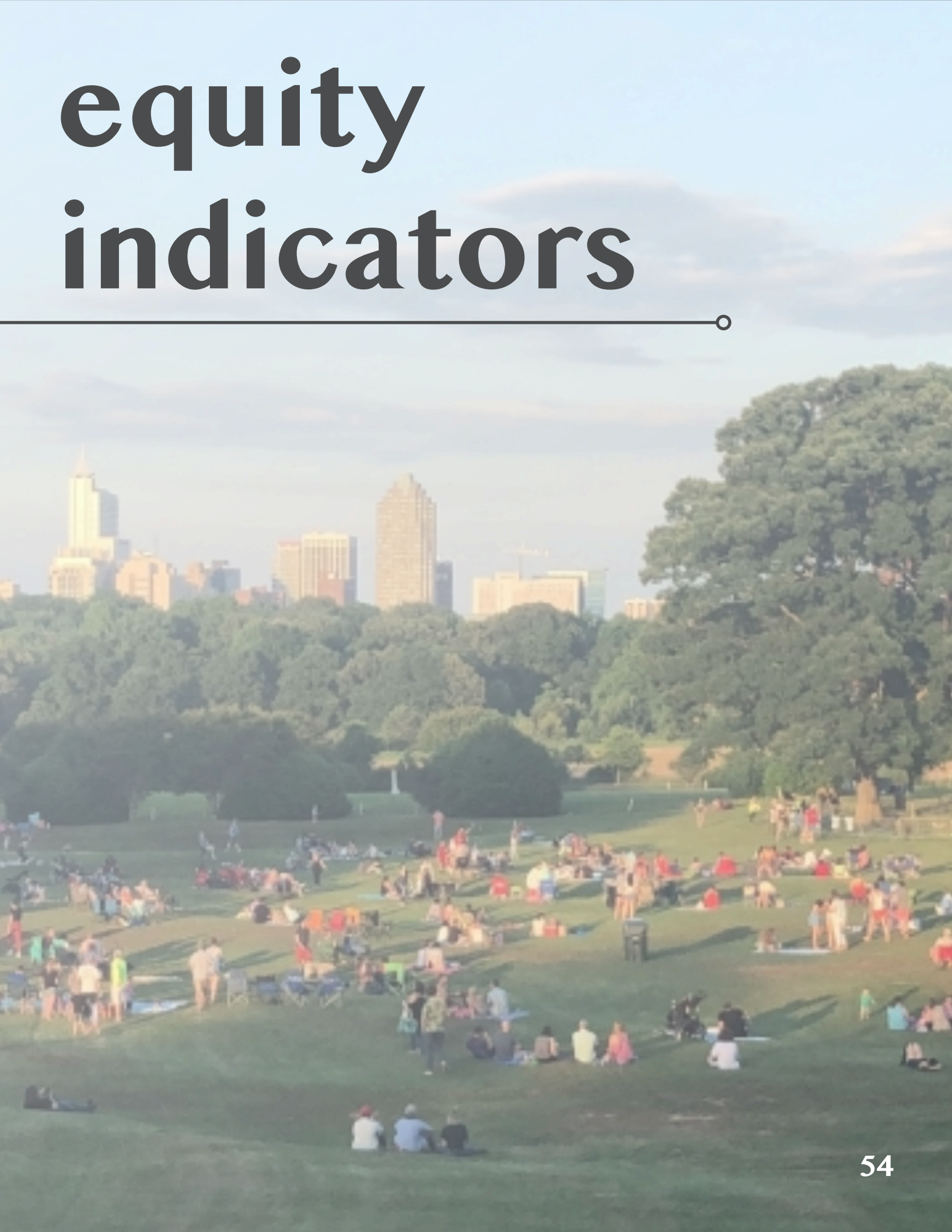
equity indicators



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Equity Indicators
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Executive Summary

Project Purpose

This project builds on the Dorothea Dix Park Equity Plan Framework to produce an evaluation tool that will help guide future development and decision making to align with the goals and values defined in the Equity Plan Framework. The resulting Dix Park Equity Scorecard incorporates indicators and metrics for the eight Equity Dimensions identified in the framework (Accessibility, Affordability, Engagement, Economic Opportunity, Programming, Environment, Legacy, and Health) to offer a tool to comprehensively but flexibly evaluate proposed projects or programs on how well they contribute to the Equity Dimensions.

Main Takeaways from Case Studies & Literature Review

In October, the project team completed a report of three case studies to inform the development of equity indicators and metrics for Dix Park. The selected case studies were the ChangeLab Solutions Complete Parks Indicators report, Washington, D.C.'s 11th Street Bridge Park Project and Urban Institute Evaluation Report, and the Asheville Parks and Recreation Department's Equity Matrix. While none of these case studies aligned perfectly with Dix Park due to differences in scope, they each provided insight that could be adapted to the Dix Park context. Ultimately, three overarching takeaways emerged from the cases:

1. **Feasibility**: Indicators need to be measurable with data that can be easily collected by park staff.
2. **Justifiability**: The metrics should be clearly linked to equity, and any deliverable which includes equity scores (including potential scorecards) should include descriptions of how indicators are chosen, measured, and scored.
3. **Flexibility**: As the definition of equity changes, and the needs of the park's users change, so too must the metrics used to measure the pursuit of equity by park planners. The indicators and the scorecard used to evaluate them should be adaptable.

In addition to the case studies, the project team reviewed relevant literature to get a better grasp on the 'state of practice' when it comes to incorporating equity planning and measurement into park development. This review revealed that while many other communities have developed city-wide equity initiatives, developing measurable goals and evaluation processes is difficult and requires long-term commitment. However, given the potential for parks to drive gentrification and displacement, as well as a wide range of equity concerns regarding accessibility and environmental health, identifying ways to measure the impacts of individual park investments is an important next step to extend the work in park equity.

Dix Park Equity Scorecard

The final product is an interactive Equity Scorecard that functions as a decision matrix, allowing Dix Park staff to establish priorities for a given project and evaluate the extent to which proposals meet those priorities. Each Equity Dimension has several indicator categories with corresponding metrics. The metrics are designed to balance numerous measures of equity, and the scorecard can be adapted in the future to meet changing priorities and community concerns. The project team has provided detailed instructions for its use, as well as a hypothetical proposal to demonstrate the application of the tool. Additionally, each of the indicators and metrics are discussed in turn to provide context and justify their inclusion in the scorecard.

Limitations & Recommendations

There are several limitations for the development and use of the equity scorecard that are important to acknowledge.

1. **Indicators were made for a wide range of proposals**: This scorecard aimed to be as comprehensive as possible, but not all indicators will be appropriate for every project.
2. **Lack of existing conditions data**: Developing indicators and creating specific scoring criteria were

limited due to not having existing conditions data, such as knowing the current quality of infrastructure in order to give specific impact measures for scoring an environment or accessibility indicator.

3. **Scoring criteria can be subjective and dependent on project**: Many indicators lent themselves to subjective and sometimes binary scoring criteria. Scoring values may need to be updated depending on the project.
4. **A proposal is not a binding commitment**: Evaluating projects this early and basing the scoring off proposals may miss unintended consequences that may arise during or after the implementation of the project or program.

of the tool. Additionally, each of the indicators and metrics are discussed in turn to provide context and justify their inclusion in the scorecard.

The project team offers the following recommendations to make the equity scorecard as useful as possible for the Dix Park staff and community.

1. **Continue existing conditions evaluation**: In order to make scoring criteria reflect specific impacts, it will be important to know the existing conditions to judge against. Once more of these baseline numbers are known, scoring can be made more specific.
2. **Adapt indicators for different projects**: Since this scorecard can be used for a wide variety of proposals, it should be adapted to only include relevant indicators for each proposal. This can mean either including additional indicators or weighting other indicators "zero" to exclude them.
3. **Involve the community in choosing indicators**: It is imperative to involve the community to determine what they see as priorities within each equity dimension. The project team views this equity scorecard as a starting point for discussion with the community.
4. **Utilize scorecard as an exclusion tool, not for selection**: This scorecard should be one of multiple tools used to evaluate proposals for a specific project or program. The equity scorecard should be used as an early tool to exclude proposals that do not meet Dix Park's equity considerations. While the scorecard can be considered in the selection of a proposal, there should be a more

Introduction & Project Purpose

This project builds on the Dorothea Dix Park Equity Plan Framework to produce an evaluation tool that will help guide future development and decision-making activities that align with the goals and values defined in the Equity Plan Framework. The framework identifies 8 equity dimensions that the park will focus on: **Accessibility, Affordability, Engagement, Economic Opportunity, Programming, Environment, Legacy, and Health** (shown in Figure 1).[72] The plan framework also draws the distinction between internal and external equity, acknowledging that the park must consider the equity impacts of development both within the bounds of the park itself, as well as the impacts on the surrounding communities and the region as a whole. To support long-term monitoring of the park's successes and challenges in meeting equitable development, the framework identifies the need to develop metrics and benchmarks against which the park's progress can be measured. The project team's work is a direct response to this recommendation, and begins the process of developing indicators and metrics that can be applied to proposals for future park programs.

Fig. 1 : Dix Park Equity Dimensions

Indicators can provide a clear and comprehensive strategy for measuring park equity. They are also useful for an initial evaluation of equity and provide a framework to measure future progress. Indicators can be continually implemented over time and provide a strategic and fairly consistent method for evaluating gaps and progress. This approach can also provide a level of transparency in terms of how the park defines equity, as they can be used as justification for park decisions and resource allocation.

Through an iterative, semester-long process, the project team of graduate students in the Department of City and Regional Planning at the University of North Carolina at Chapel Hill have conducted a literature review, created a collection of case study reports, and developed a scorecard for measuring the equity of future park programming proposals. The scorecard contains specific measurements for each indicator defined in the Dix Park Equity Framework. The team recognizes that these materials must be used in conjunction with community conversations, staff knowledge, and context-setting in order to adequately make decisions that promote equity through the eight different equity dimensions identified in the Dix Park Equity Framework. Overall, the goal is that this scorecard and supporting information is used by the park staff and community to better align current and future programming with the equity goals and values already identified in the framework.

Literature Review

This project has grown out of several threads in the realm of equity planning and park development. Although there are few direct examples of a single park investing in long term equity planning and benchmarking, there is reason to see it as a necessary and beneficial step. Our team draws justification for this process from both the growing body of work on equity planning and measurement at the municipal and municipal system's level, and through the growing acknowledgement of the outsize influence that large-scale park investments exert on the surrounding communities.

An increased focus on the equity impacts of major civic investments and institutions has led to a rise in city-wide equity initiatives. While equity plans are widespread, many have found that setting measurable goals and benchmarking progress is difficult to define. This problem is not new; there is a substantial and long-standing body of literature on questions of incorporating equity into facility siting and an emerging body of literature on privatization of municipal services that exists specifically to develop consistent methods for measuring such a difficult-to-define concept.[73,74] The College of New York Institute for Local Government established a groundbreaking program in 2017, seeking to move the practice forwards and think creatively about holistic equity planning and measurement at a city-wide scale.[75] The program aimed to assist several major cities in developing actionable and measurable equity plans that would include long term monitoring of data. With long-term, consistently collected metrics, those cities were better able to track successes and changes in equity over time. Other communities such as St. Louis, Tulsa, and Oakland have developed individualized frameworks and indicators through a participatory process, and have developed baseline metrics to track future progress.

Given that equity is influenced by local history and needs, the indicators and metrics that cities have developed vary. However, there are some commonalities. One common feature is that the cities score equity along a number of dimensions (such as housing, public health, community engagement, accessibility, etc.)—a feature adopted in the Dix Park Equity Framework. Another is the importance of data: many of the equity metric frameworks use local and nationally produced datasets to provide consistent measurements over time. This process of metric development and scoring has spread beyond the city level to individual systems and programs.

Another thread guiding this work is the growing number of modern park developments that have had outsize impacts on surrounding communities. Modern park projects such as the Atlanta Beltline, the New York City Highline, or closer to home in the proposed Durham Beltline, have come under criticism for failing to consider the ramifications of these investments for

surrounding communities.[76] The potential for park projects to spur gentrification, displacement, and shifts in business and residential trends is substantial, and a reason for caution. Equally concerning is the manner of park investment, which often flows top-down, with local residents' voices too often absent from the process.[77] The planning profession as a whole has awoken to this issue, with organizations such as the American Planning Association and the National Recreation and Parks Association identifying equity in parks as a fundamental issue of the practice.[78,79]

Some communities have pushed for a more equitable park development and investment process that highlights community needs. They are also using equity scorecards to their advantage; in Durham, the non-profit A Durham Beltline for Everybody applied Minneapolis' municipal equity scorecard to the Beltline project, noting the very poor score that Durham would receive in community engagement.[80] While an effective and resourceful approach, this application speaks to a fundamental issue in equity measurement: there is not a framework in place for an equity scorecard to measure individual projects, rather than entire systems. Some park systems/departments have sought to fill this gap with dedicated equity plans and metrics at the system level. One of the case studies below, the City of Asheville, is an example, but so too are major cities like New York City.[81] These plans fill a valuable role, coordinating the expansion, maintenance, and financial investments among parks to center issues of equity, and focus on improving park access and service for communities that have suffered from historic and ongoing disinvestment. However, these equity frameworks and their accompanying metrics are typically centered on distributing funding and programming among the park system, and often lack the granularity to explore the impacts of individual investments on a micro level. Given the previously mentioned potential that individual parks can wield in driving gentrification and displacement, as well as a wide range of equity concerns regarding accessibility and environmental health, identifying ways to measure the impacts of individual park investments is an important next step to extend the work in park equity to the neighborhood scale.[82]

Takeaways from Case Studies

The goal of this project was the development and implementation of indicators to provide a clear and comprehensive strategy for measuring the equity of Dix Park investments. Case study analysis was used to advance the team's understanding of the current 'state of practice' for identifying and measuring equity in park development and incorporate successful practices that can be applied to Dix Park equity indicators. As mentioned in the literature view, developing equity indicators for park planning is an emerging field, and few comprehensive examples exist. Many of the existing examples are either part of city-wide equity initiatives or are applied broadly to the entire park system, which is not directly applicable to the Dix Park equity scoring framework of analyzing specific park investments. As a result, the team selected a mixture of case studies and reports with the highest potential applicability to the Dix Park equity scoring process. The selections were the ChangeLab Solutions Complete Parks Indicators report, Washington, D.C.'s 11th Street Bridge Park Project and Urban Institute Evaluation Report, and the Asheville Parks and Recreation Department's Equity Matrix. Analyses of these selections were aligned with the eight equity dimensions developed in the Dix Park Equity Framework.

The ChangeLab Solutions Complete Parks Indicators report is focused on framing equity considerations for a large park system.[83] Rather than a specific example of equity indicators in practice, this is a 'best practices' guidance document for practitioners. While the document is aimed at park-system planning, the team found that many of the metrics are applicable given the large, regional nature of Dix Park. Despite this applicability, little guidance is available on how to adapt the metrics for individual parks or park projects. The report identifies seven elements of a complete park. While these elements do not align directly with the eight equity dimensions in the Dix Park Equity Framework, the team identified consistent connections between the two, which are outlined in detail in the case

study report produced in October. Overall, two main themes emerged from this process: 1) the importance of community direction and input, as well as flexibility with changing community priorities; and 2) the need for disaggregated data by numerous factors emerged as a tool to understand how various park programs and policies may have different effects on diverse user groups. From these, the team found that a smaller, prioritized list of indicators centered around community feedback and robust data collection may fit best into the Dix Park context, especially given limited staff capacity.

The Asheville Parks and Recreation Department Equity Matrix is a set of equity-based criteria for prioritizing capital investment and large park-focused rehabilitation projects, and is centered around the larger goal of 'Dynamic Parks That Shape City Character and Meet Diverse Community Needs.[84] It includes seven indicators. The Dix Park Equity Framework dimensions 'Engagement' and 'Legacy' aligned particularly well with the indicators in the Equity Matrix. In developing this project, the Asheville Parks and Recreation Department was transparent and clearly justified the decisions that were made. Additionally, the criteria were based on easily accessible data sources such as Census data, internal data, and data from other City departments. Each criterion was clearly explained, including its purpose, the data sources, and its weighting, which enhanced the clarity of the overall Equity Matrix. Outside of the Equity Matrix itself, the Asheville Parks and Recreation Department took steps to ensure that equity, and specifically racial equity, would continue to be addressed through budgeting for racial equity and the development of a succession plan that ensured racial equity and representation among new leaders.

