REVERE
Pocket Park Site Suitability Analysis

ACKNOWLEDGEMENTS

MAPC Officers

President Keith Bergman, Town of Littleton
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MAPC Staff

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Lily Perkins-High, Analytical Services Manager, Data Services
Caitlin Spence, Planning and GIS Analyst, Data Services
Axum Teferra, Research Consultant to MAPC

City of Revere Lead Partners

Techrosette Leng, City Planner, Office of Strategic Planning and Economic Development
Dimple Rana, Director, Healthy Community Initiatives Department and Co-Leader of Revere on the Move
Vanny Huot, Neighborhood Organizer, Healthy Community Initiatives Department

Municipal and Community Partners

Name	Title	Affiliation
Kyla Alterman	Revere Community Engagement Manager	The Neighborhood Developers
Viviana Cataño	Program & Communications Manager	MGH Revere CARES Coalition
Sylvia R. Chiang	Director	MGH Revere CARES Coalition
Charles Giuffrida	Assistant Director	Parks & Recreation Department, City of Revere
Kathleen Heiser	President	Beachmont Improvement Committee
Reuben Kantor	Director	Office of Innovation and Data Management, City of Revere
Angel Santos Burres	Director, Outdoors Rx®	Appalachian Mountain Club

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INTRODUCTION

Pocket Parks

Pocket parks, also known as minipark or vest-pocket parks, are urban open space at the very small scale. Usually only a few house lots in size or smaller, pocket parks can be tucked into and scattered throughout the urban fabric where they serve the immediately local population. These parks tend to act as scaled-down neighborhood parks, and often try to meet a variety of needs. Functions can include small event space, play areas for children, spaces for relaxing or meeting friends, taking lunch breaks, etc. They can be a refuge from the bustle of surrounding urban life and offer opportunities for rest and relaxation.

In densely developed urban neighborhoods with limited options for developing larger-scale parks, pocket parks, and a system of these can be attractive options for meaningfully increasing outdoor public space and recreation opportunities for residents. Vacant or otherwise unused public land may be used for creating pocket parks, which can also serve to clean and beautify public spaces. Low-income neighborhoods that are densely populated, and therefore have high demand for open space stand to benefit the most from increased open space amenities.

Figure 1: Philadelophia | Roxborough Pocket Park First Friday Event Held in June 2018 | source https://roxboroughpa.com/enjoy-the-outdoors/roxborough-pocket-park

Pocket parks can deliver a range of ecological, social, and health benefits. Natural, pervious surfaces help to mitigate stormwater runoff and encourage water infiltration; vegetation can create habitat for local species, particularly birds; tree canopies can serve to shade and cool park visitors, while also sequestering carbon. Pocket parks can encourage neighbors to meet one another and build relationships. Where neighbors are using public spaces more, this can also contribute to a sense of neighborhood vibrancy and investment in public spaces. The presence of actively used public spaces has also been correlated with increased safety and crime reduction. And, where pocket parks encourage people to get outdoors, they encourage physical activity, can facilitate stress reduction and improve mental health.

The range of co-benefits of pocket parks support goals for climate resilience as they relate to increasing ecological and social resilience.
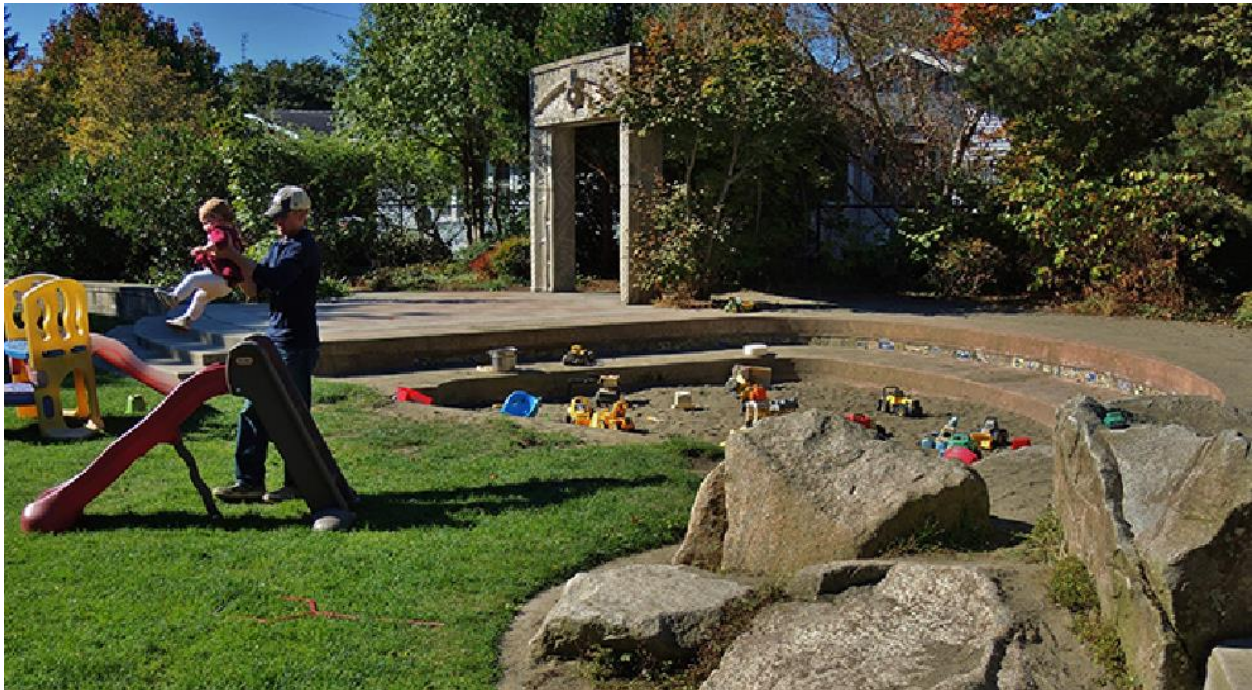

Figure 2: Seattle | 6th Avenue NW Pocket Park | Source: http://www.seattle.gov/parks/find/parks/6th-avenue-nw-pocket-park

PROJECT OVERVIEW

Project Summary

The City of Revere Office of Strategic Planning and Economic Development partnered with the Metropolitan Area Planning Council on this project, to identify and map sites suitable for pocket park development in Revere. The Pocket Park Suitability Analysis supports strategic pocket park development that promotes health equity and climate resilience, and on sites that have physical characteristics that make them suitable. It was of particular importance to Revere partners that equitable park access and associated health benefits be emphasized in the analysis. The analysis results can also be used facilitate achieving the City's broader goals for climate resilience, public health and open space recreation.

The project applied various suitability criteria to sites in Revere and produced a ranked list of the sites. The ranked sites can serve as a guide for Revere to further investigate the most promising locations, to assess them for additional features (i.e. proximity to potential users, availability of site, size of site, potential uses or other features) and confirm their suitability. This additional investigation should be done through site visits and coordinated discussion.

The appendices include a summary of community engagement and feedback since the completion of this report. These include the Master Plan Community Forum, held on May 8, 2019 and the Revere Cares Coalition Meeting, held on June 25, 2019.

Partner Roles

City of Revere lead partners included the Office of Strategic Planning and Economic Development's Techrosette Leng, City Planner, and the Healthy Community Initiatives Department's Dimple Rana, Director, and Vanny Huot, Neighborhood Organizer. These partners coordinated provisioning local spatial parcel datasets, convened municipal and community stakeholders to inform the project, and were in regular communication and coordination with MAPC and Revere stakeholders to ensure a productive project.

The project was supported and informed by community and municipal stakeholders with a range of expertise in conditions and needs in Revere, community development, planning, parks and recreation, data management, community organizing, among other expertise areas.

The **Metropolitan Area Planning Council** Public Health Department and Data Services Department led the project, coordinating execution of project tasks including research, facilitating partner and stakeholder meetings and soliciting and incorporating feedback, developing the methodology and conducting the analysis, and completing the final report.

Project Scope

The project scope included the following summary tasks:

1) **Research** Literature review of pocket parks; Research of funding sources for pocket park implementation
2) **Develop Methodology** Evaluate comparable analyses; determine criteria and indicators for pocket park site suitability analysis; determine weight of criteria and indicators; draft and finalize methodology for conducting pocket park site suitability analysis
3) **Collect Data** Identify and prepare spatial datasets for use in the analysis (i.e. tree canopy coverage, slope, open space access, flood risk, temperature); solicit and prepare spatial parcel datasets of publicly owned parcels in Revere
4) **Conduct Analysis** Conduct the analysis
5) **Write Report** Synthesize and present research and findings in a report
6) **Engagement** Engage representatives from the municipality to inform developing the methodology, and provide local data needed to conduct the analysis; prepare and disseminate results

Description of Engagement and Feedback

MAPC and the City of Revere partnered to hold two meetings with stakeholders to discuss the Revere Pocket Park Site Suitability Analysis Project and receive input and feedback.

- **Meeting 1, January 18, 2019** MAPC introduced the concept and examples of pocket parks and presented an overview of the project scope and objectives. Participants provided feedback on the proposed methodology. Participants included Techrosette Leng, Dimple Rana, Vanny Huot, Kyla Alterman, Viviana Cataño, Charles Giuffrida, and Reuben Kantor.

