PARKS AND TECHNOLOGY

Guidelines for implementing technological tools for parks and public spaces

CITY
PARKS
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PARKS AND TECHNOLOGY:

Guidelines for implementing technological tools for parks and public spaces

New technological tools are helping park and public space managers better understand use patterns, track operations, and provide new services and experiences. But there is now a need for more innovative tools that provide a more nuanced understanding of park use, connect park visitors with more inclusive narratives, aid in the discovery of nature and biodiversity, crowdsource community advocacy, and analyze equity in park investments, among other goals.

As the range of technology-driven solutions expands, park leaders increasingly have questions ranging from the philosophical to the practical. These center on the efficacy, ethics, and privacy concerns of new tech tools as well as how to reduce the cost of implementation through partnerships. To address these questions, City Parks Alliance is publishing this policy brief as part of its Parks and Technology Initiative. This initiative aims to make park leaders aware of the potential benefits and the very real challenges of using technology to make data-driven decisions on the use and management of parks and public spaces, promote community engagement and partnerships, expand narratives about place, and improve social equity in parks and the public realm.

EXECUTIVE SUMMARY

City Parks Alliance has been conducting programming for several years focused on the intersection of parks and technology. In this policy brief, we share practical and innovative approaches for how technology can be used to effect transformative change in parks and public spaces related to:

» **People: understanding use patterns and demographics**

» **Places: assessing facilities and conditions**

» **Policy: measuring impacts and benefits**

Measuring and understanding how people use parks has always been one of the biggest data collection challenges. New types of data collection, like collecting cell phone location data, allow for ongoing counts, cover broad areas, and connect to other demographic information. The places and facilities that make up modern public spaces are complex, especially in a citywide system of parks, and therefore, it can be challenging to assess conditions in real time. Policymakers are also seeing the value of technology to measure park usage, and policy is increasingly being informed by compelling, real-time, data-driven evidence on the benefits and impacts of parks systems.

For each of the topics listed above, we include real-world examples of how cities across the country are using technology to plan and manage their park systems and examine problems, challenges, tools, solutions, and potential applications. We discuss specific products and share examples of new technology solutions, based on the experiences shared by practitioners in our programming. The inclusion of certain products is not a commentary on their efficacy. Each product has different pricing and pros and cons for its use, as well as competitors that may be a better fit for specific users. The products mentioned in this policy brief are included for illustrative purposes only and are not a comprehensive list or endorsement by City Parks Alliance, its contractors, or its supporters.

Drawing from the examples in this report, we offer a framework for park leaders to approach their exploration of technology solutions. Applying technology solutions for the purposes of better understanding people and places, as well as evaluating policy, can help ensure that technology solutions align with the organization's vision, goals, and values.

A framework for exploring technology solutions:

» Defining the problem or challenge new technologies are meant to address

» Building trust by engaging the community, other stakeholders and partners, and key decision-makers within your organization

» Asking peers and partners about their tech solutions and thoroughly exploring available data collection processes and policies within your organization to inform questions to potential providers

» Following up with stakeholders, partners, and organizational leaders about the selection of solutions and how their input and concerns were addressed

» Communicating with the public and illustrating with signage the type of technology in use, how it is implemented, why it is being used, and where you can learn more

» Planning for periodic review to see if the technology tool is accomplishing its intended purpose

While the specific technological tools are likely to change over time, the challenges and opportunities that park providers and their partners face in adopting new technologies in public spaces will remain relevant.

TOPICS: PEOPLE, PLACES AND POLICY

Increasingly, public agencies and the organizations that support them are collecting, centralizing, and analyzing data to drive more equitable and transparent decision-making to build trust in their communities. New applications of technology can provide even more accurate information to shape decisions about resources and policy.

People: Understanding Use Patterns and Demographics

Parks are a critical infrastructure system in our cities, yet we have few ways to efficiently understand how they are used. There is no standard way to track the number, characteristics, or frequency of users in a park. In other infrastructure systems, we have, for example, water meters, service order systems, and traffic cameras to understand how changes can impact the effectiveness of the service. Until recently, state-of-the-art tools included mechanical counters (such as infrared beam trail counters), people-intensive manual counts, or repeated user surveys. Academic observational studies can provide more insight into who visits and how a space is used. But these are limited by resources, often happening only once or twice and examining specific types of use, such as activity levels in playgrounds. Overall, these methods are constrained by the resources needed to repeat them regularly as well as the limits of the information that can be collected. For example, how can a counter (human or mechanical) determine a user's demographics, origin, or even how frequently they visit?

New data sources are available that have the potential to track many of these nuanced factors over time at a fine level of detail. The technology enabling this is a combination of satellite-based positioning (such as the Global Positioning System, or GPS)[1] and the unique identifier for each personal cell phone. Depending on the choices of individual cell phone users (all phones have the ability to opt out of location services), this information can be collected and associated with demographic information. The resulting information and the companies that assemble it for sale are anecdotally referred to as "Big Data."

The daily movement of each individual cell phone over any amount of time generates a huge amount of information, requiring a sophisticated data analysis process. The possibilities include identifying the number of park users at a site over a specific (or range of) days or times. There are limits to how precise the location can be—a reality that most of us have experienced in any phone navigation app. But in a large park, the data can show where visitors were within the space. The unique identification of a phone can track repeat visits, and the information is not limited to the boundaries of the park. Visits can be tracked back to the user's neighborhood (not more specifically than that for privacy reasons) to understand how far people travel to a particular park or what other destinations are combined with a park visit.