The final case study focused on the 11th Street Bridge Park project in Washington, D.C.[85] The project aims to repurpose a bridge into a recreational, cultural, and environmental destination. The park connects the Anacostia Neighborhood, which has endured a history of segregation and disinvestment, to the rest of the District. Park planning staff have developed an Equitable Development Plan (EDP) in cooperation with Anacostia residents to center the community and mitigate negative externalities. The plan focused on four key areas: 1) affordable housing, 2) small business, 3) workforce, and 4) arts & culture. Overall, the team developed four main takeaways that could be useful for Dix Park. First, there is a need to define the scope; leaders in the 11th Street project were realistic about what could be achieved with their limited resources and their sphere of influence. Second, park leaders in the 11th Street project engaged multiple partners including non-profit organizations, other local government agencies, and the private sector, which expanded the Department's sphere of influence and created additional data and data collection capacity. Third, Park leaders also adopted a long-term mindset, recognizing that promoting equitable development will take a long time and performance measures need to be tracked and adjusted over time. Finally, the performance measures utilized in the project were specific and measurable. The project team's case study report demonstrates how these four takeaways could be applied to the assessment of the Environmental and Health equity dimensions in the Dix Park Equity Framework.[86]

Through the analysis of these case studies and reports, three overarching lessons emerged as potential guides for the Dorothea Dix Park equity indicators development: Feasibility, Justifiability, and Flexibility. Metrics need to be measurable, preferably relying on existing data collection methods, in order to minimize the disruption to park planners while tracking progress towards equity goals. Outputs may be more feasible than outcomes given the limited time and resources of park staff. Additionally, the metrics that are developed should be clearly linked to equity, and any deliverable which includes equity scores should include descriptions of how indicators are chosen, measured, and scored. These efforts will ensure consistency and transparency in the long-term. Finally, as the definition of equity changes, and the needs of the park's users change, the metrics must also be adjusted. The indicators and the scorecard should be adaptable with regards to the content and the ranking of priorities. As a 'living document', this will allow the park to be continually responsive to current and future equity concerns of the community.

Equity Scorecard Methodology

The Equity Scorecard is an evaluation tool designed to help park staff conduct an alternatives analysis. For example, perhaps the park is the beneficiary of a grant, and receives multiple proposals for programs or projects in which park staff could invest the funds. The Equity Scorecard is a layered decision matrix which allows evaluators to determine their priorities and score proposals accordingly.

The Equity Scorecard is an Excel document which will be provided to the park staff as an attachment to this report. It is based on the Dix Park Equity Framework, which identified eight dimensions of equity: Accessibility, Affordability, Engagement, Environment, Economic Opportunity, Health, Programming, and Legacy. Each of these dimensions of equity is evaluated using a series of indicators which evaluators will use to assess each of the proposals under evaluation.

These indicators are organized as shown in Figure 2a below:

As shown in Figure 2a, each indicator has a category. This identifies the community or concern of interest. The rationale identifies in accessible language why the indicator is included. The metric(s) which accompany each indicator are measurable, concrete questions. These questions may be answered using either binary yes/no answers, categorical answers (i.e. multiple choice), or continuous answers (i.e. numbers). For example, under the Local Businesses category, there are two metrics: a categorical and continuous metric. Each possible answer is scored.

In order to evaluate proposals, the park staff should answer each question for each proposal, as shown in Figure 2b below:

Fig. 2a : Sample Indicators (Dimension Shown: Engagement[87])

3. Engagement - Indicators for Evaluation												
Indicator Category	Local Businesses			Residents		Youths		BIPOC		Seniors		
Indicator Rationale	Businesses should be involved in decision-making processes that will impact the local area.			Local residents should be part of the community they are part of, and involved in decision-making processes concerning major investments in the park.		Many people under 18 years old use the parks, and therefore should be involved in decision-making concerning major investments in the park.		In order to have an equitable engagement process, BIPOC residents should be involved in decision-making concerning major investments in the park.		Many people over 65 years old use the parks, and therefore should be involved in decision-making concerning major investments in the park.		
Indicator Metric	What type(s) of meetings does the proposing party plan to conduct?	How many surveys will the proposing party collect?	Score	How did/does the proposing party intend to involve current community residents in the decision-making process?	Score	Did/does the proposal indicate an intention to involve those under 18 years old in the decision-making process?	Score	How did/does the proposing party engage with BIPOC?	Score	Did/does the proposal indicate an intention to involve those over 65 years old in the decision-making process?	Score	
Lowest Measurement	None	0	0	N/A	0	No	0	N/A	0	No	0	
	Online event	100	1	Online events	1			Online	1			
	Lecture	200	2	Lectures	2			Educationals	2			
	Educational	300	3	Educationals	3			Local organizations	3			
	Focus groups	400	4	Focus groups	4			Focus groups	4			
Highest Measurement	Participatory	500	5	Participatory events	5	Yes	5	Participatory	5	Yes	5	

Fig. 2b : Sample (Hypothetical) Evaluation (Dimension Shown: Engagement)

3. Engagement - Project Evaluation												
	Local Businesses			Residents		Youths		BIPOC		Seniors		Total Score
	What type(s) of meetings does the proposing party plan to conduct?	How many surveys will the proposing party collect?	Score	How did/does the proposing party intend to involve current community residents in the decision-making process?	Score	Did/does the proposal indicate an intention to involve those under 18 years old in the decision-making process?	Score	How did/does the proposing party engage with BIPOC?	Score	Did/does the proposal indicate an intention to involve those over 65 years old in the decision-making process?	Score	
Weight	7			1		2		10		6		26
Project A	None	330	1.5	Focus groups	4	No	0	Local organizations	4	Yes	5	3.3
Project B	Lecture	425	3	Participatory events	5	Yes	5	Online	4	No	0	2.9
Project C	Participatory event	75	2.5	N/A	0	Yes	5	Participatory events	5	Yes	5	4.1

For example, in Figure 2b, Project A is proposing to hold no meetings with local businesses, but will collect 330 surveys from the local business community. Per the scores shown in Figure 2a, the score for "no meetings" is 0, and the score for "330 surveys" is 3; these scores average to an overall score of 1.5 for Project A's proposed engagement with the local business community.

Each indicator within each equity dimension is weighted. These weights reflect the priorities of the park staff, funders, and community at the time of the evaluation. The weights range between 1 and 10. For example, as shown in Figure 2b, in the hypothetical evaluation demonstrated, engagement with BIPOC (Black, Indigenous, and People of Color) communities has a weight of 10, while engagement with local residents has a weight of 1; this demonstrates that engagement with BIPOC communities is greatly prioritized, while engagement with residents, while important, is not a priority within this evaluation.

Once evaluators assess each project for each dimension of equity, they can consider the overall scores for each project as shown in Figure 2c below:

The scores are populated automatically by the indicator spreadsheets; the evaluators need only assign weights to each dimension.

This tool, while designed to assist park staff in fair assessment of proposals, is not designed to completely determine the best course of action. It should rather be used as a tool of exclusion, identifying areas where proposals are lacking and misaligned from the priorities of the park staff, funders, and most importantly, community served by the park. For example, in Figure 2c, Project C is the highest-scoring project overall. However, Project C receives the lowest score of all three projects for Affordability, which is the highest-weighted dimension of equity. Park staff may still decide that Project C, despite its relatively high score, is not the best choice for the park as proposed. This is acceptable; the tool still worked as designed because it identified strengths and weaknesses of each proposal relative to the park's priorities.

Fig. 2c : Overall Equity Evaluation Matrix

	Equity Project Evaluation								
Indicator	1. Accessibility	2. Affordability	3. Engagement	4. Environmental	5. Economic Opportunity	6. Health	7. Programming	8. Legacy	Total
Weight	7	9	2	3	5	6	2	5	39
Project A	1.8	1.3	3.3	2.6	3.9	1.4	1.2	3.3	2.2
Project B	2.6	2.7	2.9	2.1	2.3	2.1	3.6	2.4	2.5
Project C	3.3	1.0	4.1	2.6	3.1	2.9	3.5	2.4	2.6

Instructions for Using the Equity Scorecard

These instructions are included in the Appendix to serve as a stand-alone document.

Note that if a team is evaluating proposals, each of these steps should be completed by each team member in isolation. This will avoid "group think" and allow team members to validate and cross-check each other's work.

1. Collect all proposals being evaluated. It is best to evaluate all proposals together.
2. Always begin each evaluation with a new blank template scorecard. Every time a new evaluation is conducted, save a new copy of the scorecard to begin working
3. Confirm that the scores that correspond to each possible answer are applicable to the scope and scale of potential projects.

   • Not all sections and metrics will apply to the scope of potential projects, and may not be necessary to score
   • If you would like to leave metrics blank (not applicable to project), fill in with a "[x]"
   • Evaluators can also adjust score values based on the scope and scale of the proposed projects.

4. Assign weights to each of the eight dimensions of equity.

   • Evaluators may assign weights evenly across the 8 dimensions, or adjust to prioritize dimensions of particular importance

5. Assign weights to each indicator within each dimension of equity.

   • Indicators within the eight dimension tabs can also be evaluated evenly or prioritized depending on the assigned weight

6. For each proposal, assess the indicators for each dimension by answering the metric questions. The scorecard should automatically calculate scores.*
7. If multiple team members conducted an evaluation (completed Steps 3-6), reconvene as a group to identify and resolve conflicts in scores, measurements (answers), or weights.
8. Use the final scores to assist in proposal selection. If they identify gaps in the "best" proposal, they may also be used to make changes to the proposal or project scope.

Description of Indicators

The indicator categories and metrics were chosen to reflect the goals and values outlined in the Dix Park Equity Plan. The following section describes the indicator categories for the Equity Scorecard, and connects them to the Dix Park equity framework. Included in each section is also the Dix Park characterization of the eight dimensions. While the scorecard is broken into separate dimensions, it is important to note that individual categories and metrics cut across multiple equity dimensions. The indicators do not work in silos despite being separated into different sections. The indicator summary in Appendix 2, displays each metric and any overlapping dimensions.

Accessibility

The Accessibility dimension focuses on "the ability for all users to appropriately access, participate in, and enjoy park grounds, facilities, programs, and events."[88] Metrics for this dimension aim to understand how proposed projects intend to accommodate and foster accessibility in terms of participation from all users, connectivity throughout the park, and access via a range of transportation modes. The indicator categories for this dimension are ***Public Transportation, Walking, Bicycling, Driving, Ability of Travel- Financial, Ability of Travel-Physical, Connectivity,*** and ***Universal Design.***

Public Transportation, Walking, Bicycling, Driving

These indicator categories highlight the importance of diverse transportation options and the role that transportation mode plays in ensuring that everyone who wants to can access public projects and amenities. The metrics included in this category are:

- Is the proposed project in proximity to existing facilities that support walking (sidewalks, mixed used paths, etc)?
- Does the project proposal include facilities that will support walking (sidewalks, mixed-used, etc.)
- Is the proposed project in proximity to existing facilities that support biking (bike lanes, mixed used paths, etc.)?
- Does the project proposal include facilities that will support biking (bike lanes, mixed-used paths, etc.)?
- Is the proposed project in proximity to existing bicycle parking?
- Does the project proposal include bicycle parking?
- Is the proposed project in proximity to existing vehicle parking?
- Does the project proposal include vehicle parking?
- Does the proposed project involve a park specific transportation cost (either for the specific program or the park generally)?
- Does the proposed project connect with accessible transportation for those with disabilities?
- Does the project proposal increase connectivity to the existing transportation network inside the park?
- Does the project proposal increase connectivity to the existing transportation network outside the park?
- Is the project within [x] distance to key destinations or amenities, or [x] percentage of key destinations and amenities?
- Does the project proposal include multiple points of entry from within the park?
- Does the project include wayfinding signage?
- Does the project include features in the appropriate languages for the resident population?
- Does the project proposal include design features that meet the needs of those with disabilities?

Ability to Travel - Financial

This indicator encourages proposed projects to eliminate or minimize park-specific transportation costs, if possible, to ensure that finances are not a barrier to accessibility. This indicator acknowledges that any additional costs may limit who can afford to access these opportunities. The metric for this indicator is:

- Does the proposed project involve a park specific transportation cost (either for the specific program or the park generally)?

Ability to Travel - Physical

The project should connect people with transportation options that meet their needs. This indicator recognizes that inclusive park projects must consider the full range of abilities represented in the community. The metric for this indicator is:

- Does the proposed project connect with accessible transportation for those with disabilities?

Connectivity

This indicator encourages proposed projects to connect people to other amenities within the park as well as important destinations outside of the park in an easy, user-friendly manner. Projects that foster connectivity to and within the park broadens who and how many people can participate. The metrics for this park are:

- Does the project proposal increase connectivity to the existing transportation network inside the park?
- Does the project proposal increase connectivity to existing transportation outside the park?

•Is the project within [x] distance to key destinations or amenities, or [x] percentage of key destinations and amenities?
- Does the project proposal include multiple points of entry from within the park?

Universal Design

This indicator acknowledges that projects should incorporate design features that accommodate the needs of all users. As a "Park for Everyone", Dix Park aims to uphold this commitment through universal design and inclusion standards that consider the full range of abilities represented in the community. Metrics for this indicator include:

- Does the project include features in the appropriate languages for the resident population?
- Does the project proposal include design features that meet the needs of the disabled?

Affordability

The Affordability dimension focuses on "The ability for community members to participate in park programs, events, and offerings regardless of financial ability."[89] As a public park, it is important for Dix to offer programming and events that are financially accessible for the local community. Metrics for this dimension should capture how well the proposed projects strive to uphold this goal of affordability. Indicator categories for this dimension are Cost, Cost Support, and Payment Type.

Cost

The cost category acknowledges that projects considered for Dix Park should aim to be financially accessible to a wide range of park users and keep costs as low as possible. A key component of equity is ensuring that cost is not a barrier to participation. The metrics included in this category are:

- Does the program intend to require participants to pay a fee?
- Does the program proposal discuss/consider affordability for visitors/users?

Cost Support

As cost is a primary barrier to participation, this category encourages project proposals to facilitate the participation of community members regardless of financial means, such that everyone has equal access to park programming. While not all park projects will be free, cost support can provide access to community members who may otherwise be excluded by cost. The metrics included in this category are:

- Does the program intend to determine cost on a sliding scale?
- Does the program intend to offer scholarships or other financial assistance opportunities?
- Does the program include plans for alternative internal park payment structures such as vouchers?
- Does the program proposal include alternative funding opportunities (grants) that could mitigate cost for participants?

Payment Type

This category acknowledges that proposed projects should try to maximize inclusiveness by providing a variety of payment options that respect participants' ability to pay. Banking resources (credit cards, debit cards) are inherently exclusionary. This category recognizes that expanding payment options facilitates equitable use of park projects. The metrics included in this category are:

- Does the proposed program intend to accept multiple forms of payment (cash, checks, credit card, phone apps (e.g. Venmo, PayPal)?
- Does the proposed program intend to accept SNAP/WIC?
- Does the proposed program include payment in the form of volunteer hours?

Engagement

The Engagement dimension focuses on "the ability for community members to participate in park planning processes and decision-making regardless of demographic characteristics."[90] Metrics for this dimension gauge how well the proposed projects engaged and consulted the local community, emphasizing how applicants have/will engage a diverse set of community stakeholders, especially, underrepresented community members. The indicator categories for this dimension are Local Businesses, Residents, Youths, BIPOC, and Seniors.

Local Businesses and Residents

These two indicator categories recognize that residents and local businesses should be involved in major decision-making processes that will impact the local area where they live, work, and play. This indicator reflects the importance of strategically incorporating input from the local community and seeking a range of needs and visions expressed by those who will be impacted by park development. Metrics for these categories include:

- What type(s) of meetings does the proposing party plan to conduct?
- How many surveys will the proposing party collect?
- How did/does the proposing party intend to involve current community residents in the decision-making process?