- **Meeting 2, February 6, 2019** MAPC reviewed the pocket park concept and examples, and provided an overview of the project scope and objectives. MAPC also presented the modified site suitability analysis methodology. Participants provided feedback on the methodology. They came to consensus about the value of measuring open space access in the analysis and requested that this be given greater weight in the analysis. Participants also reviewed the printed maps of the municipally-owned parcels, and provided comments on them based on their knowledge of the neighborhood conditions and needs (see the Appendices for the comments on these maps). In this meeting, participants also requested that key medians, rotary islands, and stairs be included in the analysis; the City of Revere followed up by providing the spatial data for these sites.

In addition to these meetings, MAPC and the City of Revere partners were in email and phone communication during the project.

GUIDING FRAMEWORK

Informed by the literature review, the Pocket Park Site Suitability Analysis established the following framework to assess suitability of municipally owned land for pocket park development.

Health Equity

Health Equity is the condition in which everyone has a fair and just opportunity to live a healthy life. Embedded in the concept is a recognition that health issues are experienced disproportionately more by some, particularly people in poverty and people of color. Social, economic, and physical conditions into which people are born, live, work, play, and age have a substantial impact on health. As such, achieving health equity requires removing barriers through a range of strategies.

In this analysis, the Health Equity Theme (discussed in detail on page 35) enables equitable improvements to and expansion of pocket parks, and promoting associated health benefits. It gives greater importance to potential pocket park sites in areas which have low open space access and sites that would serve environmental justice populations. This ensures pocket parks are prioritized where residents have the greatest need and where health benefits will be most impactful.

Climate Resilience

Climate Resilience describes the capacity of ecological and social systems to prevent, withstand, respond to, and recover from disruptions caused by climate impacts. In the Metro Boston area climate change is already effecting communities. Temperatures are increasing, and we expect to have more heat waves and milder winters. The region is experiencing increased heavy and erratic rain- and snow-fall and flooding in recent decades – a trend expected to continue. And, coastal communities, like Revere, are experiencing rising sea levels. These changing conditions compel communities to act to bolster resilience of ecological and social systems. Pocket parks can be one component of a broader strategy to do so.

The Climate Resilience Theme (discussed in detail on page 35) enables prioritizing pocket parks where they might have the greatest impact on providing on-site climate mitigation benefits related to local stormwater retention and heat mitigation. Because of their characteristically small size, the climate mitigation benefits are understood to be hyperlocal, limited, and important as integral to comprehensive climate resilience efforts.

Physical Characteristics

Pocket parks serve a variety of functions and users across the United States, and they are highly adaptable based on community needs and space constraints. While there is great variability among them, many communities prefer some common aspects of pocket park sites, surroundings, and characteristics. Among these are:

- **Ownership**: Municipally owned
- **Site characteristics**: Vacant properties, impervious surface
- **Size**: less than .5 acre
- **Service area**: up than ¼ mile
- **Environmental features**: includes trees
- **Access and safety**: visible from the street, and have two or more entry points
- **Abutters**: residential or commercial
- **Surroundings**: near schools, playgrounds or other potential users

The Pocket Park Site Suitability Analysis was conducted starting with a selection of municipally owned vacant parcels. The Physical Characteristics theme of the analysis (discussed in detail on page 35) characterizes additional suitability conditions related to site environment and accessibility, and enables prioritizing sites for the suitability of these characteristics.

ALIGNING WITH MUNICIPAL AND REGIONAL GOALS

Revere Open Space Plan, 2018-2025 Update
In 2018, Revere updated its open space and recreation plan (OSRP), which will guide municipal investments in and maintenance of open space features in the City. The plan seeks to offer opportunities for improving and adding to the stock of open space and recreation land in the city, as well as for developing programs that meet community goals. The objectives of the OSRP align with the objectives of the pocket park site suitability analysis, particularly the following:

> *1.5: Create new recreational facilities that meet specific needs as opportunities and funding become available.*
>
> *1.6: Ensure that open space and recreation planning incorporates environmental justice and equity considerations.*

MetroFuture
MetroFuture is MAPC's plan for Greater Boston to better the lives of the people who live and work in the region between now and 2030. Thousands of people collaborated to create a bold, forward-looking and achievable vision for future development and preservation. The plan outlines priorities and strategies for advancing smart growth goals and investing in the region's residents.

Relevant to the Revere Pocket Parks Site Suitability Analysis project, MetroFuture includes the following goals and related sub-goals:

> 3. *Healthy Communities: Residents will be safe, healthy, well-educated, and engaged in their community.*
>
>   3.3. *All neighborhoods will have access to safe and well-maintained parks, community gardens, and appropriate play spaces for children and youth.*
>   3.5. *Most residents will build regular physical activity into their daily lives.*
>
> 6. *Healthy Environment: Natural resources will be protected thanks to a strong "environmental ethic."*
>
>   6.5. *The region will have better air quality, both indoors and out.*
>   6.10. *A robust network of protected open spaces, farms, parks, and greenways will provide wildlife habitat, ecological benefits, recreational opportunities, and scenic beauty.*

Revere Master Plan
The City of Revere is currently conducting a Master Plan process with MAPC. The data, analysis, and results of the pocket park project will be shared and integrated into the Master Plan process.

LITERATURE REVIEW

Literature on pocket parks is only beginning to emerge, so this paper identifies trends observed in a few studies and in local park plans. Pocket parks, sometimes called mini-parks, parkettes or vest-pocket parks, are usually the smallest size classification for parks. The most ubiquitous features that differentiate pocket parks from a standard public park are a) size and b) a smaller service area (typically serving a radius of a few blocks). Pocket park literature and park design guidelines, while limited, largely define a standard pocket park size as falling between a quarter and half an acre, and usually abutting residential and/or commercial buildings. There is some discrepancy between how different sized cities distinguish a pocket park from their other parks; it is common for less dense and more sprawled cities or towns to assign higher size limits for pocket parks.

Due to limited land in urban areas, it is challenging to create new quality public recreational spaces (National Recreation and Park Association (NRPA)). Pocket parks serve as a suitable solution for producing green spaces for neighborhood use, and are often the simplest option for local governments looking to generate better access to park space. The National Recreation and Park Association especially encourages local parks and recreation departments to explore conversion opportunities for abandoned and vacant lots and rooftops.

While pocket parks are usually sized to have an area of a quarter- to half- acre, the neighborhood service area of pocket parks is typically a quarter-mile radius of the park, or up to a four-block radius (NRPA). Research shows that pocket parks should optimally be within a 10-minute walk for users and accessible without a car. However, People Places discovered that most people will only utilize a pocket park that is within a one to two block radius, and very few people are willing to walk more than four blocks unless it is for a dog park (Blake).

Focusing on functionality more than the aesthetics of pocket park design can help ensure that the ultimate space feels familiar to its abutting neighborhood and is therefore well-utilized (Armato 2017). Park function is also more important than size for pocket parks (LeFlore 2012). LeFlore's research categorizes pocket parks into 3 distinct types: active, passive and bonus.

Active: Active parks contain elements that encourage physical activity. A community garden would be considered an active type of pocket park (NRPA and LeFlore 2012). Other examples include a half-basketball court, playground or dog park.

Passive: Passive parks do not have a defined use, but are typically spaces for sitting. Examples include an area with benches, a sculpture or a fountain.

Bonus: Bonus parks are spaces that were not initially planned for park development, but became a de-facto park. This type of a park usually buds from a new private building development that ended up having spare or underutilized space that could easily be made into a pocket park. These spaces are often less than a tenth of an acre in size. Bonus parks are usually passive in function.

Co-benefits

Pocket parks bring numerous benefits to its users and neighborhood, among them could include: improvements to local ecology and wildlife restoration; reductions in traffic and pollution; and increased cultural spaces, safety, community-building, and health and fitness options (NRPA). These benefits often coexist in pocket parks, and can be harnessed in both urban and suburban settings. Values and priorities must be identified and central to the project at the early stages of planning and development, if to fully realize a pocket park's full co-benefits.

Equity

Parks are not equitably located within cities. Pocket parks, in particular, have the ability to bring green spaces to formerly underserved neighborhoods. These spaces can also serve as a backyard for city residents who do not have any personal yard space (LeFlore 2012). In many cities, there exist inequities with access to nature. Rigolon and Flohr's research shows that low-income neighborhoods have the least access to park space, while high-income neighborhoods have the greatest access to park space (Rigolon and Flohr 2014). Those differences are exacerbated when you include park amenities. In Los Angeles, for example, research found that park funding tends to exacerbate neighborhood inequity because more funding is fed into parks in wealthier neighborhoods.

There are also property value changes that must be anticipated and further examined with new parks. In Los Angeles, property sales increased with proximity to pocket parks. In general, in urban areas, property value increases with closeness to open space (Ferguson et al. 2014).

Health

Research shows that regular access to nature improves physical, cognitive and social development. Despite this, studies have observed decreasing exposure to nature for children in developed countries (Rigolon and Flohr 2014).