The privacy of individual cell phone users is protected by aggregating and anonymizing the data. Additionally, both major smartphone operating systems (Apple iOS and Google Android) and the apps within them offer options to opt out of location services. While many people have accepted interest- or location-based advertising as a trade-off in an increasingly digital world, the use of the same technologies in public spaces, by public agencies, can evoke a very different response. The National Recreation and Park Association in 2024 published Perspectives on Automated Counting Technologies in Parks and Recreation, a report exploring the needs and concerns of automated counting technologies like cameras, counters, and cell phone data among local park and recreation professionals, community members, and other stakeholders, specifically addressing selection, logistics, usage, maintenance, challenges, and privacy concerns associated with these technologies.

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[1] A worldwide navigational and surveying facility based on the reception of signals from an array of orbiting satellites.

Beyond the necessity for park agencies to be familiar with all relevant data privacy legal and policy requirements (especially at the state and local levels), it is imperative for them to address the public's awareness, understanding, and especially perception of privacy concerns in any data collection efforts and to be transparent about how this data is being used and why. Failure to adequately inform stakeholders, policymakers, and partners could derail any new data collection efforts due to well-founded public fears about privacy concerns, such as what is being collected, who has access to the data, and how it could be used for unspecified purposes.

The first-ever user count in Boston's Harbor Parks

How can organizations track the ways new and revitalized public spaces are used? This was the question asked by Boston Harbor Now about the spaces created by the Big Dig (tunneling a formerly elevated freeway along the harbor, resulting in the creation of the Rose Kennedy Greenway as a "capped" park above), as well as the 43-mile Harborwalk, 28 waterfront parks, and Boston Harbor Islands National & State Park.

Over the past 50 years, Boston's waterfront has received $20 billion in public investment. The question of how locals and visitors use the new and revitalized public lands is challenging to answer due to the unique nature of these sites, all of which comprise different spaces, cover large

areas and long distances, and are adjacent to a busy urban area. Establishing an accurate count of users over time, associating those to portions of the overall waterfront (which is managed by various local, state, and federal agencies and nonprofit partners such as Boston Harbor Now), and disaggregating the data to help overcome a history of economic and racial/ethnic disparity presented a unique challenge.

Boston Harbor Now spearheaded a project to purchase billions of anonymized records disclosing the movement of individual cell phones and their associated demographic data from 2019 through the end of 2022. This period included the pre-pandemic, stay-at-home, and reopening phases of the COVID-19 pandemic. Assisted by data analysis and supercomputing partner Tectonix, the project team was able to define locations that would be included in the counts to isolate park users from commuters and visitors to the adjacent downtown area. The accuracy of this data was verified through limited on-the-ground surveying.

The resulting analysis not only created the first-ever overall annual visitor count but also showed that recent-year increases in total visits represented a smaller number of people coming back more often. Disaggregating the data by race provided a baseline of the difference in total visitation across racial identities, showing a significantly higher percentage of white visitors relative to others in the general population. This breakdown also highlighted a pattern of use during the pandemic restrictions that has equity

implications: Non-white visitors were slower to reduce visits to Boston Harbor's parks and returned more quickly than white visitors. Overall, this effort illustrates how many people have benefited from the large-scale investments on the waterfront and provides a baseline for continued equity work to serve this diverse community.

Broad Waterfront
300M

Harborwalk
11M

Waterfront Parks
2.4M
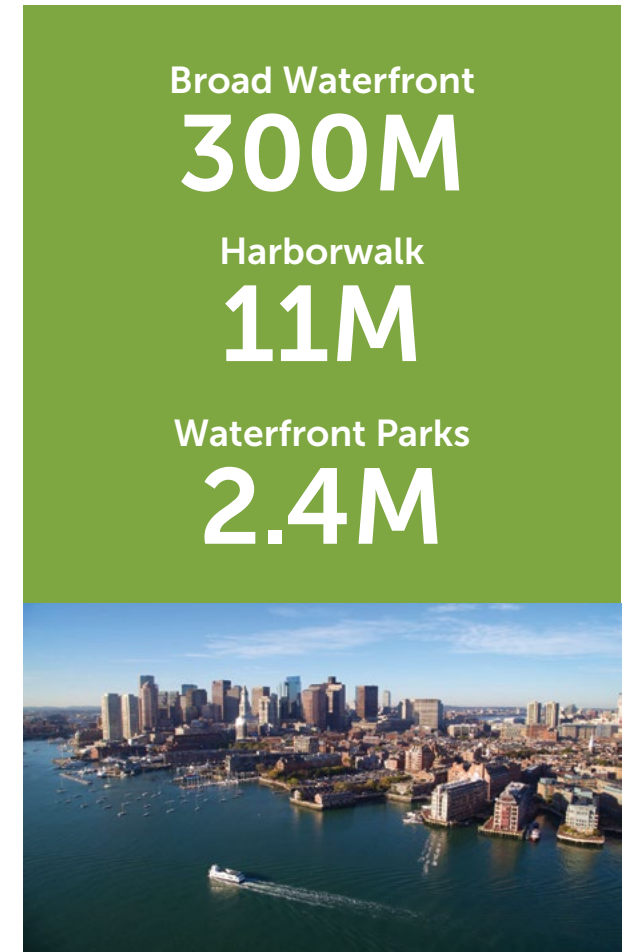
Annual Visitation across the Boston Waterfront

Credit: Boston Harbor Now

Understanding use in Denver's extensive park system

The City and County of Denver faced a daunting challenge when trying to answer questions about who is using their parks and when: With nearly 20,000 acres of parkland across over 280 sites, trails, natural areas, and unique mountain parks, the system is too large and sprawling to collect data without using technological tools.