Youths and Seniors

These two indicator categories recognize that many people under 18 years old and many people over 65 years old use parks, and may have distinct needs and visions for Dix Park. Therefore these age groups in particular should be involved in decision-making around major investments in the park. The metrics for these categories are:

- Did/does the proposal indicate an intention to involve those under 18 years old in the decision making process?
- Did/does the proposal indicate an intention to involve those over 65 years old in the decision

BIPOC

This category acknowledges that proposed projects should engage BIPOC residents and ensure involvement in the decision-making process around park development. Dix park recognizes that a "Park for Everyone" necessitates involvement of everyone in the planning process. The metric for this category is:

- How did/does the proposing party engage with BIPOC?

Environment

The environment dimension focuses on "the provision of sustainable and environmentally-friendly systems throughout Dix Park" while additionally considering the impacts of development beyond park boundaries.[91] This dimension recognizes that park development and projects will require significant energy inputs and could substantially contribute to environmentally negative outputs if not managed. Similarly, this dimension recognizes that park developments should not contribute to the disproportionate environmental burdens faced by local communities. Metrics for this dimension should capture how well proposed projects consider a level of environmental management and mitigation. The indicator categories for this dimension are Stormwater Management, Water Conservation, Waste Management, Energy Use, Habitat Creation/Restoration, and

Stormwater Management

This indicator category acknowledges that proposed projects should not add a burden to already burdened infrastructure systems. If overwhelmed, stormwater infrastructure can cause unsafe and damaging flooding and pollution challenges to the local community. The metrics for this category are:

- Will the volume of stormwater discharged by the project/program be reduced beyond regulatory requirements?
- Will the flow rate of stormwater discharged by the project/program be reduced beyond regulatory requirements?

Another metric under the Stormwater Management indicator that we recommend be added once the necessary existing conditions data are collected is: Will the stormwater discharged by the project/program be discharged to a pipe network that is disproportionately burdened relative to nearby pipes? This indicator was not included because the evaluation of the capacity and quality of existing drain lines is ongoing; however, to avoid exacerbating existing disparities in infrastructure quality, Dix Park staff should consider incorporating this indicator in future iterations of the scorecard.

Water Conservation

The water conservation category should encourage proposed projects to promote water conservation while ensuring equitable access throughout the park. The metric for this indicator category is:

- Does the proposal include any non-low-flow fixtures?

Waste Management

This indicator category should encourage proposed projects to minimize contributions to landfills. Minimizing waste is an important environmental consideration, but is also central to equity challenges. The disposal and management of waste and landfills tend to disproportionately burden communities of color. The metrics for this category are:

- Does the proposal include a plan for recycling?
- Does the proposal include a plan for composting?

Energy Use

The energy use category recognizes that proposed projects should minimize contributions to climate change impacts. Similar to waste, climate impacts disproportionately affect communities of color, and communities with limited capacity to adapt to climate change. The indicator metric for this category is:

- Does the proposal include an energy conservation plan?

Habitat Creation / Restoration

This indicator category acknowledges that proposed projects should not rely on invasive or non-native species, and should highlight the biodiversity of North Carolina. Such considerations tend to minimize the amount of energy and resources used to maintain park landscape and vegetation. Specifically, the use of native species tends to decrease the amount of water and fertilizer used to maintain the park, protecting overall water quality for the surrounding area.

- Does the proposal indicate that any non-native plants be used?

Temperature

The temperature category recognizes that proposed projects should minimize contributions to climate impacts and provide a comfortable urban space for all users. The indicator for this metric is:

- Does the proposal include considerations of urban heat island and/or thermal comfort of users?

Economic Opportunity

The Economic Opportunity dimension focuses on "the distribution of economic development opportunities through onsite development, programming, and events."[92] Metrics for this dimension capture how well proposed projects promote equitable economic development on-site, in the surrounding community, and, potentially, across the Triangle. The indicator categories for this dimension are ***Contracting & Procurement, Workforce Development, Project Financing***, and ***Local Economy***.

Contracting & Procurement

This indicator category acknowledges that on-site projects have the opportunity to support locally-owned and/or female- and persons-of-color-owned businesses. Tracking when proposals include contracts with such businesses helps to create a more equitable distribution of capital and opportunity. The metrics included in this category are:

- What percentage of contractors are/will be women- and/or persons-of-color-owned businesses?
- What percentage of contractors/partners are will be locally-owned businesses?

Workforce Development

This indicator category recognizes projects that create opportunities for local workforce development. Depending on the type of project, there may be temporary employment that is needed, in which case it is important to consider the wages paid to these employees. Other projects may include volunteer hours, which while not paid, can help community members develop skills or simply feel more connected to the community. The indicator metrics for this category are:

- Does this project/program create temporary employment opportunities?
- What is the expected mean hourly wage for jobs created through this project?
- Does this project create volunteer opportunities?
- What is the number of volunteer hours generated by the project/initiative?

Project Financing

This indicator category encourages Dix Park staff to consider the funding streams for different projects. In some cases, using mostly public funds for a certain project will be the most feasible and appropriate approach. However, supplementing with private dollars or relying primarily on private funding may be more feasible and appropriate in other cases. Recording a funding ratio can help ensure that public funds are being used equitably and that sources of private funding will not impede broader equity goals.

While there is no normative standard that can be applied to all projects, this category promotes transparency for project funding and can also be used for evaluation purposes in the future. Because of the subjectivity of the financing metric, it is not included in the current iteration of the Equity Scorecard. However, the project team felt it was important information to track and inform funding decisions. The metric for this category is:

- What is the ratio of outside funds to municipal funds for the project/program?

Local Economy

Finally, the Local Economy indicator category recognizes projects that engage or directly support local businesses. This may include marketing opportunities for local businesses or even direct revenue. The metric included in this category is:

- Does this project/program generate marketing and/or revenue opportunities for local businesses?

Health

The health dimension focuses on "the provision of fair and just opportunities to attain the full health potential of the community."[93] This dimension recognizes that Dix Park projects can play a role in creating opportunities for healthy lifestyles, not just for a few, but for everyone. The indicator categories for this dimension are Physical Activity, Mental/Emotional Health, Social Health, and Spiritual Health.

Physical Activity

This indicator category recognizes that proposed projects should provide space for and encourage physical activities including sports, walking, biking, and group exercise classes. Projects that create the space and opportunity for physical activity can significantly improve the health of the local community and all park users. The metric for this indicator category is:

- Does this project/program intend to promote physical activity?

Mental / Emotional Health

This indicator category encourages proposed projects to increase the park's ability to provide relaxation and help fight against mental health issues such as stress, anxiety, and depression. The metric for this category is:

- Does this project/program intend to positively affect mental/emotional health?

Social Health

This category encourages proposed projects to help the park foster a sense of community. The metric for this indicator is:

- Does this project/program intend to promote social connectedness?

Spiritual Health

This indicator category recognizes that proposed projects should help the park to be a place where park visitors can find space for spiritual connection, reflection, and mindfulness, which are key dimensions of wellness. The metric for this indicator is:

- Does this project/program intend to promote spiritual health and wellness?

Programming

The programming dimension focuses on "the provision of on-site programming and events that serve all abilities and supports diverse interests."[94] Park projects that provide relatable programs play a key role in assuring everyone sees themselves reflected in the park and encourages community-park connection. The indicator categories for this dimension are ***Accessibility of Program Space-Time, Community Interests and Needs are Met, Community Involvement in Program-Space Design, Informal and Unsupervised Use, Coordination with Existing Programming,*** and ***Programming for Target Subpopulations***.

Accessibility of Program Space-Time

This indicatory category should capture proposed projects that acknowledge that community members have different leisure hours, and need park programs and spaces to be available across a range of days and times. The metrics for this category are:

- What percentage of proposed program space is reasonably expected to be accessible outside 9-5 hours?
- Is the program space expected to be accessible on weekends (Sat-Sun)?
- Is the program space expected to be accessible on weekdays?

Community Interests & Needs Are Met

This category should capture proposed projects that promote programming and spaces that reflect the expressed interests and needs of the communities that use the park. The metric for this category is:

- Does the proposed program fulfill an expressed interest from the community?[95]

Community Involvement in Program-Space Design

This indicator category recognizes proposed projects that aim to reflect the diverse cultures and aesthetics of the broader community, through the meaningful and equitable involvement of community members in the design and development of project spaces. The metrics for this category are:

- Does the proposal center community members in the development of program space design?
- Will diverse artists be engaged to develop park spaces?
- Will community members involved in designing park elements be meaningfully compensated?

Informal & Unsupervised Use

This indicator category highlights proposed projects that acknowledge the important value of informal and unsupervised use of program spaces and resources outside of dedicated program times. Research shows that unstructured use of spaces (pick-up games, impromptu picnics, etc.) are an essential element of developing community social networks and capital.[96] The metric for this category is:

- Will the proposed program space/resources be available for informal/unsupervised use?

Coordination with Exisiting Programming

This category recognizes that proposed projects should meaningfully and intentionally consider the relationship between proposed programs and existing programs/events that are ongoing in the surrounding community. Efforts should be made to incorporate and coordinate with existing program providers and to acknowledge their work. The metric for this indicator is:

- Does the program meaningfully incorporate existing community programs of similar type (where those exist)?

Programming for Target Subpopulation

This category acknowledges that proposed projects should meet the needs of critical sub-populations (e.g. the elderly, youth, etc.) through targeted program offerings and curated spaces. The metric for this indicator is:

- Does the proposed program target a subpopulation of interest?

Legacy

The Legacy dimension focuses on "the observation and commemoration of the layers of history and legacy of the Dix Park site."[97] It is important that park projects provide equitable exposure to the many elements of the site's history. The indicator categories included in this dimension are ***Honoring of Native Americans/ Indigenous Persons, Honoring of Enslaved People of Hunter Plantation, Honoring of Dix Mental Health Hospital, Natural Landscape, Engaging and Interactive Elements, Cultural Relevance, Partnership***, and ***Intercity Connectivity.***

Honoring of Native Americans/Indigenous Persons, Honoring of Enslaved People of Hunter Plantation, Honoring of Dix Mental Health Hospital

These indicator categories recognize that park space should not and cannot separate its history from its future. The indicators intend to capture proposed projects that acknowledged the deep history of the land, specifically, the history of Native Americans, the Hunter Plantation, and the Dix Mental Hospital. The metrics for the indicator categories are:

- Does the project/program intend to honor the history of Native American/Indigenous peoples?
- Does the project/program intend to honor the history of the enslaved people of Hunter Plantation?
- Does the project/program intend to honor the history of those previously involved with Dix Mental Hospital?

Natural Landscape

The natural landscape category recognizes that proposed projects should embrace and showcase the uniqueness of the land. Enhancing the land's natural landscape aligns with respecting the history and legacy of the land. The metric for this category is:

- Does the project have the potential to enhance the park's natural landscape?

Engaging & Interactive Elements

This category encourages proposed projects to have engaging and interactive elements that encourage participation. The metric for this indicator is:

- How much potential does the project have to include engaging and interactive elements?

Cultural Relevance

This indicator category recognizes that proposed projects should acknowledge the community in which they are situated. Projects that have external cultural relevance respect the legacy of the surrounding community. The metric for this category is:

- How much potential does the project have to be culturally relevant to the surrounding community?

Partnership

This indicator recognizes that parks should take the mission and values of potential partners into consideration. This category encourages proposed projects to contract with small businesses that center identities previously harmed on Dix Park land. These efforts support the legacy of the park as well as supporting the local economy. The metric for this indicator is:

- Does the project/program have the potential to partner with small businesses that are centered around previously harmed identities?

Intercity Connectivity

This indicator category encourages proposed projects to connect with other city assets and acknowledge the external legacy of Dix Park as an interconnected element of Raleigh. In general, parks should operate in ways that promote city unity. The metric for this category is:

- How much potential does the project/program have to encourage interactivity and connection between other existing city assets?

Example of Equity Scorecard Application

Example Proposal

To showcase and clarify specific elements of the Equity Indicator Scorecard, we have created an example proposal response to a potential Request for Proposals (RFP) for a Dorothea Dix Youth Development Program. The RFP included a request for the applicant organizations to submit three proposed classes or activities to serve as the initial elements to compose Dix's Youth Development Program. "Peppers" professional organization and "Dix's Youth Development Program" are fictional entities. A copy of the example proposal can also be found in **Appendix 3**.

City of Raleigh
Dorothea Dix Park Team
222 West Hargett Street
Suite 601
Raleigh, NC 27601
Atten: Dorothea Dix Park Team
RE: Dorothea Dix Park request for Dix's Youth Development Program
Dear Dorothea Dix Park Planning Team and Selection Committee

Peppers is pleased to present our proposal to serve to develop and host the Dix's Youth Development Program. From our previous work concerning youth development and interaction with adjacent public assets, such as North Carolina State University and Pullen Park, Peppers has a comprehensive and versatile understanding of the demands of a public park space. With this knowledge, we have developed a tripartite series of recurring activities and classes to comprise Dix's Youth Development Program.

Our small team is composed of experienced, impressive, and multidisciplinary individuals who understand the uniqueness of Dorothea Dix Park and its potential to become an innovative and defining landscape in Raleigh and North Carolina more broadly. Peppers has a notable and substantive working relationship with additional public parks such as Pullen (NC), Beach Garden Park (VA), and Maxcy Gregg Park (SC).

We are confident in our ability to provide successful and engaging classes and activities for Dorothea Dix Park through our ability to develop and implement public budget estimates, staff training and mentoring, community outreach planning, and final program execution.

We look forward to the potential opportunity to provide Peppers' expertise on youth development strategies to Dorothea Dix Park. For answers to any additional questions or concerns that you may have, please do not hesitate to contact Mark Park directly at (919)-555-5551 or via email at mark.park@peppers.com

Proposed Classes & Activities

Peppers' team of youth and curriculum development experts propose three classes that provide Raleigh youths' essential life skills. The following classes contain activities that contribute to the overarching themes of community gardening, trade skill-building, and self- and body-awareness and understanding. These classes' proposed timeline follows the Dorothea Dix RFP requirements of each class occurring each month from March to August of the calendar year. The classes will refresh with a new curriculum, provided to Dorothea Dix Park Team review ten business days before the 1st of each month by a member from Peppers' team. It is proposed that the course occur Monday, Wednesday, and Thursday, two hours a day. These classes are designed for participants to pay for and attended on a month to month basis, with no commitment for the entire six months. We propose that each course is allotted spaces for 30 youth participants.

Community Gardening

The Community Gardening development class will provide students with the skills necessary to participate in self-sustainable practices. Students will be led by gardening techniques for summer crops, outdoor cooking, bartering, selling, and nature familiarity. Potential partners for this class include mentors and volunteers from the nearby NC State's Agricultural Department and booth rental from the NC Farmers Market. The class is targeted for children aged 5 to 10. This location would be best hosted at Doretha Dix's Meadow field, where there is ample room to develop an outdoor community garden.

Trade Skills

The Trade Skills Development class will strive to provide each student with the foundational knowledge of trade and maker skills. Students will be guided through activities to develop their skill sets in woodworking and sewing. These courses are designed to be coed to ensure all youths can develop necessary life skills. Children will complete the class with new confidence in wood and fabric manipulation through power tools, hand tools, and sewing machines. The proposed age range for this class is children aged 7 to 10. This program would require the use of one of Doretha Dix's existing buildings and an update to the facilities in the building to support the skill-building activities.

Body & Self Awareness

The Body & Self Awareness development class will set out to allow youths to gain a greater understanding of their internal and external workings of their person. The course will develop strategies to better understand their emotions through group discussions, lessons, activities, and centering practices such as meditation. The class will also allow for physical activities to maintain physical well-being and aid youth in being more comfortable and confident in their bodies' physical abilities. Physical activities include yoga, dance, walking, and no-contact group sports. This course's proposed age ranges are 5 to 6, 7 to 8, and 9 to 10, to accommodate youth development. It is recommended that these activities occur in various fields across Dorothea Dix Park and current paved sidewalks and pathways.

Program Pricing

Proposed pricing for each month of class is derived from the cost of materials, staff, and public funding from the city budget. The pricing allows for flexibility based on the status of the participant's city residency and economic standing to allow for inclusive participation. Participants who qualify for free and reduced lunch at their schools may be eligible for the reduced monthly costs. Youths that come from extremely low-income houses decided at Dix Park's discretion, are proposed to receive a free voucher funded by public budget, grants, and sponsors.