In recent years, there have been philanthropic steps to invest in and improve general park conditions, as a way of encouraging outdoor play and activity for health (Cohen et al. 2014). In contrast to larger public parks, neighborhood and pocket parks have limited facilities, few programs, and do not have employees on site. In a Los Angeles study, children and teens were the main users of pocket parks. Though from observation, there was more sitting observed at pocket parks than at neighborhood parks, which in Los Angeles are 15-50 times larger than pocket parks. Because there is not space for a sports field in pocket parks, there is less space for vigorous physical activity; however, commuting by foot or bike to pocket park destinations was observed of users (Cohen et al. 2014). Parks are greatly necessary to encourage physical activity for low-income communities. Even if a person is sedentary once at the park, the pathway to the destination often creates some physical movement. Seniors may need more programming to be encouraged to use parks, as a Los Angeles study showed low attendance from this population (Cohen et al. 2006). If there were an intentionally networked pocket park systems with various park functions and features, they could be attractive to users who would like to explore a range of park features.

In a survey of pocket park users in Los Angeles, issued pre- and post-development, these parks may lead to more physical activity if the spaces are considered "attractive and safe destinations" (Cohen et al. 2014).

Pocket parks that serve a small radius also have the ability to increase social capital and community ties, which can contribute to the feeling of safety and climate resilience as well. In Los Angeles, community gardens have been most effective at building community, and leading to other local organizing activities (Ferguson et al. 2014).

Safety

A Los Angeles study found that more people felt safe at pocket parks than at larger neighborhood parks (Cohen et al. 2014). A University of Pennsylvania School of Medicine study determined that pocket parks reduce crime when converting vacant lots into parks. Residents express reduced stress and increased exercise with the existence of these parks. The study discovered that pocket park access led to lower mortality rates, as well as fewer physical and mental health complaints (NRPA).

Environment and Climate Resilience

The ecological benefits of pocket parks are hyper-local. The immediate park area is where you can perhaps experience alleviation from heat impacts or improved air quality, though these benefits may not extend far beyond the park perimeter. The larger-scale climate and environmental benefits of pocket parks are not well studied or documented. However, as these parks proliferate, the ecological and climate impacts should be monitored and examined to inform optimal pocket park site selection and development strategies.

Due to the small size of pocket parks, current literature asserts that the climate benefits (both mitigation and adaptation) that can be reaped by larger parks cannot be achieved, in particular carbon sequestration opportunities, large scale stormwater retention and significant temperature regulation (Byrne and Jinjun 2009). There are climate resilience opportunities at a micro-scale, but larger greenspace interventions would still be needed to address long-term climate impacts and cannot be substituted by pocket parks.

Ecological functions of pocket parks may also be limited since these spaces are usually designed to attract significant foot traffic (Blake). However, new benefits could be derived through conversions of properties with grey infrastructure (i.e., paved areas) into revived green infrastructure-filled (i.e., vegetated, with native plants) land.

Pocket parks in a city are usually disaggregated and not coordinated. A positive ecological impact could be made if improvements are made to connectivity, such as placing pocket parks alongside or in an integrated way with greenways or bike paths. If better integrated and widespread, pocket parks could bring greater far-reaching environmental improvements. For example, if pocket parks become more numerous and connected, people may be encouraged to walk instead of drive, which could reduce greenhouse gas emissions from vehicles, while also positively impacting health. Additionally, pocket parks could alleviate the demands on larger parks, making them better able to provide their own benefits for wildlife or other ecological needs (Blake).

Pocket parks can also reintroduce small wildlife, in particular birds, by strategically planting attractive flora. Though if the intention is to create an inviting habitat for wildlife, it is critical to take park lighting into account that is not disruptive to wildlife circadian rhythms. Introducing plants could also improve hyper-local air quality and mitigate the effects of urban heat island effect. Adding water fountain features to pocket parks is additionally a growing method to alleviate extreme heat days. Literature on the utilization of pocket parks to manage stormwater was not widely available.

Ownership and Maintenance Models

A vast number of pocket parks around the country sprouted out of pressure from community groups to have more open space in urban areas (Blake). Various ownership and maintenance models exist, though often, a municipality will purchase and own a property, but produce a memorandum of understanding that a foundation or local organization will maintain the park. Their small size makes it easy to create a pocket park, so it is common for pocket park development to be led by non-governmental organizations, such as community groups, private entities or foundations (Blake).

For example, Keep Indianapolis Beautiful (KIB), a local nonprofit focused on creating and cleaning up Indianapolis parks, has a program called Project GreenSpace that works with neighborhood groups to transform vacant and underused lots into pocket parks. In addition to collaborating on pocket park development, the organization provides funding to assist with maintenance and clean-up.

It is also increasingly common for developers to add pocket parks on their private properties. Due to the local permits needed for these parks developments, municipal governments have the leverage to demand conditions that make privately-developed parks publicly accessible. Optional open-space provisions are commonly available in zoning for private developments, but LeFlore makes the case that publicly accessible spaces should be mandatory. A compulsory measure is useful, because otherwise most developers avoid creating parks as a result of the necessary maintenance (LeFlore 2012).

The most common hurdles for developing pocket parks include: limited funding and capacity, unfamiliarity with pocket parks by the broader public, and a lack of volunteers for park maintenance (NRPA). Under-maintained parks can then attract negative activities, which can subsequently deter use of the space by the community (LeFlore 2012).

Pocket Park Best Practices

The City of Philadelphia, Pennsylvania, has demonstrated unparalleled leadership in the growth of pocket parks. Sixty pocket parks were created in Philadelphia just between 1961 and 1967. The average size of a park was 3,000 sq. ft. or less than one-tenth of an acre. These parks were typically placed on vacant or abandoned lots in low-income communities. The planning and development processes included community engagement and public input in design and construction (Blake).

Today, there are pocket park features that are widely considered best practices across the country. Having seating options, whether modular or in the form of benches is important and a

simple feature that makes a park more inviting. Using thoughtful flora that connects people to nature, and may have co-benefits of introducing small wildlife. Trees in particular can also support the creation of a comfortable environment by providing shading options, minimizing extreme heat or winds, providing shelter from rain, and improving acoustics in the park area (LeFlore 2012). Pocket parks should also be visible from the street to attract users and create a feeling of safety. These parks are preferable in areas with significant foot traffic (Blake).

According to LeFlore's research, ideal locations for pocket parks are: 1) publicly accessible spaces that are privately owned, 2) spaces leftover from a development, and/or 3) vacant properties.

Site Considerations

Unlike some open spaces, pocket parks are typically versatile and can fit into different types of environments. The key feature and appeal of pocket parks is the small area needed for development. It is this characteristic that also makes pocket parks a simple public space to replicate and proliferate across a jurisdiction. The defining elements that make a site appropriate for pocket park development largely depend on the intention for the public space and set values of the abutting community. Once a site is chosen, these small park spaces are typically malleable to the needs of the adjacent community.

In a scan for local governments that have a pocket park strategy or goal, there were a dozen cities and towns that surfaced as explicitly addressing pocket parks (mostly within a general park plan): Aurora, CO; Boulder, CO; Cobb County, GA; Erie, CO; Fort Worth, TX; Fresno, CA; Nashville, TN; Philadelphia, PA; Salem, OR; Seattle, WA; Tyson, Fairfax County, VA; Visalia, CA.

Trends observed among the 12 studied communities:

The site selection themes that do appear somewhat consistently for pocket parks are the park size/area and the service area radius. Among the 12 aforementioned communities, most define a pocket park size as being between a quarter and one acre in size. The intended service area radius is largely within a quarter mile.

There is a consistent desire to have pocket parks located in geographies currently or historically underserved or lacking public green space. When prioritizing sites, areas with greater density are ranked higher. Local governments also seek to stretch their public dollars, so many communities give preference to locations near complementary sites that could also benefit from a pocket park, such as school or playgrounds. In theory, these public assets could draw users to pocket parks, while the parks themselves may create a needed added amenity. To ensure the use of pocket parks and safety for park users, local governments call out the need for parks to be visible from the street, as opposed to being hidden from foot traffic. Similarly, it is important that these parks connect the abutting neighborhood and have two or more park entry points, because these create movement flow and avoids users from feeling confined. Lastly, there is a broad wish that pocket parks brings ecological benefits. Potential ecological benefits vary widely by locality, so many plans are vague in defining ecological benefits.

Beyond these features, there is not much uniformity among local governments' priorities for pocket park site selection. Philadelphia has the greatest number of criteria that it pursues, based on its general goals to advance equitable park access, improve public health and increase climate

resilience. Among those criteria include selecting sites that: could support stormwater management, currently have high impervious surface area, and are vulnerable to urban heat island effect.

Unique Site-Selection Spotlights:

Site should support stormwater management objectives: Boulder, CO

Boulder encourages the use of low-impact development techniques to support its stormwater management goals of reducing runoff and urban pollutants. The priority is to create pervious surfaces that can increase water infiltration, however in some cases surface detention ponds are necessary. In these cases, the City suggests that the site be a pocket park or landscape buffer when not holding water.

Site should prioritize locations in the 500-yr floodplain: Philadelphia, PA

The City's park plan prioritizes sites that have impervious surface and can be replaced with porous cover within the city's 500-year flood plain. Philadelphia had success in 2006 when it made significant green infrastructure upgrades across the city and captured 17 million gallons of rainwater.

Site should optimize sun and shade conditions: Tyson, Fairfax County, VA

The design guidelines for pocket parks suggest a study of a site's and surrounding buildings' microclimate, because the conditions of sun and shade can influence comfort and use of the space.

Site should be located in communities with high impervious surface: Philadelphia, PA

Philadelphia gives priority to sites within census tracts that have high impervious surface and feed into a combined sewer system.