The tool Denver decided to use is Placer.ai, a platform that offers already-processed cell phone location data (along with demographic information), which can be isolated to a location or set of locations. Using these geofences,[2] Placer.ai allows Denver Parks & Recreation staff to create reports that identify the number of people, their demographics, and their origins/destinations before and after visits, as well as other complementary datasets, such as the demographics of the surrounding census tract(s). With each park in the system identified uniquely, the department can track use based on individual parks and categories of parks and across the entire system. Denver's chart detailing the 16,260,000 total visits in 2023 shows these breakdowns, a top performer (most visits at one site), and an average for each category.

The combination of user location data and an understanding of the surrounding community demographics offers interesting opportunities to explore the customization of park design and programming. The Placer.ai platform can quickly and flexibly identify the potential market

of a park or facility, even calculating that area based on the prevalent metric of a 10-minute walk to the park. This can help park agencies plan improvements based on equity goals or serve a high population of families with children. The technology supplies the raw data but can't identify what improvements would best serve these communities, so those questions still sit with community engagement teams. These types of tools can also reveal the local economic impact of a particular park or the full park system by tracking a visitor's route after leaving the park, specifically if they stop at nearby businesses. Platforms like Placer.ai, though often costly, are already used by some cities or their partners to quantify economic development impacts and may be available for park-related analysis at little or no additional cost.

These new data sources provide some insights into the visitation of public spaces across large and small areas. However, regardless of the evolving capabilities of new technology, park leaders need to continue asking questions in their communities about what is needed, as well as what the acceptable uses of new technology are. Getting clear information about the privacy implications of large-scale data collection and being able to answer questions about why public agencies are using it are critical to maintaining community trust.

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[2] A defined virtual perimeter around a site within a larger dataset.
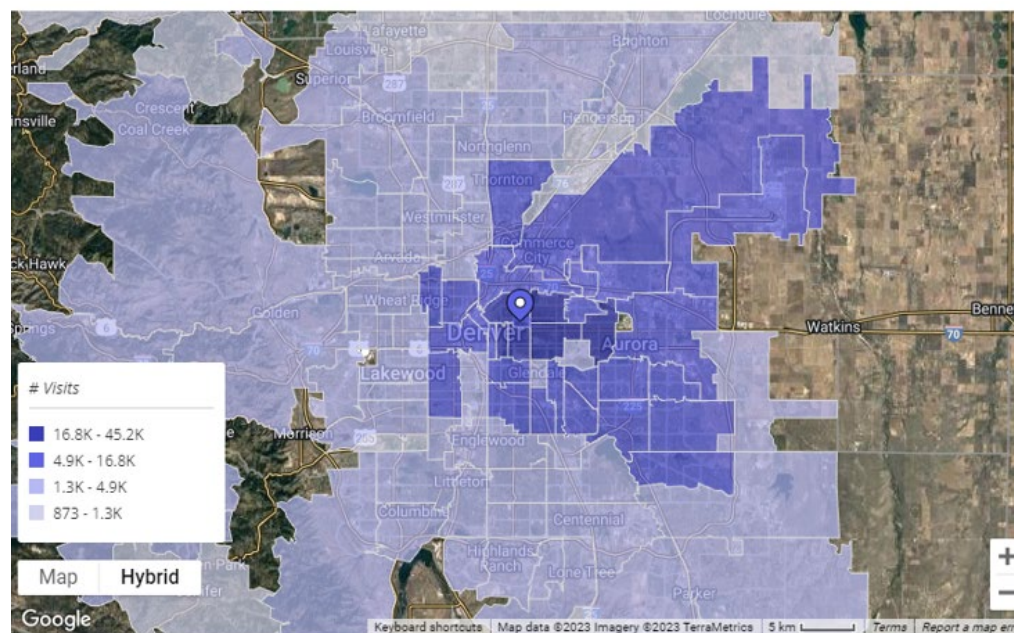
Census blocks around a Denver park, shaded by number of annual visits

Credit: Placer.ai via Denver Parks and Recreation

## Places: Assessing Facilities and Park Conditions

The application of technology also benefits one of the most fundamental needs for managing a park or system: an inventory of the land, facilities, and amenities. Most park systems once compiled this information on paper, then in spreadsheets. Today they track their inventory in a geographic information system (GIS)[3], allowing location and boundary information to be used in both visual presentation (mapping) and analysis. GIS offers the potential—through additional layers of data or details (metadata)[4] about locations—for tracking changes over time, real-time status checks, and future planning. However, GIS is only as useful as the quality of information added to the system.

It is critical to consistently update information in the system about new or improved features or aging and declining conditions. This is even more important because the software can store information about living systems, such as tree inventories and other habitat management details. Changes in these systems can be both rapid, such as storm damage, or slow, such as irrigation and plant choice changes resulting from climate change. The accuracy of GIS data may rely on the ability to quickly update from mobile devices or the integration between GIS and other technologies. GIS information can feed business intelligence (BI)[5] platforms to help visualize and further guide decision-making. Looking forward, this information can be projected in three dimensions, creating a

model of a site, facility, or even an entire city, into a tool known as a digital twin. For parks and other systems that primarily exist in physical spaces, an agency GIS is frequently the steward of this data library. A digital twin is an example of generative artificial intelligence (AI), which can be used to produce responsive text like chat, as well as images, videos, or new forms of data from existing data (such as processing information from enormous data sets like cell phone locations). The possible applications of generative AI are exciting, but concerns have been raised about its potential misuse to deceive or manipulate—a risk with any data that is used irresponsibly and without transparency.