Dix's Youth Development Program Pricing				
Class	City of Raleigh Resident	Non-Resident	Qualifying Free and Reduced Lunch Application	Extremely Low Income
Community Gardening	$125	$200	$50	Voucher Available
Trade Skills	$200	$275	$75	Voucher Available
Body + Self Awareness	$75	$125	$25	Voucher Available

Public & Stakeholder Engagement

Peppers leads and creates with a team of experts in community engagement to assure fair representation and input from all community members and stakeholders. Peppers will develop an inclusive and tailored public engagement approach for Dix's Youth Development program. Our team has extensive experience in facilitating and participating in public engagement strategies to assure that all voices have the opportunity to participate in programs directly impacting the local youth.

Peppers' community engagement experts will implement an initial engagement to collect feedback from the surrounding community regarding the currently proposed courses. The feedback will influence minor changes to the program to increase community acceptance and participation. The communities of Raleigh will have additional input in future program development through surveys conducted by Peppers. Feedback from previous, current program participants and households with children in the 5 to 10 age range will be prioritized in feedback collection and analysis. Participants will be engaged through three phases to tailor classes unique to Dorothea Dix.

Phase 1

Physical survey with preliminary new class themes and activities will be sent out to households near Dix. An online survey will be available via the Dorothea Dix Park webpage and social media accounts. Current participants will also be solicited for classes of interest.

Phase 2

After the Dix Park Team review, the most popular courses from survey results will be re-presented to the public. Additional comments and feedback will be collected in a method similar to Phase 1.

Phase 3

Final classes and activities will be drafted; details will be presented to the public after another review from the Dorothea Dix Park team. Interested community members and stakeholders will have the opportunity to attend a virtual engagement event, review a demo of the proposed activities, and give final feedback.

The outreach results will be used to curate the next three programs for Dix's Youth Development Program.

Program Leadership & Staff

Peppers will execute its expert staff to train and develop positions required for the Dix's Youth Development programs' day-to-day operations. Our staff's background contributes to their effectiveness in developing and preparing staff in activity facilitation for community betterment and youth development. We are proposing that Dorothea Dix Park hire fifteen staff members to be trained by our mentors' team.

Twelve of the staff will be "Youth Leaders" to work one on one with the participants. Peppers has deemed successful classes as those that follow the child-teacher ratio of one Leader to ten children with rotating staff.

Youth Leader roles would best be filled with young adults between the ages of 16 to 21 and are preferably members of the surrounding neighborhoods and have a stake in their communities. We propose an hourly pay rate for this part-time position of $9/hr.

We also propose that Dix Park hires a Program Director to oversee all daily operations of the program with experience in youth development and parks and recreation. Peppers recommends that the applicant has lived in the Raleigh area and is familiar with the city and nearby communities. The Program Director will also be trained in class facilitation for the program. We propose an hourly pay rate for this full-time position of $25/hr.

We want to emphasize the importance of having leadership levels in all youth programs to ensure that daily operations are performed without interruption. Peppers proposes that Dorothea Dix employ two Program Director Assistants to answer the Youth Leaders' questions and concerns directly. We propose a pay rate for the part-time position of $15/hr.

Example Proposal Evaluation

Previously stated in the instructions, it is recommended that the Equity Indicator Scorecard is implemented with multiple scores from independent, individual evaluations from the Dix Park Team. Each proposal should be scored using the indicator by at least two different Dix Park team members to address the issues of potentially subjective measures, personal bias, and variations in interpretation of the project proposal content. Differences in scores should be discussed by the team and final scores for projects should be derived from averages for score differences or consensus agreement. This example indicator matrix application will feature only one individual evaluation.

Please note that these are not complete indicator elements as found in the official Equity Indicator Scorecard. Due to the amended proposal, this example is intended only to clarify and showcase specific elements of matrix. When using the official scorecard, allocate scores for all indicators and metrics.

Accessibility

In the Peppers' proposal, implications on potential accessibility can be found in the following quotation:

> "This location would be best hosted at Doretha Dix's Meadow field, where there is ample room to develop an outdoor community garden."

Dix Park would have to reflect on the accessibility to the field as it applies to individuals of varying ability. The following metric applies to the purpose of the proposal:

Walking:

- Is the proposed project in proximity to existing facilities that support walking (sidewalks, mixed used paths, etc)?
- Does the project proposal include facilities that will support walking (sidewalks, mixed used, etc.) For this indicator, the proposal would score based on the current conditions of Dorothea Dix Park. The proposal would receive a medium score for both metrics.

Affordability

The example proposal featured elements of the potential project related to affordability and can be found in the following quotation under the "Proposal Pricing" subheading:

"The pricing allows for flexibility based on the status of the participant's city residency and economic standing to allow for inclusive participation. Participants who qualify for free and reduced lunch at their schools may be eligible for the reduced monthly costs. Youths that come from extremely low-income houses decided at Dix Park's discretion, are proposed to receive a free voucher funded by public budget, grants, and sponsors."

Cost

- Does the program intend to require participants to pay a fee?

  Yes. Participants are required to pay a monthly fee to participate in the classes.

Cost Support

- Does the program intend to determine cost on a sliding scale?

  Yes. The proposal suggests the park implement pricing based on income.

- Does the program intend to offer scholarships or other financial assistance opportunities?

  No. The proposal does not mention the potential for scholarship assistance for participants.

- Does the program include plans for alternative internal park payment structures such as vouchers?

  Yes. The proposal includes plans for vouchers based on participant household income.

- Does the program proposal include alternative funding opportunities (e.g. grants) that could mitigate cost for participants?

  Yes. The proposal proposes funding for "free vouchers" be mitigated through sponsorship or grants.

The amended example proposal does not include identified sponsors or grant, but rather suggests that the classes can and should be implemented in a way that allows for community members - regardless of financial means - to have equal access to park programming. Complete proposals will contain additional details for further evaluation by the Dix Park team.

Engagement

Under the "Public Engagement and Stakeholders" heading of the Peppers' proposal, the firm details its engagement measures and target populations. For this example, it will be scored against the following Engagement indicators and metrics:

Local Businesses

- What type(s) of meetings does the proposing party plan to conduct?

  None. The program proposal did not include any engagement directed towards local businesses.

Residents

- How did/does the proposing party intend to involve current community residents in the decision making process?

  Participatory Planning. The program proposal included engagement events for residents that allowed for participation and feedback.

Youths

- Did/does the proposal indicate an intention to involve those under 18 years old in the decision making process?

  Yes. Peppers' proposal mentions soliciting feedback from current youth participants.

BIPOC

- How did/does the proposing party engage with BIPOC?

  N/A. The proposal states that BIPOC will be targeted in public engagement efforts.

Environment

The example proposal does not make a clear indication of potential effects on the environment that may occur with implementation. Depending on Dix's evaluation of proposed classes, the park may choose to apply the lowest weight of 1 to the Environment indicator under the "Total Equity Score" table of the scorecard.

Economic Opportunity

The example proposal featured elements of the potential project related to Economic Opportunity, primarily under the "Program Leadership and Staff" heading:

Contracting and Procurement

- What percentage of contractors are/will be women- and/or persons-of-color-owned businesses?
- What percentage of contractors/partners are will be locally-owned businesses?

0%. The amended proposal does not explicitly state the gender and race makeup of the applicant firm. A complete proposal will include more details on such characteristics.

Workforce Development

- Does this project/program create temporary employment opportunities?

Yes. Peppers' proposal features temporary part-time employment opportunities.

- What is the expected mean hourly wages for jobs created through this project?

Equal to Living Wage. The example proposal highlights three different hourly wage possibilities depending on experience and age of the individuals fulfilling the positions. Positions intended for older, independent individuals will earn above the minimum wage.

- Does this project create volunteer opportunities?

Yes. Peppers' proposal does mention potential volunteer opportunities from students of the nearby University under the "Community Garden" subheading.

- What is the number of volunteer hours generated by the project/initiative?

0. The proposal does not specify the number of potential volunteer hours to be generated.

Health

Peppers' example proposal features elements related to the Health indicator under the "Proposed Class and Activities" heading in the class descriptions:

- Does this project/program intend to promote physical activity?
- Does this project/program intend to positively affect mental/emotional health?

For this proposal, both metrics would earn a score of **5**. Peppers' proposal does intend to offer a youth class dedicated towards both physical and emotional

Programming

As it relates to programming, the example proposal addresses metrics of the Programming indicator. An example metric for programming is as follows:

- Does the proposed program target a subpopulation of interest?

Yes. The example proposal does target a subpopulation of youth in the area.

Legacy

Lastly, the following Legacy metrics were applied to the example proposal for additional clarification:

- How much potential does the project/program have to be culturally relevant to the surrounding community?

  Does not have clear intention. The example proposal does target existing youth in the area, but otherwise is lacking in potential cultural and demographic relevance.

- How much potential does the project/program have to encourage interactivity and connection between other existing city assets?

  Clear potential. Peppers proposal does suggest that potential partnerships can be made with the NC State Farmers Market and NC State University Agricultural Department.

When completing the scorecard, type in the scores that align with the determinants with reference to the instructions for additional clarification. Upon completion of the Equity Scorecard, the spreadsheet will automatically calculate the project's final scores based on assigned weights and values of the indicators and metrics.

Limitations

There are several limitations for the development and use of the equity scorecard that are important to acknowledge.

1. **Indicators were made for a wide range of proposals**: This scorecard can be used for a wide range of proposals, from infrastructure projects to specific programming, so the team attempted to make the indicators as all-encompassing as possible. However, this also means that some specificity is lost and not all indicators will be relevant to every proposal.

2. **Lack of existing conditions data**: Developing indicators and creating specific scoring criteria were limited due to not having existing conditions data, such as knowing the current quality of infrastructure in order to give specific impact measures for scoring an environment or accessibility indicator.

3. **Scoring criteria can be subjective and dependenton project**: Many indicators lent themselves to subjective and sometimes binary scoring criteria. This is less precise than objective, value-based scoring but makes the equity scorecard more functional for a wide range of proposals. In order to make more precise scoring criteria, the scoring values may depend on the project. For example, a 1-acre project and an 80-acre project will have different standards for how much walking and biking infrastructure is planned.

4. **A proposal is not a binding commitment**: The scores calculated from the equity scorecard are based on proposals provided to Dix Park staff. Proposals are early on in the process of a project and do not signify a binding commitment to follow through on all aspects presented. Evaluating projects this early and basing the scoring off the proposals may miss unintended consequences that may arise during or after the implementation of the project or program.

Recommendations

The project team offers the following recommendations to make the equity scorecard as useful as possible for the Dix Park staff and community.

1. **Continue existing conditions evaluation**: In order to make scoring criteria reflect specific impacts, it will be important to know the existing conditions to judge against. Once more of these baseline numbers are known, scoring can be made more specific.

2. **Adapt indicators for different projects**: Since this scorecard can be used for a wide variety of proposals, it should be adapted to only include relevant indicators for each proposal. This can mean either including additional indicators or weighting other indicators "zero" to exclude them. Since the scorecard is used between certain proposals for one specific project or program, continuity of indicators between different projects or programs is not an issue. Additionally, many of the current indicators could not be labeled as "internal" or "external." However, if that distinction is useful to Dix Park staff or if the indicators change, that distinction could be added to the equity scorecard.

3. **Involve the community in choosing indicators**: It is imperative to involve the community to determine what they see as priorities within each equity dimension. The project team views this equity scorecard as a starting point for discussion with the community and expects the scorecard to evolve based on community feedback and specific project or program needs.

4. **Utilize scorecard as an exclusion tool, not for selection**: This scorecard should be one of multiple tools to evaluate proposals for a specific project or program. The equity scorecard should be used as an early tool to exclude proposals that do not meet Dix Park's equity considerations. While the scorecard can be considered in the selection of a proposal, there should be a more holistic review process.

Conclusion

The equity scorecard is a decision-making tool that we hope will assist the staff of Dix Park and the Raleigh Parks and Recreation Department in their pursuit of an equitable park. As presented in this report, it can be used to evaluate the various indicators and aims to make it easier to select projects. However, it is important to reiterate the limitations going forward. While the criteria are numerical and based on quantitative data, most of the numbers are subjective. As such, staff may need to adjust numbers for certain projects. The way the scorecard is built makes this easy to do, ensuring that this tool can be used into the future.

Further, the Equity Scorecard is only one decision-making tool Dix Park staff have at their disposal. This tool complements community engagement efforts, other departmental analyses, and feedback from other stakeholders. Therefore, while this tool emphasizes a quantitative approach to data-based decision making, it does not intend to minimize the importance of qualitative data. Therefore, this tool is intended to be one component of a comprehensive process.

This project has provided the project team with a rewarding experience: the opportunity to contribute to the future of equity planning for Dorothea Dix Park. The project team would like to acknowledge and thank Nick Smith and Kate Pearce with the City of Raleigh for their engagement and feedback throughout this semester-long process, as well as the numerous guest speakers who shared their expertise to help inform the final product.

Appendix 1

Scorecard Evaluation Instructions

Note that if a team is evaluating proposals, each of these steps should be completed by each team member in isolation. This will avoid "group think" and allow team members to validate and cross-check each other's work.

1. Collect all proposals being evaluated. It is best to evaluate all proposals together.
2. Always begin each evaluation with a new blank template scorecard. Every time a new evaluation is conducted, save a new copy of the scorecard to begin working.
3. Confirm that the scores which correspond to each possible answer are applicable to the scope and scale of potential projects.

    - Not all sections and metrics will apply to the scope of potential projects, and may not be necessary to score
    - If you would like to leave metrics blank (not applicable to project), fill in with a "[x]"
    - Evaluators can also adjust score values based on the scope and scale of the proposed projects.

4. Assign weights to each of the eight dimensions of equity.

    - Evaluators may assign weights evenly across the 8 dimensions, or adjust to prioritize dimensions of particular importance

5. Assign weights to each indicator within each dimension of equity.

    - Indicators within the 8 dimension tabs can also be evaluated evenly or prioritized depending on the assigned weight.

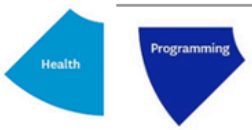
6. For each proposal, assess the indicators for each dimension by answering the metric questions. The scorecard should automatically calculate scores.*
7. If multiple team members conducted an evaluation (completed Steps 3-6), reconvene as a group to identify and resolve conflicts in scores, measurements (answers), or weights.
8. Use the final scores to assist in proposal selection. If they identify gaps in the "best" proposal, they may also be used to make changes to the proposal or project scope.

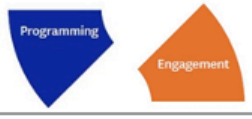
*A list of indicator categories and metrics can be found on the "Summary of Indicators" page of the

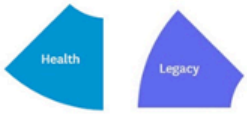
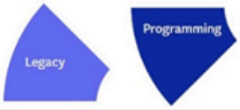
(continued on next page)

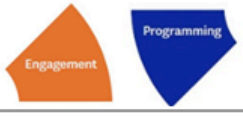
Appendix 2

Equity Scorecard Metrics and Equity Dimension Overlap

Equity Dimension	Metrics	Connection to Other Equity Dimensions
Accessibility	Is there a transit stop within [x] miles of the proposed project?	
	Is the proposed project in proximity to existing facilities that support walking (sidewalks, mixed-used paths, etc.)?	
	Does the project proposal include facilities that will support walking (sidewalks, mixed used, etc.)	
	Is the proposed project in proximity to existing facilities that support biking (bike lanes, mixed used paths, etc.)?	
	Does the project proposal include facilities that will support biking (bike lanes, mixed used paths, etc.)?	
	Is the proposed project in proximity to existing bicycle parking?	
	Does the project proposal include bicycle parking?	
	Is the proposed project in proximity to existing vehicle parking?	
	Does the project proposal include vehicle parking?	
	Does the proposed project involve a park-specific transportation cost (either for the specific program or the park generally)?	
	Does the proposed project connect with accessible transportation for those with disabilities?	
	Does the project proposal increase connectivity to the existing transportation network inside the park?	
	Does the project proposal increase connectivity to the existing transportation network outside the park?	
	Is the project within [x] distance to key destinations or amenities, or [x] percentage of key destinations and amenities?	
	Does the project proposal include multiple points of entry from within the park?	
	Does the project include wayfinding signage?	
	Does the project include features in the appropriate languages for the resident population?	