METHODS

Summary

The Pocket Park Site Suitability Analysis methodology was developed and implemented by MAPC, and incorporated input and data from the City of Revere and partners. Using a spatial dataset of municipal land, the analysis assessed suitability of the municipal sites for pocket park development across several demographic and environmental variables. A preliminary analysis was conducted first without giving greater preference to any variable over another. Three subsequent analyses gave greater weight to some variables over others to prioritize 1) Health Equity and 2) Climate Resilience benefits, and 3) Physical Characteristic suitability of the municipal sites. This section describes the data and processes for conducting the Pocket Park Site Suitability Analysis in detail.

Municipal Land Dataset

The pocket park site suitability analysis was conducted using municipally-owned and vacant parcels identified by the City of Revere partners. Revere partners provided two excel files and one spatial dataset. The first excel file includes municipally-owned vacant parcels, and 224 entries. The second excel file includes 59 entries; 35 of these parcels overlapped with those in the first excel file, and as such contributed an additional 24 parcels, resulting in a total of 248 parcels. Parcels in the second list were investigated by Revere partners and documented through site visits. Revere also provided a third dataset which included the geometry and attributes of an additional 11 potential park sites that did not align with parcel geometry, such as traffic medians and outdoor stairs, but had been identified as potentially suitable sites for pocket parks. The complete spatial dataset synthesized from all forms of potential park sites provided by Revere comprises a total of **259 potential pocket park locations**.

Indicators, Criteria, and Themes

Figure 3 shows a diagram of the analysis methods, depicting the Indicators that are grouped into Criteria, and the Criteria that are emphasized more than others in the Theme analyses. "Indicators" are the suitability measures that informed the analysis: an open space access analysis, linguistic isolation, minority population, low-income population, flood zones, sea level rise inundation, a land surface temperature analysis, tree canopy data, and regional terrain data. "Criteria" are the grouped indicators that help to characterize conditions related to Open Space Access, Environmental Justice, Wet Spots, Hot Spots, Tree Canopy, and Slope. The "Themes" are a way of giving greater weight to certain Criteria over others to emphasize the suitability of sites for Health Equity, Climate Resilience, and Physical Characteristics.
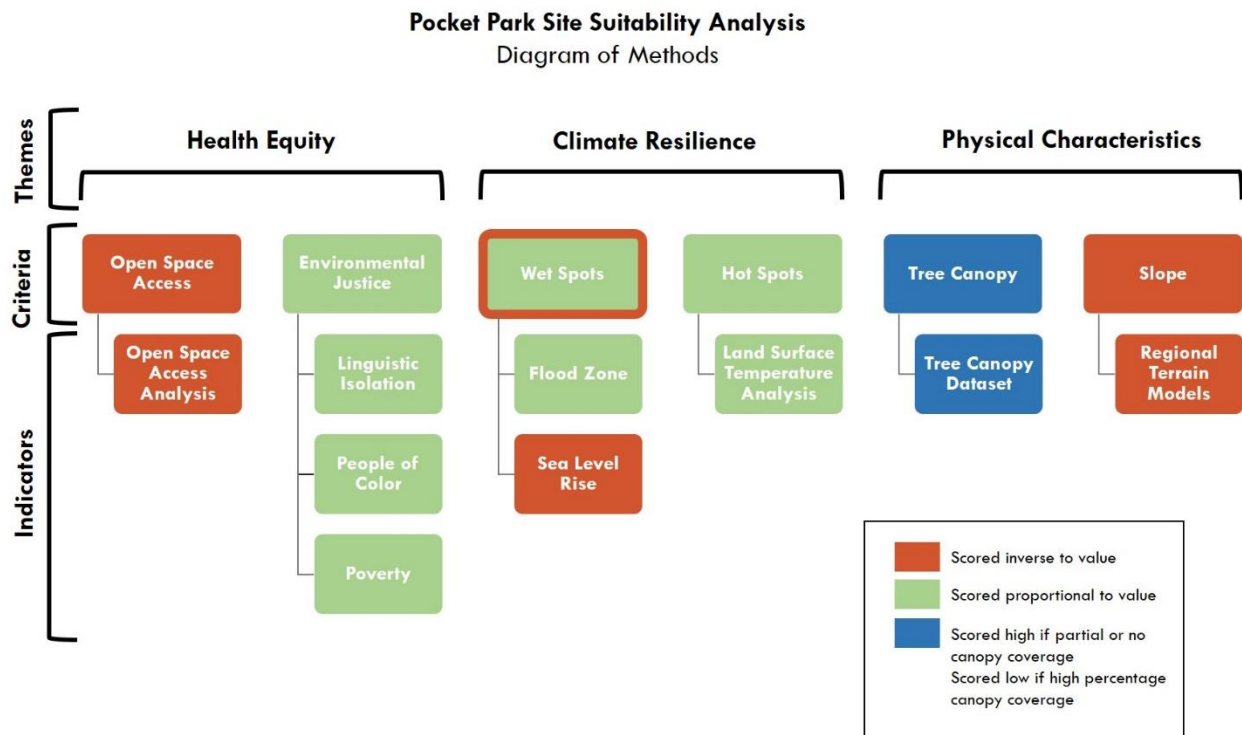
Figure 3: Pocket Park Site Suitability Analysis, Diagram of Methods

Open Space Access

Description The Open Space Access criteria describes open space and parks available to residents. Where areas are scored low, residents have limited access to open space features in their neighborhood; where areas are scored high, residents have greater access to open space features in their neighborhood. For the purposes of the pocket park analysis, areas are scored inverse to their open space access score to prioritize locations where there is limited access and therefore demonstrated need for more park space.

Methods Open Space Access criteria was created by:

1) Calculating a service area for all protected and recreational open space (Source: MassGIS, Protected and Recreational Open Space). Service areas are defined as all areas within 100 meters of roads and shared use paths located within one-quarter mile to one-mile of park access points, depending on the park's size.
2) Determining the number of residents living in the service area. The acreage of the open space was then divided by the population size in the open space service.
3) Producing spatial results in 250 x 250 meter grid-cells to describe the amount of open space accessible per person, an ascending scale, where a low score represents limited open space access, and a high score indicates more open space access. Figure 4 shows a map of these results.

Pocket Parks Suitability Analysis Atlas Maps
Open Space Access
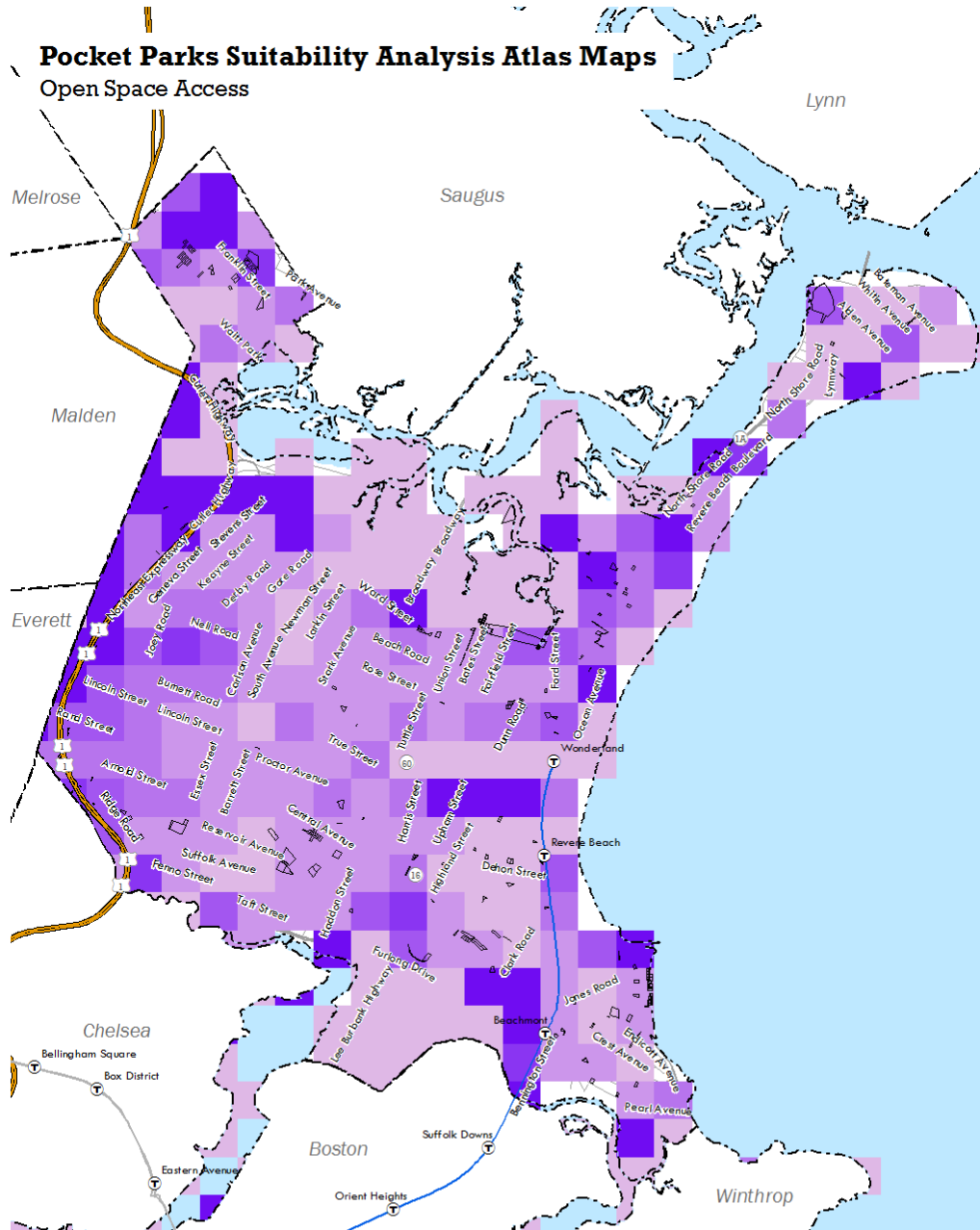
Legend

Acres of Open Space per Person

- Less than 0.2
- 0.2 - 0.4
- 0.4 - 0.6
- 0.6 - 0.8
- 0.8 - 1.0
- More than 1.0

- Potential Park Areas
- Town Boundaries
- Pond, Lake, Ocean
- Reservoir

The information depicted on this map is for planning purposes only.
It is not adequate for legal boundary definition, regulatory
interpretation, or parcel-level analyses.