Integrations (connections between two programs allowing them to feed information back and forth) can be an efficient way to create or update critical data layers. Some of these are inside larger software applications such as ArcGIS, the industry-leading GIS platform, created by Esri. Two of these Esri products, Field Maps and Survey 123, are designed specifically for data collection and verification. Each of them provides a direct connection to a GIS server (or the ability to work offline and upload later), adding and updating information about locations in a database. Park managers have used these tools for crowdsourcing on-the-ground issues, identifying accessibility barriers, and providing work orders to maintenance teams. Other products, including community engagement platforms and asset management systems, are also able to integrate with GIS databases, either directly or through compatible data formats.

With accurate data tied to location, these GIS databases can feed dashboards that display and break down the data in useful and flexible ways.
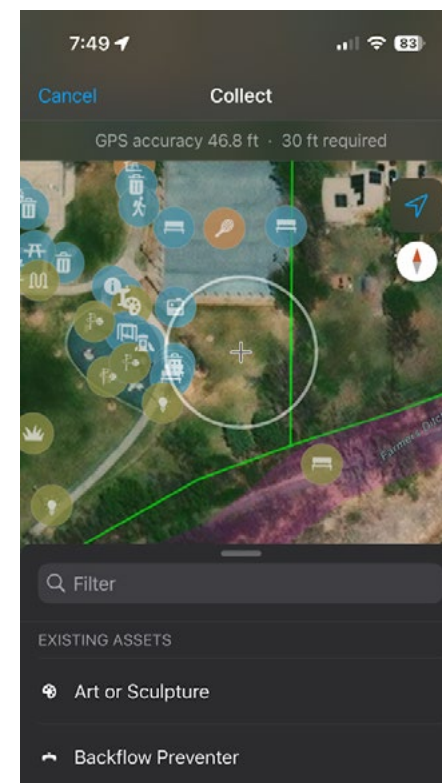
ArcGIS Field Maps allow on-site data collection

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[3] A computer-based system that captures, stores, analyzes, and displays data related to locations on Earth.

[4] A set of data that describes and gives information about other data.

[5] BI combines business analytics, data mining, data visualization, data tools and infrastructure, and best practices to help organizations make more data-driven decisions.

Using data for management transparency in Minneapolis

The Minneapolis Park and Recreation Board (MPRB) wanted to create more transparency for management and decision-making. So it formed a data insights team to help bring data into everyday management and major decision-making, from the staff level up to its board. This group is using both GIS and a data analysis platform called Microsoft Power BI to help process and visualize information about the city's award-winning park system. The BI, in this case, is an information management system that in some ways overlaps with GIS (or is fed information from the agency's GIS). Power BI is centralizing the key data about progress on the [Parks for All Comprehensive Plan goals](), [projects](), and [capital funding](). The dashboards create an at-a-glance and filterable/customizable view of the data, summarized in charts, on maps, and with tables. They are available to community members, advocates, and the MPRB's commissioners, providing transparency in decision-making. A major focus of this work is to better understand the equity implications of MPRB's decisions and funding.

Creating and updating these dashboards is one way the data insights team is moving the organization toward using data in day-to-day decisions. Team members are embedded within different departments at MPRB, helping each group contribute to centralized data while also supporting specific, group-focused analyses. Some of these efforts are as small as helping extract data from existing systems and teaching staff how to use the data to make or support a decision. The commitment of staff to integrating data ensures that everyone is working with the best available data and that the skills needed to explore and present the data are spread out across the organization.
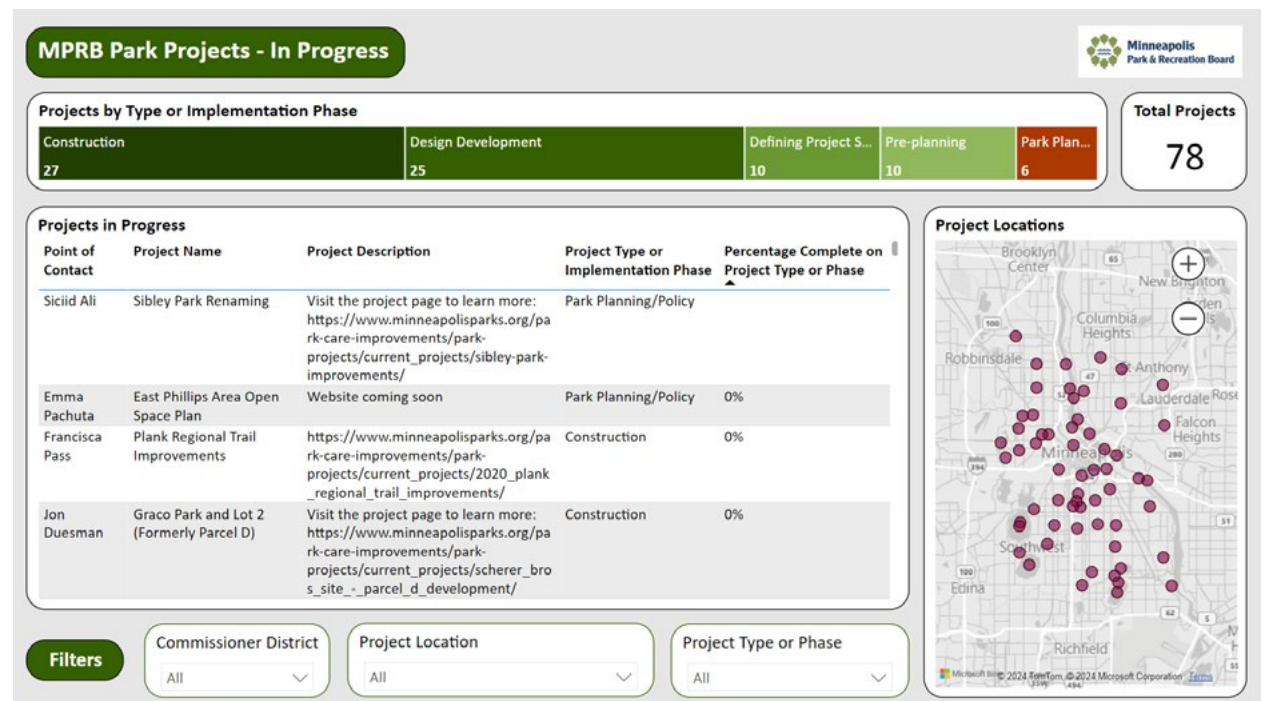
Dashboard detailing capital projects. Credit: Minneapolis Park and Recreation Board

# A digital twin for Miami's Underline

How can park managers deploy technology to make their facilities a laboratory for public space management improvements?