	Does the project proposal include design features that meet the needs of those with disabilities?	
Affordability	Does the program intend to require participants to pay a fee?	
	Does the program proposal discuss/consider affordability for visitors/users?	
	Does the program intend to determine cost on a sliding scale?	
	Does the program intend to offer scholarships or other financial assistance opportunities?	
	Does the program include plans for alternative internal park payment structures such as vouchers?	
	Does the program proposal include alternative funding opportunities (grants) that could mitigate cost for participants?	
	Does the proposed program intend to accept multiple forms of payment (cash, checks, credit card, phone apps (e.g. Venmo, PayPal)?	
	Does the proposed program intend to accept food stamps/WIC?	
	Does the proposed program include payment in the form of volunteer hours?	
Engagement	What type(s) of meetings does the proposing party plan to conduct?	
	How many surveys will the proposing party collect?	
	How did/does the proposing party intend to involve current community residents in the decision-making process?	
	Did/does the proposal indicate an intention to involve those under 18 years old in the decision-making process?	
	Did/does the proposal indicate an intention to involve those over 65 years old in the decision-making process?	
	How did/does the proposing party engage with BIPOC?	
	Will the volume of stormwater discharged by the project be reduced beyond regulatory requirements?	

Environment	Will the flow rate of stormwater discharged by the project be reduced beyond regulatory requirements?	
	Does the proposal include any non-low-flow fixtures?	
	Does the proposal include a plan for recycling?	
	Does the proposal include a plan for composting?	
	Does the proposal include an energy conservation plan?	
	Does the proposal indicate that any non-native plants be used?	
	Does the proposal include considerations of urban heat island and/or thermal comfort of users?	
Economic Opportunity	What percentage of contractors are/will be women- and/or persons-of-color-owned businesses?	
	What percentage of contractors/partners are/will be locally-owned businesses?	
	Does this project/program create temporary employment opportunities?	
	What is the expected mean hourly wage for jobs created through this project?	
	Does this project create volunteer opportunities?	
	What is the number of volunteer hours generated by the project/initiative?	
	What is the ratio of outside funds to municipal funds for the project/program?	
	Does this project/program generate marketing and/or revenue opportunities for local businesses?	
Health	Does this project/program intend to promote physical activity?	
	Does this project/program intend to positively affect mental/emotional health?	
	Does this project/program intend to promote social connectedness?	
	Does this project/program intend to promote spiritual health and wellness?	

Programming	What percentage of proposed program space is reasonably expected to be accessible outside 9-5 hours?	
	Is the program space expected to be accessible on weekends (Sat-Sun)?	
	Is the program space expected to be accessible on weekdays?	
	Does the proposed program fulfill an expressed interest from the community?	
	Does the proposal center community members in the development of program space design?	
	Will diverse artists be engaged to develop park spaces?	
	Will community members involved in designing park elements be meaningfully compensated?	
	Will the proposed program space/resources be available for informal/unsupervised use?	
	Does the program meaningfully incorporate existing community programs of similar type (where those exist)?	
	Does the proposed program target a subpopulation of interest?	
Legacy	Does the project/program intend to honor the history of Native American/Indigenous peoples?	
	Does the project/program intend to honor the history of the enslaved people of Hunter Plantation?	
	Does the project/program intend to honor the history of those previously involved with Dix Mental Hospital?	
	Does the project have the potential to enhance the park's natural landscape?	
	How much potential does the project have to include engaging and interactive elements?	
	How much potential does the project have to be culturally relevant to the surrounding community?	
	Does the project/program have the potential to partner with small businesses that are centered around previously harmed identities?	
	How much potential does the project/program have to encourage interactivity and connection between other existing city assets?	

Appendix 3

Example Proposal

To showcase and clarify specific elements of the Equity Indicator Scorecard, we have generated an amended example proposal response to a potential Request for Proposals (RFP) for a Dorothea Dix Youth Development Program. The RFP included a request for the applicant organizations to submit three proposed classes or activities to serve as the initial elements to compose Dix's Youth Development Program. "Peppers" professional organization and "Dix's Youth Development Program" are mock entities.

City of Raleigh
Dorothea Dix Park Team
222 West Hargett Street
Suite 601
Raleigh, NC 27601
Atten: Dorothea Dix Park Team
RE: Dorothea Dix Park request for Dix's Youth Development Program
Dear Dorothea Dix Park Planning Team and Selection Committee

Peppers is pleased to present our proposal to serve to develop and host the Dix's Youth Development Program. From our previous work concerning youth development and interaction with adjacent public assets, such as North Carolina State University and Pullen Park, Peppers has a comprehensive and versatile understanding of the demands of a public park space. With this knowledge, we have developed a tripartite series of recurring activities and classes to comprise Dix's Youth Development Program.

Our small team is composed of experienced, impressive, and multidisciplinary individuals who understand the uniqueness of Dorothea Dix Park and its potential to become an innovative and defining landscape in Raleigh and North Carolina more broadly. Peppers has a notable and substantive working relationship with additional public parks such as Pullen (NC), Beach Garden Park (VA), and Maxcy Gregg Park (SC).

We are confident in our ability to provide successful and engaging classes and activities for Dorothea Dix Park through our ability to develop and implement public budget estimates, staff training and mentoring, community outreach planning, and final program execution.

We look forward to the potential opportunity to provide Peppers' expertise on youth development strategies to Dorothea Dix Park. For answers to any additional questions or concerns that you may have, please do not hesitate to contact Mark Park directly at (919)-555-5551 or via email at mark.park@peppers.com

Proposed Classes & Activities

Peppers' team of youth and curriculum development experts propose three classes that provide Raleigh youths' essential life skills. The following classes contain activities that contribute to the overarching themes of community gardening, trade skill-building, and self- and body-awareness and understanding. These classes' proposed timeline follows the Dorothea Dix RFP requirements of each class occurring each month from March to August of the calendar year. The classes will refresh with a new curriculum, provided to Dorothea Dix Park Team review ten business days before the 1st of each month by a member from Peppers' team. It is proposed that the course occur Monday, Wednesday, and Thursday, two hours a day. These classes are designed for participants to pay for and attended on a month to month basis, with no commitment for the entire six months. We propose that each course is allotted spaces for 30 youth participants.

Community Gardening

The Community Gardening development class will provide students with the skills necessary to participate in self-sustainable practices. Students will be led by gardening techniques for summer crops, outdoor cooking, bartering, selling, and nature familiarity. Potential partners for this class include mentors and volunteers from the nearby NC State's Agricultural Department and booth rental from the NC Farmers Market. The class is targeted for children aged 5 to 10. This location would be best hosted at Doretha Dix's Meadow field, where there is ample room to develop an outdoor community garden.

Trade Skills

The Trade Skills Development class will strive to provide each student with the foundational knowledge of trade and maker skills. Students will be guided through activities to develop their skill sets in woodworking and sewing. These courses are designed to be coed to ensure all youths can develop necessary life skills. Children will complete the class with new confidence in wood and fabric manipulation through power tools, hand tools, and sewing machines. The proposed age range for this class is children aged 7 to 10. This program would require the use of one of Doretha Dix's existing buildings and an update to the facilities in the building to support the skill-building activities.

Body & Self Awareness

The Body & Self Awareness development class will set out to allow youths to gain a greater understanding of their internal and external workings of their person. The course will develop strategies to better understand their emotions through group discussions, lessons, activities, and centering practices such as meditation. The class will also allow for physical activities to maintain physical well-being and aid youth in being more comfortable and confident in their bodies' physical abilities. Physical activities include yoga, dance, walking, and no-contact group sports. This course's proposed age ranges are 5 to 6, 7 to 8, and 9 to 10, to accommodate youth development. It is recommended that these activities occur in various fields across Dorothea Dix Park and current paved sidewalks and pathways.

Program Pricing

Proposed pricing for each month of class is derived from the cost of materials, staff, and public funding from the city budget. The pricing allows for flexibility based on the status of the participant's city residency and economic standing to allow for inclusive participation. Participants who qualify for free and reduced lunch at their schools may be eligible for the reduced monthly costs. Youths that come from extremely low-income houses decided at Dix Park's discretion, are proposed to receive a free voucher funded by public budget, grants, and sponsors.

Dix's Youth Development Program Pricing				
Class	City of Raleigh Resident	Non-Resident	Qualifying Free and Reduced Lunch Application	Extremely Low Income
Community Gardening	$125	$200	$50	Voucher Available
Trade Skills	$200	$275	$75	Voucher Available
Body + Self Awareness	$75	$125	$25	Voucher Available

Public & Stakeholder Engagement

Peppers leads and creates with a team of experts in community engagement to assure fair representation and input from all community members and stakeholders. Peppers will develop an inclusive and tailored public engagement approach for Dix's Youth Development program. Our team has extensive experience in facilitating and participating in public engagement strategies to assure that all voices have the opportunity to participate in programs directly impacting the local youth.

Peppers' community engagement experts will implement an initial engagement to collect feedback from the surrounding community regarding the currently proposed courses. The feedback will influence minor changes to the program to increase community acceptance and participation. The communities of Raleigh will have additional input in future program development through surveys conducted by Peppers. Feedback from previous, current program participants and households with children in the 5 to 10 age range will be prioritized in feedback collection and analysis. Participants will be engaged through three phases to tailor classes unique to Dorothea Dix.

Phase 1

Physical survey with preliminary new class themes and activities will be sent out to households near Dix. An online survey will be available via the Dorothea Dix Park webpage and social media accounts. Current participants will also be solicited for classes of interest.

Phase 2

After the Dix Park Team review, the most popular courses from survey results will be re-presented to the public. Additional comments and feedback will be collected in a method similar to Phase 1.

Phase 3

Final classes and activities will be drafted; details will be presented to the public after another review from the Dorothea Dix Park team. Interested community members and stakeholders will have the opportunity to attend a virtual engagement event, review a demo of the proposed activities, and give final feedback.

The outreach results will be used to curate the next three programs for Dix's Youth Development Program.

Program Leadership & Staff

Peppers will execute its expert staff to train and develop positions required for the Dix's Youth Development programs' day-to-day operations. Our staff's background contributes to their effectiveness in developing and preparing staff in activity facilitation for community betterment and youth development. We are proposing that Dorothea Dix Park hire fifteen staff members to be trained by our mentors' team.

Twelve of the staff will be "Youth Leaders" to work one on one with the participants. Peppers has deemed successful classes as those that follow the child-teacher ratio of one Leader to ten children with rotating staff.

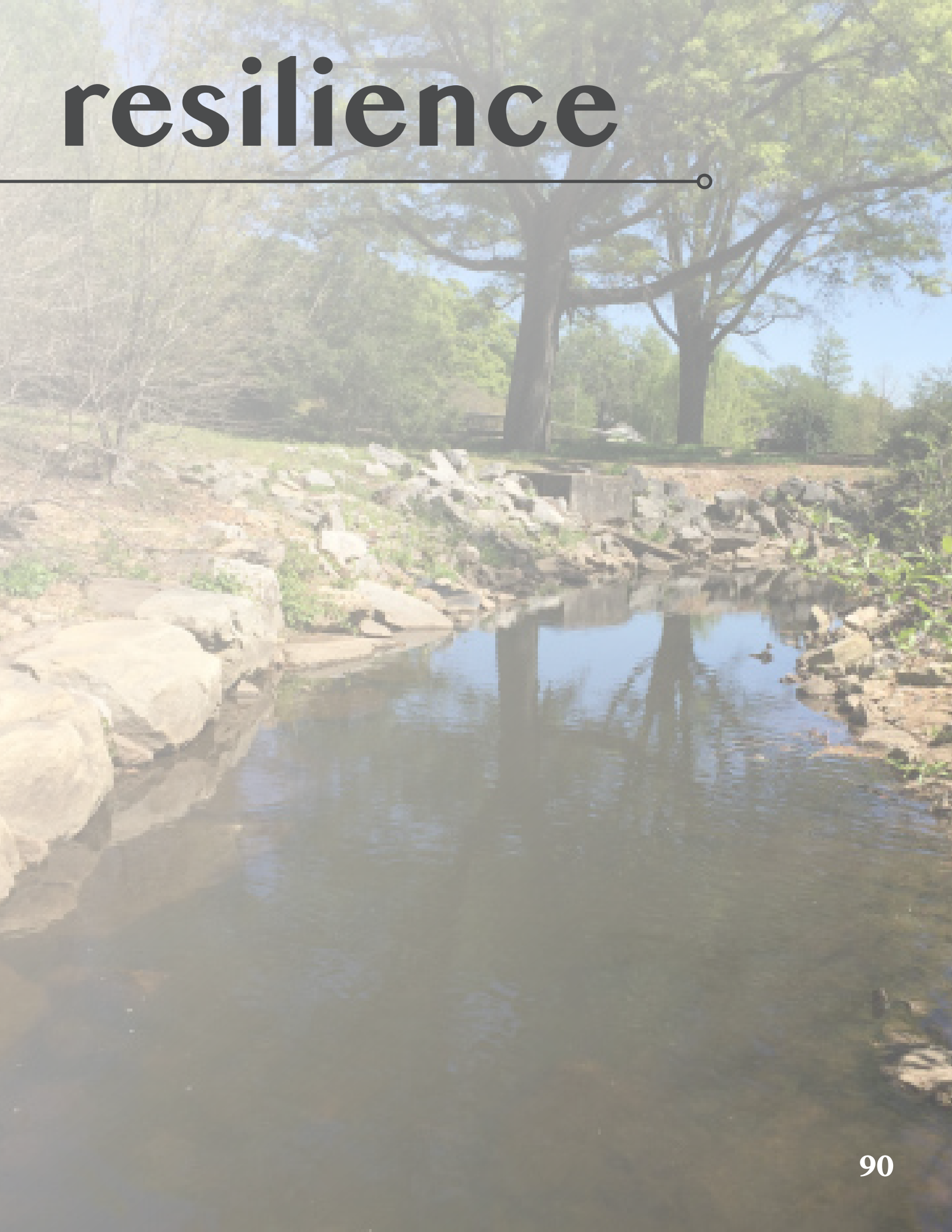
Youth Leader roles would best be filled with young adults between the ages of 16 to 21 and are preferably members of the surrounding neighborhoods and have a stake in their communities. We propose an hourly pay rate for this part-time position of $9/hr.

We also propose that Dix Park hires a Program Director to oversee all daily operations of the program with experience in youth development and parks and recreation. Peppers recommends that the applicant has lived in the Raleigh area and is familiar with the city and nearby communities. The Program Director will also be trained in class facilitation for the program. We propose an hourly pay rate for this full-time position of $25/hr.

We want to emphasize the importance of having leadership levels in all youth programs to ensure that daily operations are performed without interruption. Peppers proposes that Dorothea Dix employ two Program Director Assistants to answer the Youth Leaders' questions and concerns directly. We propose a pay rate for the part-time position of $15/hr.

(continued on next page)

resilience



Project Team

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Resilience
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Executive Summary

Intoduction & Case Studies

Resilience is an important concept for the City of Raleigh and Dorothea Dix Park, as it is referenced specifically in key actions of the Park's Master Plan and more generally in the City's Comprehensive Plan. Urban parks and natural areas play a critical role in supporting both ecosystem and social functions required for our daily lives, and the development of Dorothea Dix Park has the potential to improve the ability of Raleigh's residents to withstand the impacts of climate change.

The goal of this project is to develop a tool and methodology for assessing the contributions of individual projects within Dorothea Dix Park to broader resilience goals.

This report first outlines some of the benefits and challenges of developing resilience through urban parks, paying specific attention to the circumstances of Dix Park and the Rocky Branch Creek Restoration.

Next, key takeaways from two case studies of other recent park development projects that prioritize climate resilience are discussed. Specifically, these case studies emphasized:

1. developing a resilience framework to guide project decision-making processes;
2. integrating biophilic and ecosystem services principles into project design;
3. prioritizing environmental justice and equity; and
4. investment in technical focus and expertise as well as connection with city-wide resilience efforts. These case studies informed the development of the Resilience Assessment Tool for Dix Park.

Resilience Assessment Tool

The Resilience Assessment Tool is intended for use at multiple phases of project development, reflecting the degree of uncertainty at each phase. During the concept phase, the tool helps park staff and project designers to think about how the project will contribute or detract from broadly defined concepts of resilience. These concepts are laid out for three primary hazards affecting the City of Raleigh: extreme heat, extreme precipitation, and drought. While each hazard affects infrastructure, residents, and the environment in different ways, all are exacerbated by climate change.