Produced by:
Metropolitan Area Planning Council
60 Temple Place, Boston, MA 02111 | (617) 933-0700

Data Sources: MAPC, MassGIS, MassDOT
March 2019

0   0.175   0.35   0.7 Miles

MAPC

Document Path: K:\DataServices\Projects\Current_Projects\PublicHealth\Pocket_Parks\ProjectFiles\OpenSpaceAccess_Portrait.mxd

Environmental Justice

Description The Environmental Justice (EJ) criteria describes priority geographies for ensuring that the residents of those geographies are protected against environmental burdens, receive environmental benefits, and are meaningfully involved in related policymaking. Since 2002, the MA Executive Office of Energy and Environmental Affairs (EEA) has implemented an EJ Policy toward such efforts. The EJ policy recognizes that low-income communities and communities of color historically and currently live in neighborhoods that have greater exposure to pollution, contamination, and other environmental challenges that pose a risk to public health. The EJ Policy recognizes that all people have a right to be protected from environmental hazards and to live in and enjoy a clean and healthful environment regardless of race, color, national origin, income, or English language proficiency; and it prioritizes investment in EJ geographies toward equitable achievement of these principles.

Methods The Environmental Justice analysis was performed using the methods of the EEA. **Our analysis updates the currently available 2010 EJ dataset (which uses 2006-2010 ACS 5-year estimates); our updated analysis uses ACS 2012-2016 5-year estimate data for Revere.** Figure 5 shows a map of these results.

Neighborhoods that meet one or more of the following thresholds are considered EJ populations:

- **Income**: Block group with an annual median household income is equal to or less than 65 percent of the statewide median (Source: ACS 2012-2016)
- **People of Color**: 25% or more of the residents identifying as people of color (Source: ACS 2012-2016)
- **English Isolation**: 25% or more of respondents speak English only or very well – Limited English Proficiency (LEP) (Source: ACS 2012-2016). The original 2010 EJ dataset utilized households as the base sample for the English Isolation criterion, defining linguistically isolated households as those in which no one over the age of 14 speaks English "very well." These data were not available at the Census 2010 block group level in the ACS 2012-2016 tables, so the English isolation metric in this analysis is based on individual English isolation rather than household English isolation.

Pocket Parks Suitability Analysis Atlas Maps
Environmental Justice Criteria
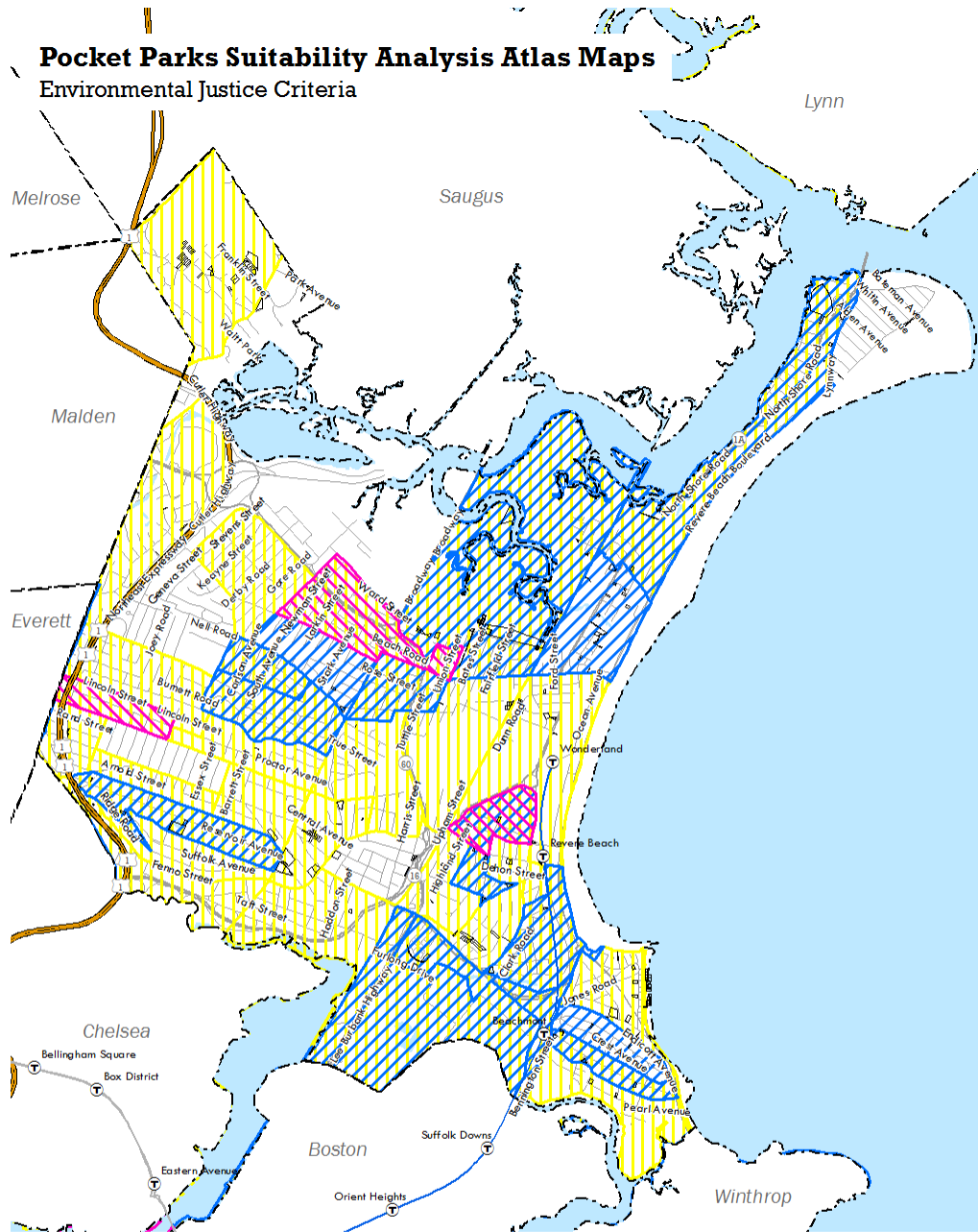
Legend

Environmental Justice Criteria

- Language Isolation Criteria
- Median Household Income Criteria
- Minority Criteria
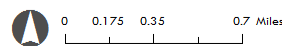
- Potential Park Areas
- Town Boundaries
- Pond, Lake, Ocean
- Reservoir

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

Produced by:
Metropolitan Area Planning Council
60 Temple Place, Boston, MA 02111 | (617) 933-0700

Data Sources: MAPC, MassGIS, MassDOT
March 2019

0   0.175   0.35   0.7 Miles

MAPC
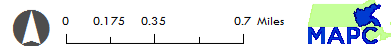
Document Path: K:\DataServices\Projects\Current_Projects\PublicHealth\Pocket_Parks\ProjectFiles\EJ-Criteria_Portrait.mxd