Innovation and technology testing are an explicit part of the Underline's purpose. This park in Miami, opening in phases, will ultimately be a 10-mile linear trail, park, and public art destination underneath a Metrorail line. Phase three is currently under construction, with a scheduled completion date of 2026. As this site has shifted from an idea to a half-mile proof of concept, toward a 10-mile complete corridor, the Friends of The Underline and many private and public partners have planned the infrastructure and designed the spaces that will ultimately help move people, provide them gathering spaces and places to play/exercise, and provide a variety of inspiring experiences.

Guided by a Technology Advisory Council and a Tech Master Plan, The Underline is applying many new solutions as a laboratory for other public spaces. One tool that is enabling more efficient operation as well as inspiring ideas for changes in The Underline, is the digital twin created from a detailed scan of the park; the overhead Metrorail line; and the buildings, plants, and many street, park, and trail features. This twin is more than just a picture—it is a digital 3D model that can be used to identify problems along the increasingly long corridor. Computer vision information (using computer analysis of

security camera feeds to identify movements and types of users) can be visualized in the twin to find heavy traffic areas or locations of dangerous situations, such as repeated collisions, or near misses, between cars and Underline users. Environmental sensors detecting rain, air quality, and other factors and repeated LiDAR (remote sensing used to build 3D models) drone flights can help manage plantings and landscape care, showing where plants are thriving or struggling and modeling the health of the landscape as the climate changes.

Both the MPRB and The Underline are learning how to make use of large quantities of data for communications and decision-making. The technologies that underpin these solutions rely on compatible and current data being available from a mix of sources. While technology can assist when park staff assemble and present information, these tools still are not a substitute for actual people asking critical questions to park-goers to inform their use in decision-making.
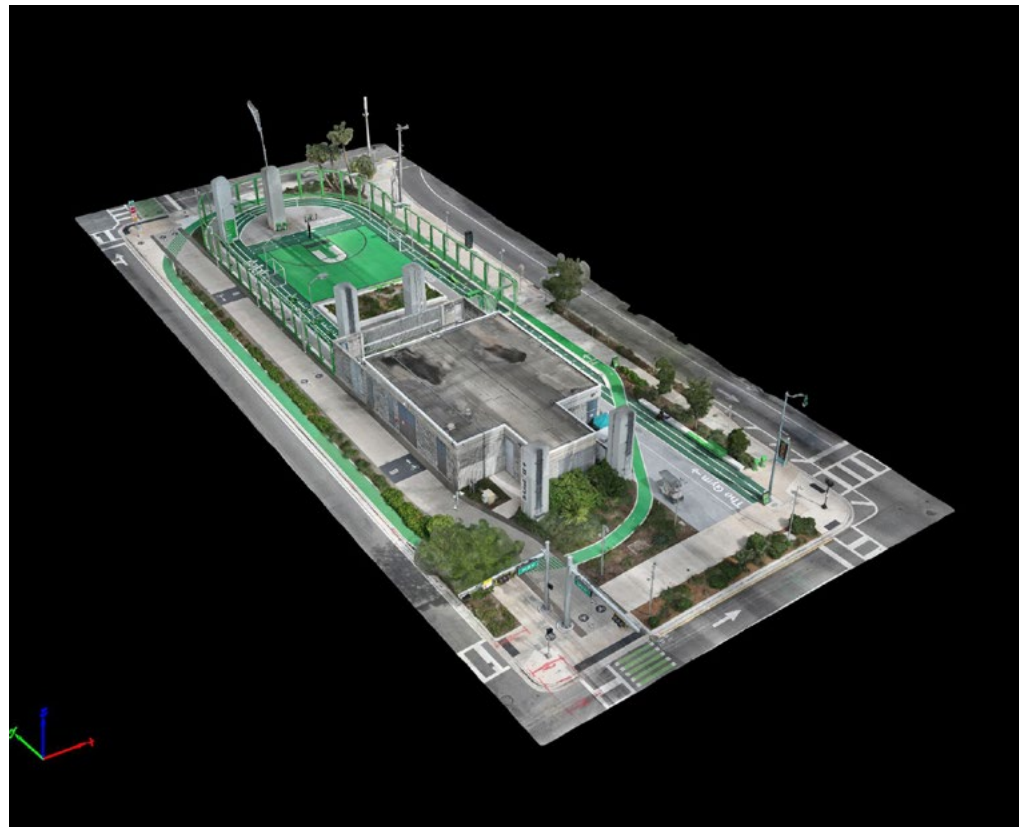
Image from the Digital Twin of the Underline