The Design Phase section of the tool provides resources for park staff to consider how the incorporation of specific elements or practices contribute to water usage, carbon sequestration, and stormwater management. The tool also encourages the integration of park projects into community resilience efforts through educational programming. The Design Phase tool may be applied after project implementation for the purpose of project verification.

Finally, this report includes a pilot application of the Concept Phase section of the tool for the Rocky Branch Creek Restoration. At this point in project development,

Recommendations

The initial assessment indicates that the project has the potential for significant resilience benefits related to all three primary hazards. This knowledge should inform the park staff's actions going forward and underscore the importance of incorporating best practices. As one of the first major projects at Dix Park, the Creek Restoration will showcase the Park's commitment to environmental and community benefits. Prioritizing resilience in the Creek Restoration project will set the tone for future investment in both Dix Park and across Raleigh.

Introduction & Project Purpose

As climate change increases the frequency and severity of hazardous weather events, Dorothea Dix Park has the opportunity to promote resilience within the city of Raleigh. The Triangle Regional Resilience Assessment defines resilience as "planning and investing today for a better future".[98] The purpose of this project is to develop a resilience assessment tool that can be applied to Dorothea Dix Park projects. This tool can be applied during the concept phase and the design phase to identify opportunities for incorporating resilience measures into projects and assessing measures of resilience after project completion.

Literature Review

The project team reviewed additional literature to inform the development of the Resilience Assessment Tool.

Landfill

Building a park on a landfill creates additional challenges. Concerns that plantings on landfills will puncture the cap with their roots are largely seen to be unfounded by scientific studies. However, the survival of certain species such as oaks may be impaired due to reduced ectomycorrhizal infection.[99] A two foot soil cover can prevent landfill exposure, but monitoring for landfill gas, groundwater infiltration, contaminated sediments and signage where necessary can lessen the risk.[100]

Biodiversity

In restoring Rocky Branch Creek, the city of Raleigh is emphasizing restoring a natural ecosystem. Looking to nature (i.e. biophilic design) is crucial for creating a resilient park. A resilient and sustainable park is one that is able to persist with minimal human interference. Several factors play a supportive role in this, including the combinations of plants that are planted together. Extant plant communities that have survived human development and variable floodplains are likely quite resilient and can provide a template for sustainable plantings.[101] Seed dispersal is key to natural reforestation, and a high ratio of trees to shrubs can increase avian attraction.[102] There is a 63% overlap between streams with high biodiversity and those that scored above-average for their resilience characteristics.[103] Native ecosystems provide carbon sequestration, seed dispersal, erosion prevention, water purification, air purification and habitat quality.[104]

The urban heat island, stormwater from more intense storms, and drought will continue to be major issues for the city of Raleigh going forward. This makes low water requirements for plants and high leaf indices (enhancing shade potential) good secondary metrics for species selection.[105] Wind speed, shade, and rivers are key to cooling urban areas, with shading being the most important factor in sunny cities.[106] Trees play a major role by providing shade, and should be selected partially based on shade potential.

Flooding / Rivers

Wetlands are key to preventing flooding while also providing many other ecological benefits. Enhanced wetlands also include forebay areas to capture sediment. Reservoirs and swales can store and clean water before it enters the groundwater.[107]

Takeaways from Case Studies

Case studies of the South Platte River (Denver, CO) and Battery Park City Resilience Action Plan (New York, NY) provide insights into opportunities for Dorothea Dix Park. The Battery Park City Resilience Action Plan utilizes New York's Climate Resiliency Guidelines and Waterfront Edge Design Guidelines, which contain both assessment methodologies and design criteria.[108] The South Platte River project plan has four primary goals:

1. protect greenspace, bicycle and pedestrian facilities, and major landmarks from flooding and urban heat island effects;
2. explore national best practices and rating systems for landscape design and maintenance;
3. integrate Equity Indicators to greenspace design and creek restoration; and
4. implement aspects of the Climate Action Plan.[109]

From these case studies, the project team identified four main takeaways: first, the importance of developing a resilience framework to guide project decision-making processes; second, integrating biophilic and ecosystem services principles into project design; third, prioritizing environmental justice and equity, including greenspace design and creek restoration; and fourth, investment in technical focus and expertise as well as connection with city-wide resilience efforts. These guidelines established the foundation for this report's ***Resilience Evaluation Tool***.

Developing a Resilience Framework

Integrating urban resilience into Dorothea Dix Park during an era of uncertainty around climate change requires a clear framework. A framework provides a comprehensive approach to resilience, which may help to guide Dix Park in identifying connections to resilience throughout the Park. Critically, the Park's stakeholders should determine which of the resilience principles are priorities, using these to drive future action.

The resilience assessment process from the NYC Office of Resiliency for the Battery Park case study identified the importance of robust design guidelines and locally-specific criteria for effective implementation of resilience measures. Adapting requirements to a local context will vary based on the design guidelines or criteria, as well as the size of the project. A lower threshold may be appropriate given the scale of the park, or, depending on the resources available to conduct a detailed risk assessment, a higher threshold can be chosen. With respect to the landscape and construction guidelines, best practices that focus on riverine restoration and the Raleigh topography are likely most appropriate.

Biophilic Design & Ecosystem Service

Biophilic design directly integrates nature and natural elements into infrastructure, landscaping, and architecture of the urban environment. There is a strong body of literature to support the benefits of biophilic cities to its residents and the overall environment.[110] The South Platte River project emphasizes biophilic design in order to prioritize ecosystem services, mitigate urban heat and flooding, and improve the livability of the site and surrounding area, all of which are integrated into the Dorothea Dix Resilience Tool. As such, the tool calls for using national best practices for landscape design and maintenance, such as the use of native plants, a rating system for decision-making, and planning integration with city-wide water use goals. Strategies include severely restricting non-native species, xeriscaping (landscaping designed with reduced irrigation needs), and providing a variety of landscape experiences. Additional takeaways from the case study include the value of integrating biophilic infrastructure in place of traditional physical infrastructure to utilize green infrastructure design principles. Biophilic or biomimicking infrastructure could be achieved through treating stormwater onsite through natural processes or focusing on a net zero or net positive approach for stormwater impacts to the South Platte River.

Environmental Justice & Equity

Lack of tree canopy and access to green space contributes to poor air quality, higher surface temperatures, heat island effects, stormwater runoff, and flooding.[111] All of these adverse impacts influence the wellbeing of neighborhood residents surrounding the site and will be exacerbated by climate change.[112] Both built and natural environments can influence these outcomes and are closely tied to environmental justice and equity. The previously discussed infrastructure improvements and biophilic design focus are closely interconnected with environmental justice and equity for urban areas and should remain a cross-cutting theme for all elements of the project implementation.

The Equity Indicators as well as the resiliency-focused built environment characteristics and biophilic infrastructure can provide a better understanding of the institutionalized inequality of the site and surrounding area. Resilience and livability of the urban environment should be integrated with equity indicators in order to best understand how Dorothea Dix can reduce disparities and combat environmental injustice within Raleigh and Wake County.

Technical Focus

Finally, the South Platte River project and the Battery Park project emphasize a technical focus on the urban water management system. Drainage, wastewater management, and stormwater mitigation are prioritized in these projects in order to reduce impacts on the river and surrounding neighborhoods. Urban river restoration can therefore be mutually beneficial to the river and surrounding built environment. However, this requires substantial investment of funds, capital resources, and time to plan an infrastructure overhaul that addresses existing limitations of stormwater and wastewater systems. Projects should integrate an understanding of ecosystem services; Dorothea Dix Park could benefit from improving upon this to include a quantification of the ecosystem services and full integration with public works projects.

Methodology & Resilience Evaluation Tool

Tool Overview

The Resilience Assessment Tool is based on an established methodology from the NYC Mayor's Office of Resiliency's Climate Change Exposure Screening Tool and the Benefit-Cost Analysis from their Climate Resiliency Design Guidelines. It will assess the project based on the type of project, location characteristics, and future hazard predictions. The goals of the tool are to:

1. quantify the benefits of park projects along various axes of resilience, and
2. determine whether best practice design guidelines can be implemented or if a more detailed risk assessment is required. The Resilience Assessment Tool aims to streamline the decision-making process for Park staff related to resilience.

Resilience assessments can be complicated and highly variable based on location. Therefore, for each part of the risk assessment, a local, state, or national data source has been identified to provide the best information for decision making.

Step 1: Concept Phase

After reviewing the case studies, a scoring matrix was determined to be the best tool for measuring environmental impacts. The ***concept phase*** of the Resilience Assessment Tool is modeled after exposure screening tools. Exposure screening tools identify environmental risks associated with the type of project

and provide input on how beneficial or harmful a project might be. Innovation in this field recently has been driven by climate change risk assessment, mixing qualitative and quantitative metrics. This type of tool is appropriate for the concept phase of a project, as it can help planners shape their project to better reflect the needs highlighted by the screening questions.

These categories were primarily modelled after the NYC Resiliency Climate Change Exposure Screening Tool. Each hazard has a subcategory with risk assessment questions about the concept phase, with scaled scoring to reflect how well the project incorporates resilience. Special attention was given to the Triangle Regional Resilience Partnership Resilience Assessment Technical Report, as the project team sought to include as much local regional risk assessment into the tool as possible to promote projects that will benefit the region's resiliency goals.

The concept phase of the resilience assessment tool focuses on hazard categories, including extreme heat, drought, and extreme precipitation. Programming is included as well, reflecting the important role of parks in contributing to public environmental education. Assessment questions for ***extreme heat*** evaluate the project's goals and existing conditions for tree canopy, land cover, and adaptive elements. The concerns here focus on the local ambient temperature and the heat island effect which can be exacerbated by low tree coverage and high impervious surface coverage, based on the TJCOG Resilience Assessment and the Notre Dame Global Adaptation Initiative. The questions for ***extreme precipitation*** are meant to explore considerations for flood risk, stormwater management, and impervious surface requirements for the project. The extreme precipitation questions are also based on the above sources in addition to the NYC Resiliency Climate Change Exposure Screening Tool and the National Western Center Master Plan. ***Drought*** questions focus on adaptive elements, modeled after the National Western Center Master Plan from the South Platte River Case Study. For ***programming***, environmental education initiatives for the public were prioritized. Scoring awards points for multiple resilience measures and provides an opportunity for weighing decisions about resilience in the early stages of a project. The total scores can then be used by project leaders to quantify how well the concept plan integrates resilience ideas and to suggest opportunities to prioritize resilience further.

Step 2: Design Phase

After the concept phase assessment has been completed and more project specifications are available, the Resilience Assessment Tool can be utilized for the design phase. This portion of the tool narrows in on specific metrics with quantitative thresholds that align with the resilience values from the first phase. These are categorized into interconnected indicators for Ecosystem, Technical and Engineering, and Community Development and Co-Benefits.

Ecosystem Indicators

The Ecosystem Indicators focus on how the natural environment can be utilized to promote resilience. This includes elements such as riparian forest buffer, preserving existing trees, promoting the use of native species, preventing soil erosion, and establishing a landscape maintenance plan that improves the resilience of the ecosystem and park overall. Specifics include soil testing, irrigation measures, shrub and tree pruning, grass height regulations, and integrated pest management, rain gardens, or rainwater harvesting.

Trees & Vegetation

Native trees and vegetation play an important role for urban ecosystem services and may be the most important elements for Dix Park. National best practices and research suggest that at a minimum, there should be a 50% riparian forest buffer maintained along the creek; ideally, this percentage would be greater than 50% and approach 100%.[113] At a minimum, 10-15% of existing trees should be preserved with any development changes.[114] All new landscape installations should include an assessment of existing conditions for flood resilience

and storm damage.[115] For example, Japanese Holly and Japanese Boxwood are often killed by flood events and should be avoided to promote landscape resilience.[116] Finally, all new trees planted within a project should be selected from the list of Suggested Trees from the City of Raleigh Tree Manual.[117]

Use of Native Species

With respect to the landscape and construction guidelines, best practices that focus on riverine restoration and the Raleigh topography are likely most appropriate. Species that are more resistant to the effects of flooding or extreme precipitation, which is increasingly important as the climate changes, should be prioritized. While the promotion of native species is important to the resilience of the landscape, biodiversity is also a valuable tool; therefore, a balance should be achieved by prioritizing native species while not precluding a smaller portion of non-native species intentionally selected for their contributions to ecosystem services.[118] As such, the resilience tool encourages a landscape maintenance plan that promotes native species, but does not impose strict quantitative thresholds.

Landscape Maintenance & Erosion Prevention

As demonstrated in the case study application, landscape resilience strategies include severely restricting non-native species, xeriscaping (landscaping designed with reduced irrigation needs), and providing a variety of landscape experiences that prevent erosion. To accomplish these goals, Dorothea Dix Park must have an established landscape maintenance plan with a particular emphasis on resilience. These guidelines may differ from other public property management protocol in the City of Raleigh. In addition, the Dorothea Dix and City of Raleigh teams could rely on existing partnerships with the NC State Cooperative Extension for evidence-based approaches. The Dix Park landscape maintenance plan should include soil testing (regular testing of sediment yield and soil health) and irrigation (regular measurement of average runoff and water efficient irrigation methods). Shrub and tree inspections—pruning, replacement planning, and tree protection—is likely included in standard park maintenance protocol. Language surrounding tree and shrub protection and replacement, particularly after storms, should be strengthened, and the ability to do so should be adequately funded. The landscape maintenance plan should include regulation for grass mowing height, as recommended for Carolina Lawns by the NC State University Cooperative Extension. Grass mowing height should be considered a minimum rather than a maximum, given that taller grasses are more likely to prevent erosion.[119] In addition, provisions for the maintenance of perennials across seasons to promote healthy growth and integrated pest management (IPM) practices should be included.[120] The Landscape Maintenance Plan should utilize Integrated Pest Management (IPM) as approved by the NC State Extension, particularly Steps 1-5. IPM emphasizes identifying and monitoring pests, assessing thresholds for action, and implementing a targeted treatment strategy to avoid overuse of pesticides. Finally, the iTree Tool's "Eco" tab can analyze the erosion prevention benefits of tree species.[121]

Other Design Considerations

The tool also promotes the use of biophilic infrastructure in place of traditional physical infrastructure in order to utilize green infrastructure design principles. Biophilic or biomimicking infrastructure could be achieved through treating stormwater onsite or focusing on a net-zero or net-positive approach for stormwater impacts, explained in more detail in the subsequent stormwater section.[122] Dix Park projects that include landscaping should integrate rain gardens, bioretention basins, or other flood-resistant design elements.

Opportunities for rainwater harvesting, especially those that can be applied for use within landscape watering systems, should be identified early in the design phase in order to maximize resilience benefits. Issue areas should be identified; a site assessment following a heavy rain or storm event can inform flood prevention efforts in the landscape design.

Technical & Engineering Indicators

The development of natural spaces with Dix Park can contribute to resilience in ways that reduce the impact of severe weather events on Raleigh's infrastructure and private residences. The technical and engineering indicators described in this section address the impacts of built and natural areas on stormwater management and carbon sequestration.

Stormwater Runoff

Stormwater management is a critical infrastructure function in urban areas that is made more important as urban development increases and climate change leads to more frequent extreme precipitation events. These events can lead to both minor and major flooding, impacting private properties and the ability of the stormwater utility to process stormwater without discharging harmful pollutants downstream. The concentration and velocity of runoff causes flooding and erosion, which compounds as more areas within the same watershed become developed. Additionally, when impervious surfaces prevent infiltration, groundwater recharge is greatly reduced, elevating the community's drought risk.

Stormwater runoff is an important issue for the City of Raleigh. Raleigh's Engineering Services Department manages stormwater in the city and has developed programs and conducted studies for implementing green stormwater infrastructure. The City initiated a stormwater utility fee in 2002, incorporating an increasing rate structure according to the amount of impervious surface on a property. The City allows for fee reductions for on-site stormwater facilities that correspond to the amount of stormwater controlled, with greater fee reductions if upstream stormwater is controlled in addition to stormwater generated on-site.[123] In addition to imposing fees for stormwater generation, the City of Raleigh incentivizes implementation of green infrastructure on private property. The Raleigh Rainwater Rewards program reimburses up to 90% of project cost in eligible areas.