Pocket Park Site Suitability Analysis **| *Revere* | 22**

Wet Spots

Description The Wet Spots criteria prioritizes potential park sites based on flood hazard and future sea level rise inundation. In areas with a risk of flooding, unpaved pocket parks can provide some flood mitigation and allow for local stormwater infiltration. Sites located in areas estimated to have at a 0.2% annual chance of flooding (500-year return period) or greater based on the Federal Emergency Management Agency's digital flood insurance rate maps (FEMA, 2017) are scored higher for those climate mitigation benefits. However, areas that would be flooded on a typical day assuming one foot of sea level rise, relative to global mean sea level in 2000 (NOAA, 2017) are scored lower to discourage park sites that may not deliver sustained benefits. One foot of sea level rise is expected to occur between 2030 and 2060 based on latest projections (Kopp et al., 2017) and analyses of sea level trends in the area (Figure 6). Areas that are neither within a flood hazard zone or within an area likely to be inundated by rising sea levels receive a neutral score under the "Wet Spots" indicator.
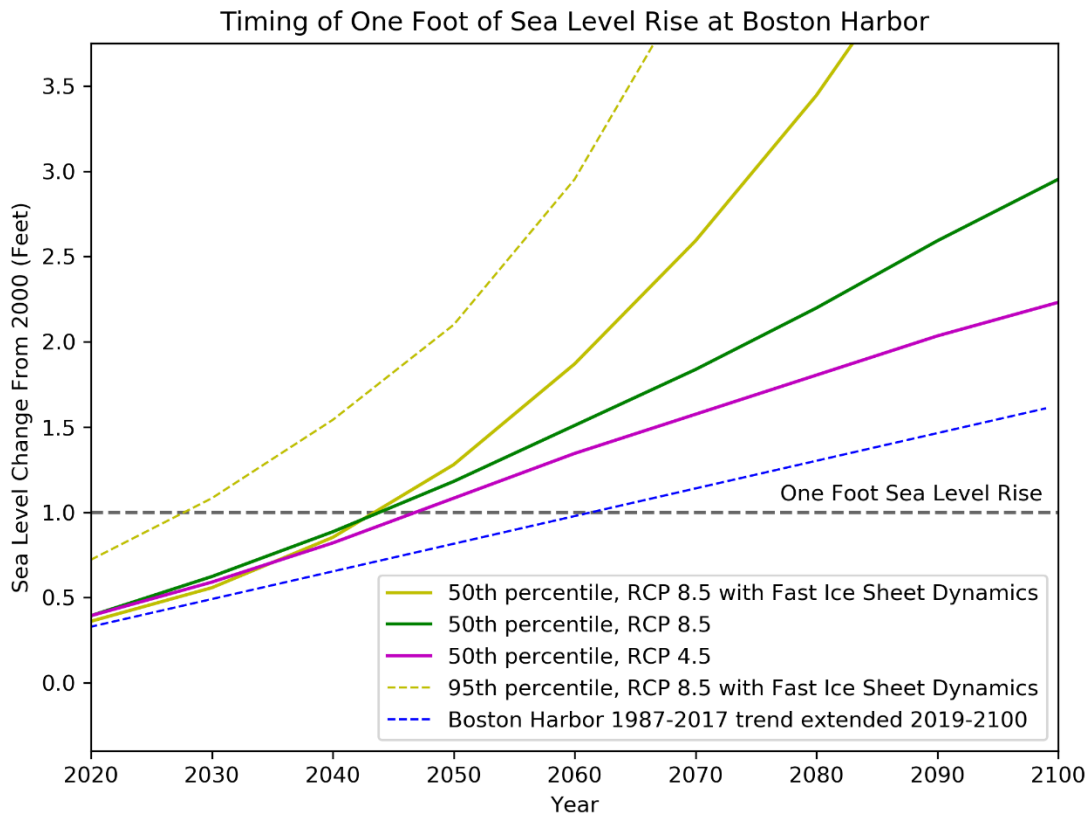
Figure 6: Timing of One Foot of Sea Level Rise at Boston Harbor, Kopp et al., 2017

Methods The Wet Spots criteria was produced using two datasets: the FEMA National Flood Hazard Layer (2017) and the NOAA sea level rise viewer one-foot sea level rise spatial dataset (NOAA, 2017).

Pocket Parks Suitability Analysis Atlas Maps
Flood Zones
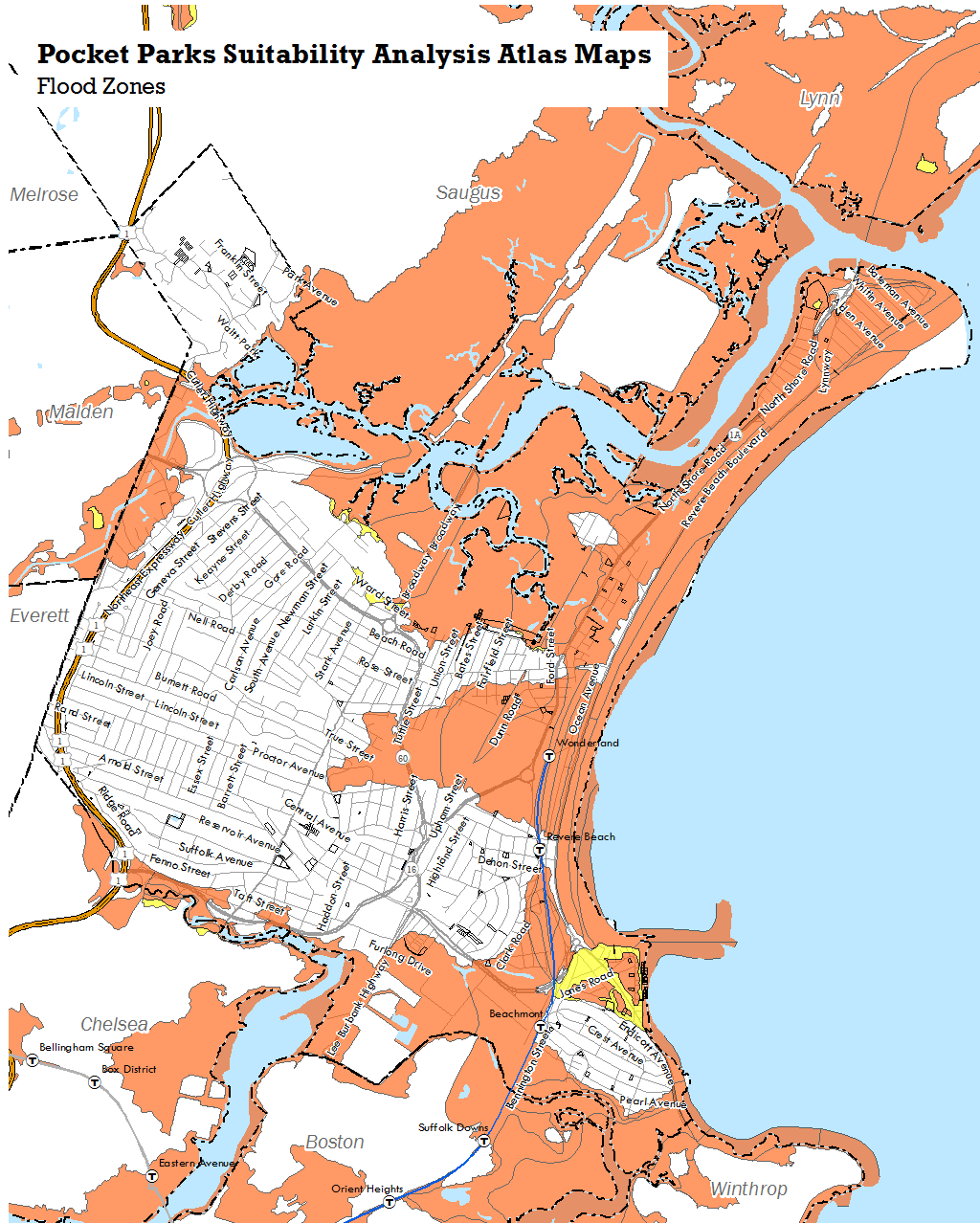
Legend

⬡ Potential Park Areas

⬡ Town Boundaries

⬡ 0.2% to 1% Annual Chance of Flooding

⬡ Greater than 1% Annual Chance of Flooding

💧 Pond, Lake, Ocean

💧 Reservoir

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Data Sources: MAPC, MassGIS, MassDOT
March 2019

0   0.175   0.35   0.7 Miles

MAPC

Document Path: K:\DataServices\Projects\Current_Projects\PublicHealth\Pocket_Parks\ProjectFiles\FloodZone_Portrait.mxd

Pocket Parks Suitability Analysis Atlas Maps
Sea Level Rise

Lynn

Melrose

Saugus

Malden

Everett

Chelsea

Bellingham Square

Box District

Boston

Eastern Avenue

Orient Heights

Suffolk Downs

Beachmont

Winthrop

Revere Beach

Wonderland
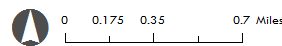
Legend

▨	1-Foot Sea Level Rise (2050)
⬚	Potential Park Areas
⬚	Town Boundaries
➕	Pond, Lake, Ocean
➕	Reservoir

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

Produced by:
Metropolitan Area Planning Council
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Data Sources: MAPC, MassGIS, MassDOT
March 2019

0   0.175   0.35   0.7 Miles

MAPC

Document Path: K:\DataServices\Projects\Current_Projects\PublicHealth\Pocket_Parks\ProjectFiles\SeaLevelRise_Portrait.mxd

Pocket Park Site Suitability Analysis **| *Revere* | 25**

Hot Spots

Description The Hot Spots criteria identifies areas with land surface temperatures greater than 100 degrees Fahrenheit on hot summer days. High land surface temperature correlates with high air temperature. The Hot Spots tend to be areas with a high proportion of impervious cover, such as parking lots and building rooftops. Most of Revere is covered by Hot Spots; this is true of most densely-developed cities in the MAPC region.

In areas with Hot Spots, vegetation of pocket parks can serve to decrease land and air temperature, and can serve as places for residents to retreat to and cool down, particularly where trees can provide shade and cooling spaces. Areas within Hot Spots are scored higher for pocket parks because of their potential to deliver these climate resilience benefits.