Credit: Friends of the Underline

Policy: Measuring Impacts and Benefits

For years, park agencies and advocacy groups have been touting research on the many benefits of parks, recreation, and natural spaces. These benefits include the value of urban trees, the health and wellness impacts of play, and the economic impacts of programming and nearby green space, among many others. The evidence base that supports the environmental, health, social, and economic benefits of parks continues to expand, but in many cases, local park managers have difficulty applying the outcomes of this research to specific investments in their communities. However, technology solutions (including computer vision and the Big Data platforms described above) show promise for ongoing evaluation of how people use public spaces. At the same time, government and advocacy organizations are providing technology-enabled tools for the public that are built on some of the same research.
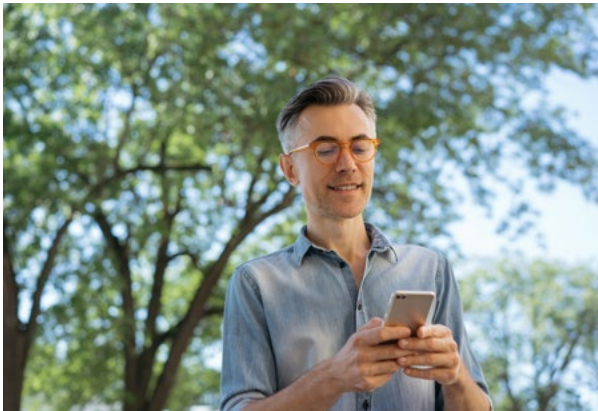
Understanding social interactions on Detroit's Riverfront Greenway

How can park managers recognize and measure activity and social interaction in parks? Big Data solutions provide the ability to approximate the total visitorship at large and small sites but require us to guess about what users do in the park. The Detroit Riverfront Conservancy, in partnership with the University of Michigan, utilized existing infrastructure (security cameras already installed along the riverfront) to begin identifying different types of park users and how they are interacting with the space. The camera feeds are monitored by computers that can detect people, recognize how they are moving, and show where they are gathering. With cameras and computers operating all day, every day, this kind of data collection has the potential to greatly out-scale the use of observational studies that in-person observers have done at relatively small sites, often at great expense. This information, analyzed over time, can help refine the design of programs and park sites, including what amenities are placed where. This allows the Conservancy to evaluate how well it is meeting the goals of a particular program or the entire riverfront.

After building the Archer Greenway, a vital link between neighborhoods and the riverfront, the Conservancy realized that raising awareness among local residents would be essential to maximize the usage of this $4.9 million investment. Multiple community engagement strategies were used to see which was most effective at activating this new greenway connection. One of the methods to reach residents was a mailer sent to households in the area. The second was placing an ice cream vendor along the trail. Data from the cameras (and computers) tracked the before and after traffic on the greenway and found that two weeks after the ice cream intervention, there was a 52% increase in users, while after the mailer, there was a 10% increase. Scaling this kind of data collection up to the riverfront as a whole, the Conservancy's goals to build community, increase the time spent on the riverfront, and encourage mental wellness are now measurable.
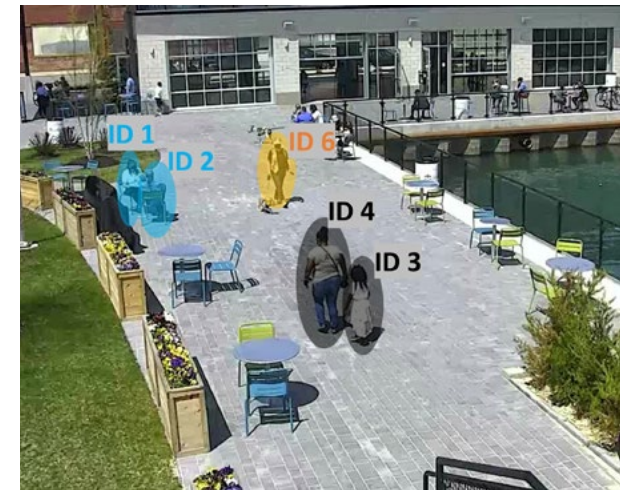
Processing video images from security cameras to understand how people use the space

*Credit: Detroit Riverfront Conservancy*

Using data tools to measure equity in parks

In many communities, policy has increasingly focused on equity in public investments. Establishing equity-based policies requires an understanding of the impacts of past decisions and current conditions. Evaluation tools are available at various levels of government to help clarify the local context from local models, from the City and County of Denver's Key Equity Concepts and Atlanta's Park and Recreation Equity Data Tool to statewide measures like CalEnviroScreen or Oregon's Social Equity Web App. Under the Biden administration, there were also federal tools such as the Climate and Economic Justice Screening Tool.

These tools generally aggregate demographic, socioeconomic, and health outcomes, as well as the access and proximity to key community assets like transit and parks. While not every city or park partner has developed a unique equity index or assembled the critical base data for their communities, state- and national-level tools can provide useful information for local jurisdictions. Furthermore, each of these tools can inform the information needed to illuminate equity disparities in any community. While each of these tools is available and updated as of 2024, changes in funding and policy priorities can result in neglect or even removal. It is always worthwhile to confirm the last time the underlying data was updated.

The Trust for Public Land (TPL), a national park advocacy organization, has developed ParkServe, a park access toolkit that currently covers 15,000 cities, towns, and villages—about 75% of the U.S. population—and over 145,000 parks. ParkServe helps identify gaps in park access, based on a 10-minute walk standard, and provides insights into the demographics within and outside these service areas. Although TPL's extensive database may not always reflect specific local conditions, ParkServe includes tools for reporting corrections and an "Evaluate" feature that lets users test the impact of proposed park locations on access and priority populations.