Green infrastructure development and green space preservation can provide benefits that extend beyond the borders of Dorothea Dix Park. Dix Park provides a unique opportunity to address stormwater management: a 2015 study identified Rocky Creek below Pullen Road as one of the watersheds most susceptible to flash flooding in the entire United States.[124] The projects in Dorothea Dix Park should seek to collaborate with broader resilience and stormwater management programs developed by the Engineering Services Department. With respect to stormwater runoff, this tool considers the benefits related to impervious surfaces and green stormwater infrastructure.

Impervious Surfaces

Stormwater runoff generation is exacerbated by large areas of impervious surface. The percentage of impervious land cover has been used as an important indicator for urban stream health and urban stormwater management.[125] Arnold and Gibbons identify three categories of stream health based on impervious coverage within a watershed: "protected" (less than 10%), "impacted" (10%-30%), and "degraded" (greater than 30%). These categories are employed in the tool scoring mechanism.

Green Stormwater Infrastructure

A storm event may be measured by the depth of rain falling onto a site, or by the probabilistic estimate of how frequently such an event may occur. That is, a ten-year design storm has a one-in-ten chance of occurring

any given year, while a one-year design storm is likely to occur once each year. The City of Raleigh Stormwater Design Manual lists the design rainfall depths for storms from 2- to 100-year.

This indicator evaluates the capacity of the on-site interventions to manage stormwater above what is required by code. The City standard requires on-site management of 2-year and 10-year design storms. This tool awards points for capturing stormwater volume for even larger storms. If a detailed engineering specification has been created for the on-site stormwater control measures (SCMs), this information may be used to evaluate and score the project.

If detailed engineering information is not known for the project, the Model My Watershed (MMW) tool can be used to conduct a design-level analysis of stormwater runoff quality and quantity. The MMW tool, from the Stroud Water Research Center, takes inputs from the National Land Cover Database and the USDA Gridded Soil Survey Geographic (gSSURGO) Database, to estimate runoff, infiltration, and evapotranspiration rates of a user-defined site given a rain event specified in inches of rainfall. This tool may also be used to evaluate alternatives in site design, including building footprints, impervious surfaces, and various types of SCMs.

Carbon Sequestration

Urban trees are an important tool for cities to mitigate the effects of climate change and provide many co-benefits, including reducing urban heat island effect and stormwater runoff, improve air quality, and increase property values.[126] This indicator considers the carbon sequestration of newly-planted trees and assumes that trees are the primary carbon sequestration tool.

The i-Tree Planting Calculator is used to determine the carbon sequestration capacity of a proposed project. This tool allows for an easy calculation of carbon dioxide sequestration based on a specification of tree species, size and quantity. Depending on the level of information available, this tool can be used to generate accurate estimates for the carbon sequestration capacity of the project's trees.

This measure is indexed based on the carbon sequestration capacity of the average forest in the southeast region. According to the US Forest Service, the average southeastern forest sequesters approximately 2.75 pounds of carbon dioxide per square foot per year.[127] The points system awards two points for minimal tree planting (sequestration of <1.5 lbs/square feet), six points for approximately half the carbon density of a typical forest (1.5-2.75 pounds per square feet), and ten points for carbon sequestration equal to or greater than the typical forest (>2.75 pounds per square feet).

Community Development & Co-Benefits Indicators

The Community Development and Co-Benefit Indicators serve to incorporate additional elements of resilience not captured in the Ecosystem and Technical/ Engineering categories. These indicators focus on how the space and activities within Dorothea Dix Park can contribute to community cohesion and allow residents to adapt to both climate and non-climate stressors.

Educational Programming

Education about the impacts of climate change and how to prepare for its effects are critical strategies for building community resilience. The City of Raleigh's Emergency Management Department has orchestrated a citywide effort to educate residents on what to do in various emergency situations. This created the ReadyRaleigh Handbook, which provides resources and recommendations in the event of an emergency, including flooding and extreme heat events. However, it is important for Raleigh residents to understand the root causes of severe climate events and prepare proactively in order to mitigate the impact of these events.

Educational efforts around environmental and sustainability issues are common fixtures in urban parks. A recent example is the Walnut Creek Wetland Park, which offers both passive and active educational programming, mostly targeted to school-age children, and integrated with the park experience. The variety of programming allows for new experiences and learning opportunities with each visit. A local environmental advocacy group, Partners for Environmental Justice (PEJ) is a key partner at Walnut Creek Wetland Park, and they help to train residents in green infrastructure, watershed management, community science, and leadership and advocacy skills. These efforts will be consistent with the Dorothea Dix Park Master Plan, which highlights the park's "potential to be Raleigh's flagship venue for environmental awareness and education".[128]

Educational programming at Dorothea Dix Park should adopt a similar model to Walnut Creek Wetland Park by providing a range of educational opportunities, but ensure that these opportunities are accessible to all ages. When considering educational programming for Dix Park, the integration of programming with the Walnut Creek Wetland Park may be relevant as the entirety of the park is within the Walnut Creek watershed. Further, a partnership with PEJ could be mutually beneficial, providing additional resources to this valuable community group while building resilience and community capacity.

For static programming such as signage or informational placards, our tool awards five points; for interactive and ongoing programs and events such as tours, nature walks, or other activities, the tool awards tens points. In the future, there may be park-wide rather than project-specific educational programming. However, it may still be valuable to consider how the incremental changes of a single project contribute to the comprehensive educational program. This indicator should be re-evaluated as park programming becomes clearer.

Tree Canopy

Protection of existing trees and increasing future tree canopy is prioritized in this tool because of their importance for environmental justice and ecosystem resilience. As previously found in the case study exploration and the establishment of the tree and vegetation ecosystem indicators, lack of tree canopy and access to green space contributes to poor air quality, higher surface temperatures, heat island effects, stormwater runoff, and flooding.[129] All of these adverse impacts influence the wellbeing of neighborhood residents surrounding the site and will be exacerbated by climate change.[130]

The Triangle Regional Resilience Assessment notes that significant tree canopy is an important source of adaptive capacity during extreme heat events.[131] The report identifies a target tree canopy of 62.2% to maximize adaptive benefits. This tool assigns the maximum ten points for projects with greater than 62% tree canopy, six points for an intermediate level of tree canopy (40-62%), and two points for tree canopies lower than 40%. This indicator may be difficult to measure because trees have a long lifespan and will not realize their full benefits until years or decades of growth occur, though i-tree has tools that can assess canopy. Depending on the priorities of the Dix Park team, this indicator may be used to evaluate tree canopy at the time of project completion (assigning greater value to protection of existing trees), or projected tree canopy at a future date (accommodating growth of newly planted trees).

Heat Refuge

In addition to tree canopy considerations, community development and co-benefits indicators should evaluate heat refuge options within a project. Extreme heat is a growing concern for public health professionals, and cooling stations or publicly accessible heat refuge options will be vital to combating heat illness and mortality.[132] Extreme heat is consistently the

deadliest weather event, and parks play an important role in providing natural cooling during these events.[133] Parks have the opportunity to supplement the natural cooling effects of green space with physical cooling infrastructure in the form of splashpads or publicly-accessible air-conditioned spaces.

In Raleigh and other urban areas, heat refuge may be available to people experiencing homelessness or those without air conditioning at local homeless shelters or other public buildings such as libraries or community centers. Wake County runs a complementary program during the summer months named "Cool for Wake", which offers free fans and air conditioning units to vulnerable residents.[134] While this program is beneficial, it has the potential to raise utility costs for low-income residents in already precarious situations.

The Park has an important role to play in providing relief from extreme heat for vulnerable residents. To acknowledge this, the Resilience Assessment tool awards ten points to any project with some form of heat refuge incorporated into the design. These should be context-sensitive, and may not be appropriate for all projects. However, given the importance of this resource, any project incorporating this function should be noted for its resilience benefits.

Background: Rocky Branch Creek & Landfill Restoration

History

In the 1870s, a landowner made changes that weakened the streambed and clogged the creek with sediment. In 1902, the State Board of Health found that Rocky Branch's water was "so contaminated by the hospital's own slaughter pens and nearby A&M College that it was unsuitable even for bathing." In 1956, the hospital allowed the City to establish a municipal landfill along the Rocky Branch. The landfill area grew to cover approximately 56 acres, containing an estimated 1.1 million cubic yards of waste. The municipal landfill operations ceased in 1972. In 1978, the North Carolina Division of Water Quality declared the Rocky Branch to be the state's most polluted urban stream. From 1972 to 2006, the area continued to receive fill from nearby construction projects. Today, the area is considered a "Pre-Regulatory Landfill," which is defined as any land area on which municipal solid waste disposal occurred before 1983. Monitoring and remedial action plans for PreRegulatory Landfills are administered by the North Carolina Department of Environmental Quality's (NC DEQ) Inactive Hazardous Sites Program.

Hydrology

Dorothea Dix Park is located within the larger Walnut Creek watershed which ultimately drains to the Neuse River. Studying the existing stormwater systems along Rocky Branch reveals opportunities to improve the systems and the quality of water they transport. Today, a large volume of water enters the Creek through culverts and pipe connections that drain from the roadway surfaces of Western Blvd., neighborhoods (including a large portion of Boylan Heights) and institutions (including Central Prison) that are located to the north of the park. High volumes of water after storms contribute to erosion and debris deposits along the banks of the Rocky Branch.

Transportation

Dorothea Dix Park is located near Downtown Raleigh, a rapidly growing metropolitan area. Planning for Dix Park includes planning for how people will access the park. Today, the transportation network is singularly focused on automobile access, channeling

vehicles to sparse entrances to the site. The Rocky Branch Greenway along Western Boulevard is the only formal bicycle path accommodation on the site.[135] Access to the site was historically limited because the site was not a public destination and was purposely secluded from adjoining properties and neighborhoods.

Western Boulevard itself is the most significant barrier to bicycle and pedestrian access to Rocky Branch Creek. Pedestrians and cyclists cross Western Boulevard at Boylan Avenue, Hunt Drive, and Ashe Avenue, but the crossings are neither intuitive nor convenient. Crossing the street can be challenging due to traffic speeds and volumes, roadway width, and the lack of adequately protected pedestrian crossings at convenient locations.

A critical unknown in the future of Western Boulevard is the potential for bus rapid transit (BRT) service between downtown Raleigh and downtown Cary. The final BRT design and capacity will significantly influence the flow of traffic on Western Boulevard and its ultimate cross-section. While local buses may still operate along Western Boulevard, BRT must have a limited number of stops to offer competitive travel times. No more than three or four stops at most are likely along the creek.

Ecology

The site's location on the edge of the Piedmont region creates an opportunity to restore a wide range of native plant communities and habitats. The creek area is identified as "Riparian Forest" in the land cover analysis, which covers about 15.20 acres. The Rocky Branch is an important natural element at Dix Park, and its realignment and restoration will provide a significant functional lift to this stream and its adjacent riparian forests. This riparian corridor contains significant native vegetation, much of which should be preserved. Given the prevalence of native vegetation in the Rocky Branch riparian corridor, restoration and initial management will focus on removal of invasive species and planting of appropriate native vegetation.

Summary of Existing Conditions

Overall, there are a few major issues identified: lacking connections to local pedestrian and transit networks, limited options for entry and exit, invasive plants that block out the city with poor visibility, high volumes of water after storms, steep slopes along the creek are prone to erosion, and the overall degradation of natural systems.

Application: Rocky Branch Creek & Landfill Restoration

Executive Summary of Rocky Branch Application

Applying this Resilience Evaluation Tool to all relevant projects in the Dix Park Master Plan will be key to ensuring Dorothea Dix Park is equipped to rebound from disaster as it strikes. Unfortunately, applying the Resilience Evaluation Tool in its entirety to the Rocky Branch Creek project is currently impossible due to the lack of relevant information available to input into the tool. While the project team has attempted to apply the tool to the best of their ability, much of this section consists of tutorials to be used by City of Raleigh and Dorothea Dix Park staff in applying it on their own when they receive the required information.

Concept Phase

The concept phase focuses on risk assessment of the surrounding area of Rocky Branch Creek based on

the three hazard categories mentioned in the Resilience Assessment Tool: extreme heat, drought, and extreme precipitation. By walking through the guiding question and filling in the required data in the scorecard, the final scoring for each indicator can be derived. The overlay analysis result can help users identify the current hazard vulnerabilities of the surrounding area, and thus evaluate the project's ability to resilience benefits.

Exposure Screening

There are several resources for the required data to fill in the scorecard. Through the Notre Dame Urban Adaptation Tool, users can visualize where climate hazards and social vulnerabilities are highest by census tracts. The data provided for the indicators like the population in high-risk flood zones, impervious surfaces, and tree canopy can help to define the surrounding area's vulnerability faced with extreme heat and extreme precipitation. The Model My Watershed Tool allows users to draw a polygon around the project area and determine the land cover percentage. The Dorothea Dix Park Master Plan also serves as a great resource to find out the planned intervention, such as a rain garden, vegetation basin, cooling garden, etc. See Appendix 2 for details of scoring results.

From the perspective of hazard exposure, the project's surrounding area is less vulnerable to extreme heat because of the low percentage of developed land and high coverage of tree canopy. However, the area has high drought vulnerability because the increasing water demand results from the booming population in the Triangle Region. Moreover, the area is more vulnerable to extreme precipitation because most of the areas along the creek are marked as flood zones, and there is a high proportion of impervious land surface. However, there is not enough information to tell whether the project locates any infrastructure or buildings within the 100-year floodplain.

From the perspective of planned intervention, the master plan incorporates hazard mitigation elements such as cooling garden, native planting, rain garden, and stormwater pond. However, it does not take drought-resistant landscaping and low-water use practices into account.

Design Phase

Ecosystem Indicators

Currently, there is not enough data to definitively apply any components of our tool to ecosystem indicators. What follows is primarily a qualitative analysis based on our criteria, with estimates that would need additional information to validate.

The plan to restore the creek involves changing it to its original path, removing invasive species, creating stormwater catchment ponds, vegetating gardens, and having pervious surfaces where parking is. Beyond helping with stormwater mitigation, these will also create habitats. They plan on collecting data on flooding from FEMA flood maps and studies of Rocky Branch's existing runoff at a site and watershed level. They plan to implement BMPs for stormwater management.[136] Based on this information, the plan would get a 3-5 on the 'Are there rain gardens and other flood-resistant design elements incorporated into the landscape design?' and 'Have opportunities for rainwater harvesting that can be utilized for watering systems been identified?' criteria.

Stream bank erosion and sediment transport are acknowledged as major issues, and the plan states that it "will assess options for stabilizing the stream and reconnecting it to its floodplain". A grant shows that Raleigh will evaluate erosion rates and stream quality with quantitative metrics,[137] which could be used to fill in this section of the tool.

The plan does consider the effects of landfill soil moved during rehabilitation of the stream "The soil investigation and waste management plan in this planning project are key to ensuring there are no adverse effects on the stream's water quality or habitat due to removal or relocation of landfill material". They plan to do soil

borings to characterize contaminations and plan to monitor wells and piezometers to monitor groundwater for landfill leachate. They plan to "to characterize waste, identify potential hazards and limitations that will inform creek alignment options". They also want to ensure the waste does not lead to environmental justice issues, and plan to study three stream alignment options and the current conditions related to the landfill and its potential effects. They have specific performance metrics for characterizing soil.

There is little information on specific species or riparian forest buffer beyond "native" in any of the documents, though they do provide a long list of plants they are considering which certainly could provide a viable native ecosystem in a natural combination. They do mention "self-sufficiency" as a goal for the eventual ecosystem which will highlight the varied ecology of the region. There are also plans for biophilic design, as plants and soil will be used to filter stormwater.[138] Specifics of tree and lawn care and pest control strategy are the most conspicuous absences from the current plan, but we expect that to be filled in in later iterations. As noted in the tool, clear guidelines exist for those aspects of resilience. Overall, it is clear that the City of Raleigh is considering the important factors outlined in our tool, but additional details are needed in later steps to fully apply the tool.

Technical & Engineering Indicators

This portion of the tool primarily measures how well the development handles stormwater runoff, in addition to some carbon sequestration considerations. It scores the development on three factors: how well its green stormwater infrastructure prevents stormwater runoff, the percentage of the development covered by an impervious surface (lower is better to prevent stormwater runoff), and how well the development's trees sequester carbon dioxide.