Methods Hot Spots were defined based on remotely sensed aerial images covering the MAPC region, taken on July 16th and August 30th, 2016. The images were collected by Landsat-7, courtesy of the U.S. Geological survey, and converted from reflectance bands to estimated land surface temperature using the method of Walawender, Hajto, and Iwaniuk (2012) with atmospheric correction values calculated with the method of Barsi, Barker, and Schott (2003). Both days were relatively cloudless and had recorded highs of 92°F at the Boston Logan Airport weather station (Source: National Centers for Environmental Information; National Climatic Data Center; MAPC analysis). The "hot spots" layer used in the Revere pocket parts suitability analysis was created by converting the land surface temperature raster to polygons of areas with estimated land surface greater than or equal to 100°F. About 10% of the MAPC region's total land area met or exceeded that threshold.

Pocket Parks Suitability Analysis Atlas Maps
Heat Island
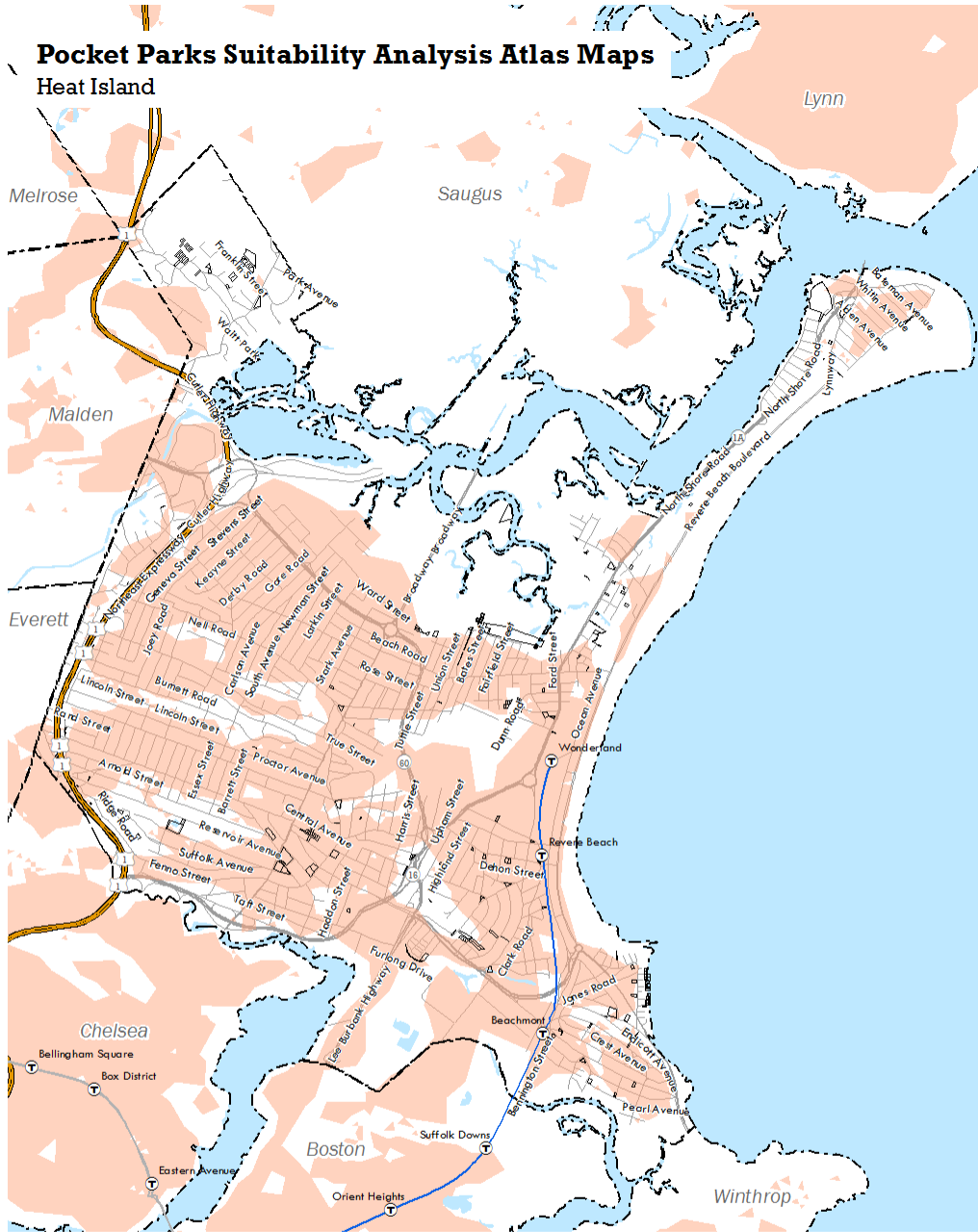
Legend

⬚ Potential Park Areas

◼ Heat Islands*

⬚ Town Boundaries

◼ Pond, Lake, Ocean

◼ Reservoir

*Heat islands are areas with land surface temperatures greater than 100 degrees Fahrenheit on hot summer days. These areas were delineated in an MAPC analysis based on remotely sensed images from hot, cloudless days in 2010 and 2016. Areas with high land surface temperature are associated with higher air temperature, and are typically located in areas with a high proportion of impervious cover.

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

Produced by:
Metropolitan Area Planning Council
60 Temple Place, Boston, MA 02111 | (617) 933-0700
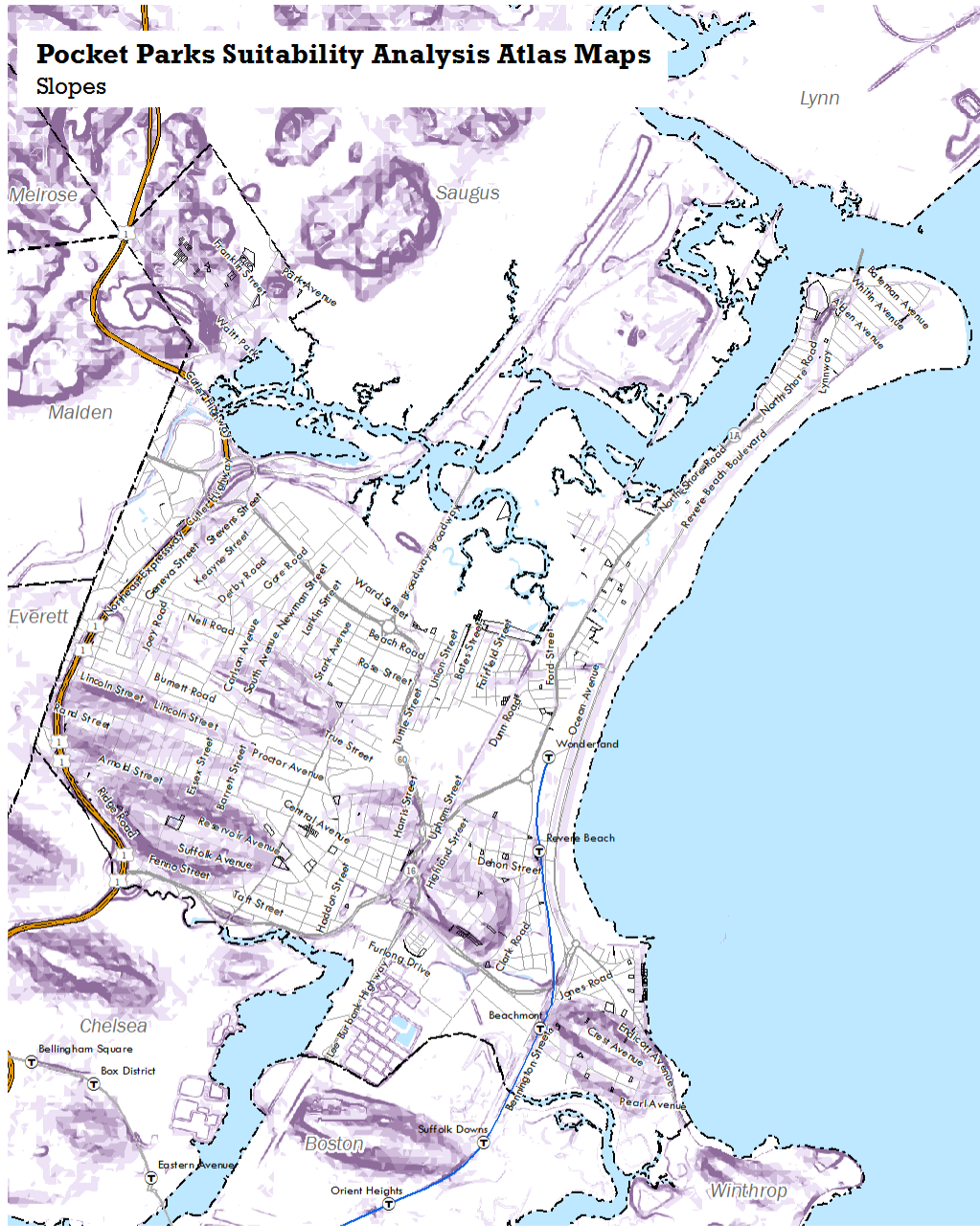
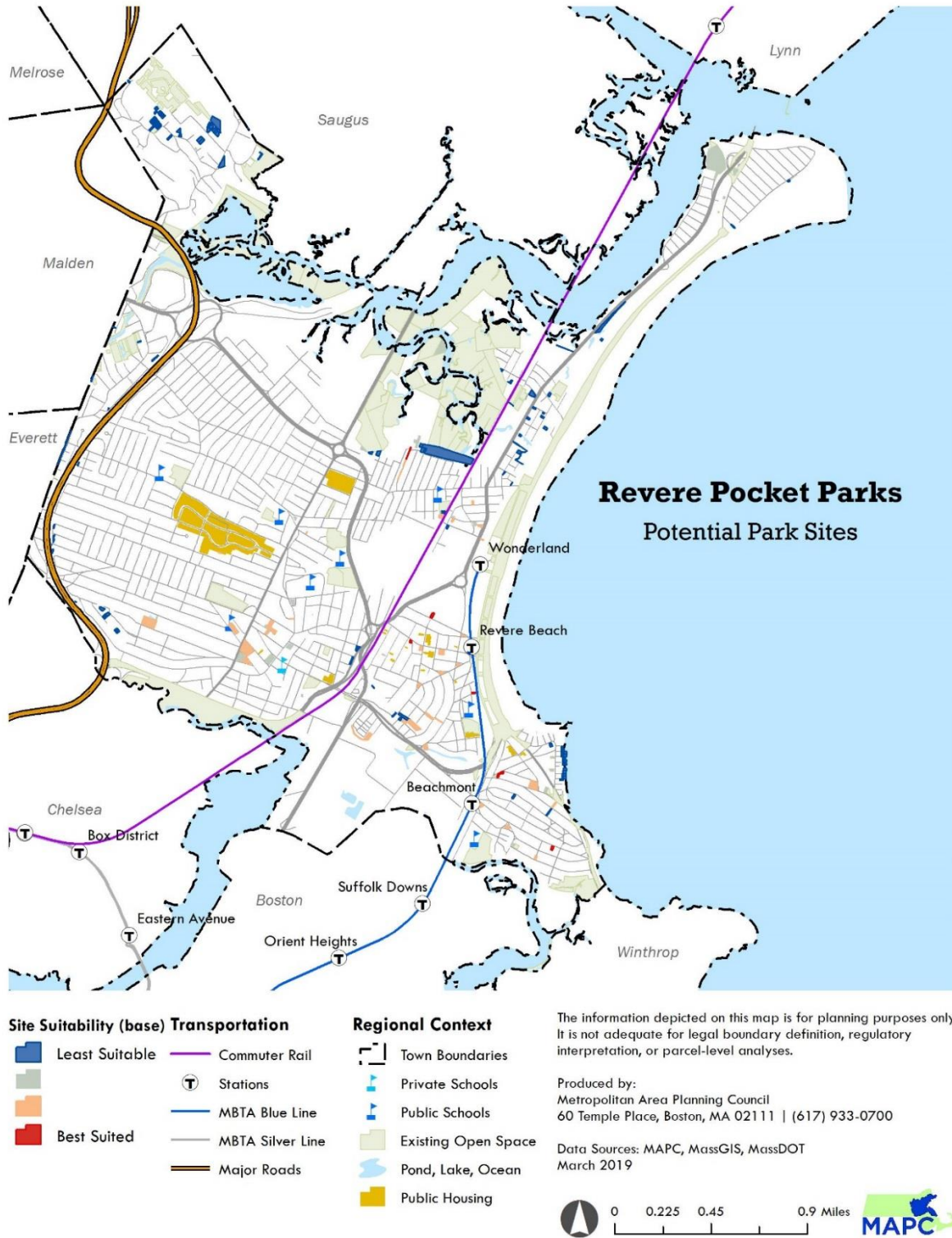Data Sources: MAPC, MassGIS, MassDOT
March 2019