The ability to measure the impact of parks and recreation decisions is a powerful asset when engaging funders, elected officials, and the general public. Using data to support decisions or evaluate past changes can strengthen the case for parks and public spaces as essential community infrastructure.
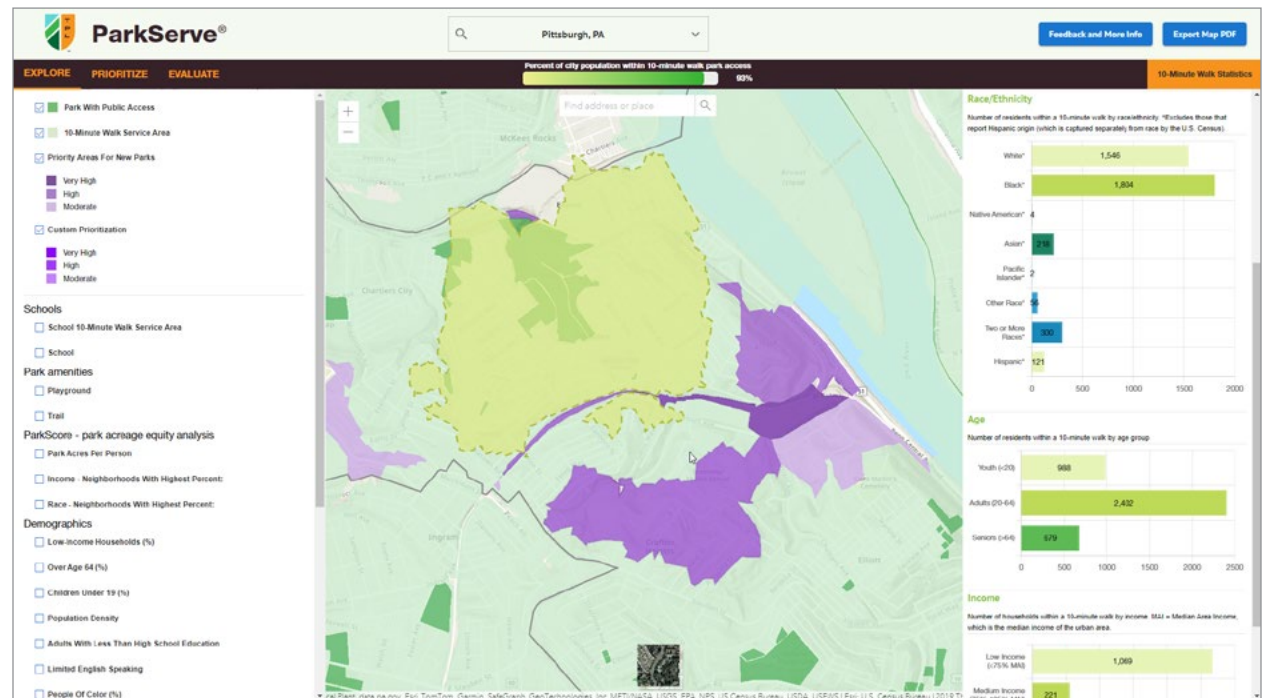
Using ParkServe to evaluate the impact of a potential new park

Credit: Trust for Public Land

APPROACH: ADVICE FOR ADOPTING NEW TOOLS

Many technology providers actively market their platforms and devices to parks and recreation agencies. This can be confusing for park leaders scouring the marketplace for help with their data goals. Applying the lessons learned from these examples, and the potential of the resources we share, we offer the following framework to provide guidance and advice for park leaders to approach their exploration of technology solutions.

When considering a particular challenge or problem that could be solved by new software, hardware, or a new technology process, a common mistake is allowing an available tech solution to make the decision for you. However, focusing on the problem first helps identify the best solution and makes it easier to explain why and how the technology was chosen for any audience, from elected officials to community stakeholders. Applying technology solutions for the purposes of better understanding people and places, as well as evaluating policy, can help ensure that technology solutions align with the organization's vision, goals, and values.

Defining the Problem or Challenge

Before considering any new technology, it is essential to understand the specific problem it is meant to address. The more precisely the problem and desired outcomes are defined, the more successful the solution is likely to be. These outcomes include not just implementation of the technology but buy-in of its use from all critical audiences.

Some 93% of U.S. adults support collecting data from monitoring systems to use for specific reasons, according to the National Recreation and Park Association. But public support levels can vary greatly depending on the specific problem and the kind of data needed to provide a solution.

A well-defined problem statement, aligned with organizational goals, will also help to avoid extraneous features, costs, and implications. For example, how does the use of this park match neighborhood demographics? Or how does park use change after implementation of an investment, rehabilitation, or program? Conversely, problem statements like, What information can we collect about park users, or can we assemble everything we know about our park system, programming, and maintenance? both suffer from a lack of clarity and an overly broad scope.

Engaging Community and Stakeholders

During the process of identifying and refining a problem, it is imperative to meet with individuals and organizations that will be interested and have a stake in how any technology solution is applied. This could be a general group of public space users or those with more specific needs, such as park users with disabilities, staff who will be asked to contribute to the solution, or an advisory group.

Technology solutions provided by private sector companies may have different goals from their park clients pertaining to issues like transparency. It can be difficult to ask the community and stakeholders to trust a new technology if they do not understand what it is for, how it works, or where and when it is in use. Developing problem statements in collaboration with the community

is an excellent way to keep the exploration relevant. Staying focused on the needs that stem from that exercise will help identify questions to ask potential solution providers. Starting this engagement at the beginning of considering any new technology solution will help build trust and avoid surprises during implementation.

However, this step is not the end of that engagement. Following through with community partners about how their input and concerns were addressed, and ensuring notification and transparency in what data is collected and who has access to it, will help build and sustain that trust.