The last of these measurements requires the use of the U.S. Forest Service's i-Tree Planting Tool. Currently, the project team has insufficient information to configure this tool for the Rocky Branch Creek project, but below is a short tutorial using some placeholder values:

1. The tool walks the user through the four tabs on the top from left to right. First is the Location tab. Enter North Carolina for State/Province, Wake for County/Division, and Raleigh for City, and then hit Next.
2. The Parameters tab requests the user enter electricity and fuel emissions factors, the projected length of the project in years, and the percentage of local trees projected to die over the life of the project. Not all of this information is available to the resilience team, so this tutorial will use the default values of 524.6 and 88.7 for electricity and fuel emissions factors, respectively, using kilograms as he unit for both. It lists the project as lasting 40 years with a 10% tree mortality rate. Depending on the desired output metrics, electricity use may not be required.
3. Next is the Trees tab, which requires specifics of what types of trees are going to be planted and where for the project. The resilience team has some idea of the trees that might be planted along the Rocky Branch Creek, but not of proportions among these types of trees or of specific uses. As such, this tutorial enters Sycamore, American – a tree listed in the Dix Park ecology for the Rocky Branch Creek area (Dix Park Master Plan 2018) – as the Species, and the DBH in inches as 30, denoting that the trees are approximately two and a half feet in diameter at breast height. Under Building Information, the trees are listed as lying greater than 60 feet North (0°) of the nearest building. The buildings are listed as being "Built after 1980" and having "Heat & A/C", while the trees are listed as being in Excellent Condition and having "Full Sun" Exposure to Sunlight. If the shading potential for buildings is not to be evaluated, any value can be entered for building information. The Number of Trees in this group is 12. A user can add many more tree groups if they so choose.

4. The tool calculates the data the user entered and churns out a report detailing the trees' effects on carbon dioxide, energy, ecosystem services, and air pollution, from both objective and estimated financial standpoints. Finally, these values can be plugged into the resilience evaluation tool.

In this example, the trees sequester 175,981.6 pounds of carbon dioxide. This is then divided by the total square footage of the project and that final value is used to score the project on carbon sequestration: 10 points if greater than 2.75 pounds per square foot, six points if between 1.5 and 2.75 pounds per square foot, and two points if fewer than 1.5 pounds per square foot.

With respect to preventing stormwater runoff, projects are scored on their green stormwater infrastructure. The City of Raleigh Stormwater Design Manual defines runoff depths for many magnitudes of storms with many different curve numbers, where curve numbers are defined by surface cover type, hydrologic condition, soil group of the surface, and sometimes city zoning. The Model My Watershed tool can be useful in analyzing stormwater runoff. A tutorial written by Jordan Branham, a teaching assistant for an impact assessment course at the University of North Carolina at Chapel Hill, has been included in its entirety as an appendix at the end of this report.

The project team does not have all of the relevant information to determine the curve number for the Rocky Branch Creek project, or to completely apply the Model My Watershed tool, but once such information is gathered, it can be used to determine how much runoff is likely to be caused by 25-, 50-, and 100-year storms. The project earns three points if its green stormwater infrastructure can manage a 25-year storm, six if it can manage a 50-year storm, and 10 if it can manage a 100-year storm. This can be added to the quantitative evaluations done to reshape the creek.

Finally, the project is scored on the percentage of land area projected to be covered by an impervious surface: 10 points if less than 10%, four points if between 10% and 30%, and zero points if greater than 30%.

Community Development & Co-Benefits Indicators

The community development and co-benefits indicators encompass educational programming and heat refuge considerations. These elements not only promote resilience within the natural systems but also benefit the surrounding neighbourhoods and visitors to the park.

Regarding educational programming, the park did a great job of holding free programs and events. In 2019, 88 events were held and more than 73,000 people participated. Even though there is no information about whether or not these programs incorporate resilience components, we regard this as a great opportunity to educate the local community to build resilience, especially if climate preparedness is included. The park can be used to teach about climate change, its consequences, climate preparedness, and mitigation. The comprehensive plan can also incorporate components about how local resources, such as non-profit organizations, community members, business, and municipal departments can be utilized effectively to build capacity for community resilience.

Heat refuge considerations are the most conspicuous absences in the master plan. Extreme heat can cause exhaustion and heat stroke, while older adults, children, and chronically ill individuals are at greater risk for extreme heat. As previously mentioned, Wake County has launched a "Cool for Wake" seasonal heat relief program that provides free fans to vulnerable citizens who are adversely affected by extreme summer temperatures. To mitigate the negative impacts of extreme heat, the park should partner with local organizations to provide hydration stations, refuge locations and donation collection points, or a combination of these services at the site from May to mid-September of each year.

Tree canopy is also an effective natural solution for urban heat islands. Trees cast cooling shadows, and they also breathe water vapor out through their leaves, which cools the surrounding air. Erecting large tents under the tree canopy to provide shade along with misting stations,

fans, water fountains and chairs can not only effectively benefit citizens seeking respite from the heat, but also bring more visitors and stimulate the vitality of the park. To calculate the proposed level of the tree canopy, the i-Tree Planting tool mentioned above can be utilized.

Recommendations & Next Steps

The project team offers the following recommendations and next step as Park staff implement the Resilience Assessment Tool.

- Establish data collection protocols for baseline data that can be used before, during, and after project implementation: Recommend these protocols to the City of Raleigh and provide data standards to consultants/designers for projects
- Review indicators and focus areas for consistency with Dix Park: Ensure understanding and relevance of different tool components for staff and consultants
- Coordinate with City Departments: Within the city of Raleigh, staff in Sustainability and Engineering Services are working on related initiatives to build resilience. Dix Park should seek to adopt best practices from other departments and integrate these efforts into a broader
- Survey the community to understand priorities for resilience: This can help to prioritize equity and ensure that environmental resilience benefits are realized outside of the parks boundaries
- Measure twice, cut once: Ensure all aspects of resilience considered included in plans before moving to execute them

Limitations

The following limitations are important to consider when implanting the tool.

- The tool works best with available project data and existing conditions data, which can be limited. This important to consider when the tool is applied and how valid are the assumptions used at any point in time.
- Using this tool could require substantial time and resources on part of staff, although this may be requested from design consultants.
- The tool requires re-evaluation at each step of the project phase. While this may add additional work for staff, it also provides an opportunity to re examine priorities.

(continued on next page)

Appendix 1: Resilience Assessment Tool

Concept Phase

Resilience Assessment tool is not a calculator (i.e. does not have embedded formulas that guide the user). As a result, the tables will need to be formatted for presentation in this appendix. This is consistent with the NYC Resilience tool.

Category	Subcategory	Directions	Answer and Score	Category Score (Higher is better)	Resources
Extreme Heat	Tree Canopy	Is the tree canopy in the project site's census block group, or any adjacent census block groups <50%? Refer to the resource provided.	Yes (0) No (+2)		Notre Dame Global Adaptation Initiative
		Will the project result in a significant increase or decrease the existing tree canopy?	Increase (+3) No change (0) Decrease (-3)		
	Land Cover	Is existing land cover >62.5% developed (not open space)? Refer to the resource provided.	Yes (+2) No (0)		Model My Watershed (using National Land Cover Database) Draw a polygon around the project area to determine land cover percentages.
	Adaptive Elements	Will the project include a heat refuge (e.g. splash pads, publicly-accessible air conditioned space)?	Yes (+5) No (0)		
Drought	Adaptive Elements	Will the project incorporate native plantings, drought-resistant landscaping, and/or low-water use practices?	Yes (+3) No (0)		
		Will the project include water storage and reuse elements (e.g. rainwater capture)?	Yes (+3) No (0)		
Extreme Precipitation	Flood Risks	Will the project locate any infrastructure or buildings within the 100-year floodplain?	Yes (-3) No (+3) N/A (0)		
	Impervious Surface	Is the existing impervious surface in the project site's census block group, or any adjacent census block groups >30%? Refer to the resource provided.	Yes (+3) No (0)		Notre Dame Global Adaptation Initiative
		Will the project result in a significant increase or decrease the existing impervious surfaces?	Increase (-3) No change (0) Decrease (+3)		
	Adaptive Elements	Will the project incorporate green stormwater infrastructure or low-impact development elements?	Yes (+3) No (0)		
Programming	Environmental Education Initiatives	Will the project include resilience-focused educational programming?	Yes (+5) No (0)		

Design Phase

Category	Subcategory	Directions	Scoring	Category Score	Resources
Ecosystem Indicators (1 of 3)	Trees and Vegetation	Is a 50-100% Riparian Forest buffer maintained along the creek?	Yes - 5 points No - 0 points		
		Are 10-15% of existing trees preserved with any development changes?	Yes - 5 points No - 0 points		
		Have all new landscape installations included an assessment of flood resilience and storm damage? (For example, Japanese Holly and Boxwood are often kill by flooding and could be avoided.)	Yes - 5 points No - 0 points		
		Are all new trees planted from the list of Suggested Trees from the City of Raleigh Tree Manual?	Yes - 5 points No - 0 points		
	Use of Native Species	Do all new landscape installations utilize approved native species?	Yes - 5 points No - 0 points		
		Are current native species supported and is there a landscape plan for reducing non-native species?	Yes - 5 points No - 0 points		
	Landscape Maintenance and Erosion Prevention	Does Dix Park have an established landscape maintenance plan with a particular emphasis on resilience, even if this may differ from other public properties in Raleigh?	Yes - 5 points No - 0 points		
		Soil Testing: Does the landscape maintenance plan include regular testing of sediment yield and soil health?	Yes - 5 points No - 0 points		
Ecosystem Indicators (2 of 3)	Landscape Maintenance and Erosion Prevention	Shrub and Tree Inspections and Pruning: Establish tree protecting and replacement planning. Pruning and inspection of trees and shrubs will likely be included in standard park maintenance. Does the landscape maintenance plan include provisions for tree and shrub protection and replacement? (ie after storms)	Yes - 5 points No - 0 points		
		Perennials and Grasses Cut Back (Grass Height): Does the landscape maintenance plan include regulations for grass mowing height, as recommended for Carolina Laws by NCSU Cooperative Extension? Grass mowing height should be considered a minimum rather than a maximum - higher grass prevents erosion.	Yes - 5 points No - 0 points		
		Does the landscape maintenance plan include provisions for maintenance of perennials across seasons to promote healthy growth?	Yes - 5 points No - 0 points		iTree Planting Tool
		IPM: Does the Landscape Maintenance Plan utilize Integrated Pest Management as approved by the NC State Extension, particularly Steps 1-5? IPM emphasizes identifying and monitoring pests, assessing thresholds for action, and implementing a targeted treatment strategy to avoid over-use of	Yes - 5 points No - 0 points		

Category	Subcategory	Directions	Scoring	Category Score	Resources
Ecosystem Indicators (3 of 3)	**Other Design Considerations**	Are there rain gardens and other flood-resistant design elements incorporated into the landscape design?	Yes, fully - 5 points Yes, to a limited degree - 3 points No - 0 points		
		Have opportunities for rainwater harvesting that can be utilized for watering systems been identified?	Yes, identified and working toward implementing - 5 points Yes, identified but not steps taken - 3 points No - 0 points		
		After a heavy rain, have issue areas been identified (by photographs, mapping, or text documentation) to understand where the landscape design can be improved to prevent flooding?	Yes - 5 points No - 0 points		

Category	Subcategory	Directions	Scoring	Category Score	Resources
Technical/Engineering Indicators	**Stormwater runoff and green stormwater infrastructure**	Does planned green stormwater infrastructure manage 25- 50- and 100-year storms? For approximate calculations, Use the Model My Watershed program to assess the stormwater management for various green infrastructure measures. If detailed stormwater management capacity information is known, use that data. Compare to expected runoff values from Raleigh Stormwater Manual pp. 53-54.	If volume captured is >100-year - 10 pts >50-year - 6 pts >25-year - 3 pt		Model My Watershed Tool
	Impervious Surfaces	What percentage of the project area will be impervious surface?	<10% - 10 points 10-30% - 4 points >30% - 0 points		
	Carbon sequestration	Utilize the iTree Planting tool under the "CO2" tab to determine the CO2 sequestration benefits. (include only newly planted trees)* Divide by project lifetime and project square footage to determine CO2 sequestered per square foot per year.	>2.75 lbs/sqft - 10 points 1.5-2.75 lbs/sqft - 6 points <1.5 lbs/sqft - 2 points n/a - 0 points		iTree Planting Tool

Category	Subcategory	Directions	Scoring	Category Score	Resources
Community Development and Co-Benefits Indicators	**Educational programming**	Is resilience-focused educational programming included in the project?	Yes, interactive and ongoing programming - 10 points Yes, but only signage - 5 points No - 0 points		
	Tree canopy	What is the proposed level of tree canopy?	>62% - 10 points 40-62% - 6 points <40% - 2 points		
	Heat refuge	Does the project provide a publicly accessible heat refuge or cooling station to be used during extreme heat events?	Yes - 10 points No - 0 points		

Appendix 2: Scoring Result of Concept Phase Assessment

Extreme Heat	The tree canopy in the project site's census block group	42.6%
	The project's impact on the existing tree canopy	No Change
	The existing developed land cover (not open space)	26.04%
	Whether the project includes a heat refuge	Yes
Drought	Whether the project includes native plantings	Yes
	Whether the project includes drought-resistant landscaping	No
	Whether the project includes low-water use practices	No
	Whether the project includes water storage and reuse elements	Yes
Extreme Precipitation	Whether the project locates any infrastructure or buildings within the 100-year floodplain	No Data
	The existing impervious surface in the project site's census block group	17.8%
	The project's impact on the existing impervious surface	Increase
	Whether the project includes green stormwater infrastructure or low-impact development elements	Yes

Appendix 3: Model My Watershed Tutorial

Go to the Model My Watershed website. Create an account and login..

1. Click on Projects in the upper right and select "Create New Project." You will then be given a splash screen where you can scroll down on the left and say "Get Started."
2. Draw the site boundary as accurately as possible using the "Draw Area" tool (or draw the site area in GIS and import it using the "Upload File" tool).

a) How accurate should you be? Draw the boundary as accurately as you can as you will be drawing significant detail of the site features.

3. After closing the boundary while drawing the site, you will see some statistics about the site you have drawn (you can also re-draw it if you made a mistake). At the top, you will see "Analyze," "Monitor," and "Model" tabs; click on "Model." You will see two models.

a) For modeling done for the 24-hr storm, you will use "Site Storm Model."
b) For modeling done for annual averages, you will use the "Watershed Multi-Year Model."
c) You cannot switch between these two models without creating a new project. Any scenario changes you model will need to be made in both projects. In switching between these two models, you will create new project changes you will make to scenarios.

4. At this point, you can click on the downward pointing triangle next to "Untitled Project" and name your project. Your area will now be saved and if you log out, you can go and retrieve it. Clicking "Details" will also allow you to change the model or the analysis area.
5. To create scenarios, click "Add changes to this area" in the upper right of the screen. This will create a new scenario that you can rename by clicking on the downward pointing triangle next to "New Scenario," click "…" and then rename.
6. In your new scenario, you can add land cover changes (to match development changes and conservation practices. You will draw polygons with these land covers matching the site plans of the proposed LF development.

a) How accurate should you be here? You are drawing individual areas of impervious surface, so you will want to be as accurate as possible. It will not be possible to get things exact without importing data from CAD or GIS. While the MMW tool is not intended for engineering design work, you will still want to be accurate to be able to see changes you make due to stormwater changes.
b) What land uses should you use? MMW uses National Land Class Dataset (NLCD) data that is meant to function at the 30m resolution. You are dealing with much higher resolution here, drawing areas that are entirely impervious and areas that are not. For impervious areas (rooftops, driveways, parking lots), use high intensity urban. For open areas, use Forest or Developed-Open (grassed areas).
c) What conservation practices should you use? On this site, at the scale we are looking at, you should only really use rain garden, vegetation basin, porous pavement, and green roofs. No till agriculture does not apply to this site, and cluster housing is relevant at a larger scale.

7. Notice the precipitation slider; you can use this to adjust the precipitation to match each of the 24 hr. design storms that you are evaluating.
8. After adding land cover and conservation practice polygons, the scenario will immediately calculate runoff and water quality results, shown in the left panel. You can click the "Compare" button to see your different scenarios, and download the results by clicking the icon.

sources

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