Identifying and Evaluating Possible Tools

In many cases, some general research on technology solutions will turn up more than one option to consider. A good place to start in making the final decision is with colleagues and partners working on similar efforts, such as planning, design, or community engagement. Asking how other agencies or divisions of your organization have addressed similar concerns may uncover not only suggestions but also tools that your organization may already subscribe to. Some categories of technology can be found in organized lists, such as Participedia, a crowdsourced listing of community participation and democracy tools. Once an option is identified, searching for similar platforms can help with exploring differences between available products.

It is also important to explore the available data collection processes and policies inside your organization to inform questions to potential providers and ensure that the selected solution is viable. Most relevant policies (that we are aware of) will be at the local level, but some locations or topics may fall under state or federal guidance, such as the California Consumer Privacy Act, federal drone activity limitations, and the American Privacy Rights Act of 2024 (introduced but not passed).

Some examples of local and state policies to look for include:

» Public surveillance

» Privacy and data use

» Artificial intelligence (AI) oversight and use

» Signage

» Digital and physical accessibility

» Purchasing requirements

When interviewing platform providers, relevant questions will vary based on the type of technology you are discussing. Some solutions may include data collection, or take up physical space, but the most important questions are often not going to be visible to the public. The list below provides a starting point for developing relevant questions.[6] Providers working with the public sector should be able to quickly respond to these types of questions and provide documentation of the details, which may need to be reviewed by either legal, risk management, or IT staff.

» How long has this platform or service been offered? How long has the company existed?

» What are the privacy and data security policies/practices of the platform?

- Will collected or provided data be used for other purposes, such as AI training or marketing?

- Will personally identifiable information be stored in the service?

- Who will have access to the data?

- Will the data later be sold to third parties?

» What are the accessibility standard (WCAG) requirements or aspirations?

» How are multiple languages handled in presenting and capturing information from the public?

» What are potential unintended consequences of this technology?

- Could it introduce bias into decision-making?

- Are there civil liberties or privacy impacts?

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[6] Special thanks to Jacqueline Lu of Helpful Places for contributions to this list of questions.

» Does the solution take up physical space in a park?

- Will it impact accessibility?

» What is the cost and subscription model?

- How many users can access the tool?

- Are there limits on use or features?

» What internal capacity is needed to make use of the tool?

- Is there training included in the subscription?

- Are there needed skill sets that are not met by existing staff?

- Who will manage or track this technology/subscription?

» What are the data sources, and how often are they updated?

» Who owns the raw data?

- Can we export our data in a usable form?

- Can the data be integrated into existing systems?

Throughout these conversations, this guiding question can be helpful: What is the simplest solution to address the problem we have identified?

Implementation: Budgeting, Approvals, and Training

Finalizing a preferred solution will likely involve some type of approval or purchasing process. Along with the details of the technology solution, include information about the anticipated staff training time, adjust processes or workflows, and familiarize your team with what this adds to your toolkit. Depending on how this solution is integrated into existing workflows (such as work orders or evaluation processes), it will take time to get people up to speed, and you may need to plan for overlap between the old and new systems.

Transparency: Communicating About Technology in Use

In physical spaces, technology can be more or less visible depending on its purpose and the required hardware. With some tools, such as video cameras, visibility of the technology is part of the purpose. In other cases, tiny sensors, radios, and other devices are completely hidden. When considering the installation of hardware, visible or not, there is an opportunity to clarify the purpose of the technology and provide a chance for interested or concerned users to learn more. Quickly and effectively showing the types of technology in use, how it is implemented, why it is being used, and where you can learn more builds and preserves trust between the public and park managers.

An emerging standard for clearly communicating technology use is the Digital Trust for Places and Routines (DTPR). In practice, this looks like a cross between a wayfinding system and standardized labeling akin to nutrition labels on foods. The balance DTPR looks for is quick and understandable notification along with the opportunity to learn more about the specifics. Not everyone will be involved in the selection of a technology; by ensuring this kind of visibility, community trust-building can extend to a wider set of users.

Review: Updating and Adapting

Before a chosen technology solution is in place, it is worth giving some thought to performance review, updating, and obsolescence. While the criteria explored above include provider stability and the ability to export your agency's data, it's imperative to remember that technology platforms continuously change, so the data requires updating.

The data included in any platform or tool, whether it is your own or provided for analysis by the platform, will need to be updated to remain relevant. Thinking ahead about the process to review and update data, and understanding the update cycles of outside data (such as census and American Community Survey data, which form the basis of many tools), will help answer questions about the accuracy of results and avoid you abandoning tools due to out-of-date information.

You should have a plan to review data for every technology solution to see if the platform is accomplishing the intended purpose and what has changed. This can be a recurring process, such as an annual review or a longer-term review of relevance. Questions that can inform this kind of review include:

» Does the problem we defined still exist?

» How has this platform contributed to a solution?

» Are we actively using it?

» Has the platform become useful for other purposes, groups, or divisions?

» What changes have been made to the platform? (Changes can happen without any visible evidence, such as updates that add new functions.)

» Has the pricing or user model changed in ways that make this easier or more difficult to use?

» Is the data included still up to date and relevant to our needs?

» What is the data update cycle for critical information used for evaluation?

Planned obsolescence (technology designed for a limited lifespan), business failure, or acquisition can all be causes for ending the use of a particular technology or platform. If any of these occur, this review process can be restarted by revisiting the original problem to confirm that it is still relevant before re-exploring potential solutions.

The process of adopting new solutions is iterative, and no one solution is going to solve all problems. Working through this process creates a foundation based on organizational policy and practices, supporting clarity in decision-making and maintaining trust with community stakeholders. After moving through this process once, subsequent iterations will be shorter and easier and will help when it comes time to answer questions from any audience about what you were trying to accomplish and how well you did.

ACKNOWLEDGEMENTS