0   0.175   0.35   0.7 Miles

MAPC
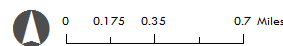
Tree Canopy

Description The Tree Canopy map shows full-leaf tree coverage. Research findings indicate that sites with partial to no tree canopy coverage are most suited for pocket parks. Sites with full canopy cover are likely to require tree removal before they can be developed as pocket parks, and furthermore full canopy coverage indicates the area may already serve as green space with important carbon sequestration benefits. As such, sites that have up to 50% of tree canopy are scored higher for pocket park suitability. The tree canopy score declines linearly with canopy cover between 50% and 100% canopy coverage over a potential pocket park site.

Methods The dataset showing tree canopy was sourced from an Urban Tree Canopy Assessment conducted by the University of Vermont Spatial Analysis Laboratory in partnership with the U.S. Department of Agriculture (2016). MAPC analysts calculated the percent canopy coverage on each potential park site in Community Viz ® by overlaying the canopy polygon dataset with the park site polygon dataset.

Pocket Parks Suitability Analysis Atlas Maps
Tree Canopy Coverage

Legend

⌗ Potential Park Areas

⌗ Town Boundaries

Tree Canopy (2016)

Pond, Lake, Ocean

Reservoir

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interpretation, or parcel-level analyses.

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Data Sources: MAPC, MassGIS, MassDOT
March 2019

0   0.175   0.35   0.7 Miles

MAPC
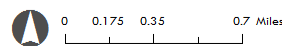
Document Path: K:\DataServices\Projects\Current_Projects\PublicHealth\Pocket_Parks\ProjectFiles\TreeCanopy_Portrait.mxd

Slope

Description The Slope criteria reflects the degree to which the ground is level or sloped. Areas are scored inverse to the percentage of slope; that is, the steeper an area is, the less suitable it is for pocket park development, and the lower a score it receives. Level, or slightly inclined areas are better suited for a range of uses, and better for navigation by a range of users.

Methods The dataset showing slope is from an MAPC analysis based on MassGIS digital terrain models of the region (2003-2018).

Pocket Parks Suitability Analysis Atlas Maps
Slopes

Legend

Slope

- 5-10%
- 10-15%
- 15-20%
- 20-25%
- Greater than 25%

- Potential Park Areas
- Town Boundaries
- Pond, Lake, Ocean
- Reservoir

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

Produced by:
Metropolitan Area Planning Council
60 Temple Place, Boston, MA 02111 | (617) 933-0700

Data Sources: MAPC, MassGIS, MassDOT
March 2019

0   0.175   0.35   0.7 Miles

MAPC

Document Path: K:\DataServices\Projects\Current_Projects\PublicHealth\Pocket_Parks\ProjectFiles\Slopes_Portrait.mxd

Preliminary Results

The preliminary analysis evaluated the suitability of all municipally owned parcels for pocket park development using the six criteria: Open Space Access, Environmental Justice, Wet Spots, Hot Spots, Tree Canopy, and Slope. The analysis weighted all indicators equally, giving no preference to any criteria over another. The results are shown in Figure 12, with the most suitable sites shown in red. It also shows contextual information on the location of schools, public housing, open spaces, and transportation infrastructure. A table of the top sites of the preliminary analysis follows. The header of the table describes the information in the columns. The subheader corresponds to the fields in the database that accompanies the analysis. MAPC provided this database to the City of Revere.

Revere Pocket Parks

Potential Park Sites

Melrose

Saugus

Lynn

Malden

Everett

Chelsea

Boston

Winthrop

Wonderland

Revere Beach

Beachmont

Box District

Eastern Avenue

Suffolk Downs

Orient Heights

Site Suitability (base)

- Least Suitable
- Best Suited

Transportation

- Commuter Rail
- Ⓣ Stations
- MBTA Blue Line
- MBTA Silver Line
- Major Roads

Regional Context

- Town Boundaries
- Private Schools
- Public Schools
- Existing Open Space
- Pond, Lake, Ocean
- Public Housing

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

Produced by:
Metropolitan Area Planning Council
60 Temple Place, Boston, MA 02111 | (617) 933-0700

Data Sources: MAPC, MassGIS, MassDOT
March 2019

0   0.225   0.45   0.9 Miles

MAPC

| Parcel Identifier | Description or Address | Criteria Score | | | | | Suitability Rating |
Mappar_id	Descript or Address	Access	HotSpot	WetSpot	EJ	Physical	Suitability Rating
18-324A-118-324A-1	STRP ON DOUGLAS ST	74.81	100.00	100.00	66.67	73.10	**100.00**
8-130-18-130-1	69 SHIRLEY AVE	100.00	100.00	50.00	66.67	81.46	**94.99**
	Opposite Walnut Ave and Kimball Ave	5.33	100.00	100.00	100.00	86.36	**93.04**
8-92-308-92-30	AVALON ST	38.29	100.00	100.00	66.67	86.36	**92.92**
1-15-17 1-15-17	Fire Station - Winthrop Ave - NOT ACTIVE	90.38	100.00	50.00	66.67	75.51	**90.26**
2-47-27A2-47-27A	1A GEORGE AVE	62.39	100.00	100.00	33.33	86.36	**90.12**
2-47-222-47-222-47-22	ATLANTIC AVE	62.39	100.00	100.00	33.33	86.36	**90.12**
6-120B-76-120B-7	301 LEE BURBANK REAR HWY	25.62	100.00	100.00	66.67	86.36	**89.07**
6-120B-126-120B-12	RIGHT OF WAY	25.62	100.00	100.00	66.67	86.36	**89.07**
8-132-1 8-132-1	Costa Park	100.00	100.00	50.00	66.67	61.63	**88.96**

Table 1: Top Parcels, Preliminary Analysis

Themes

To examine more closely the degree to which sites may deliver specific benefits, the suitability analysis was conducted three additional times to give greater importance to sets of criteria to emphasize the degree to which they promote Health Equity, Climate Resilience, or have Physical Characteristics suitable for pocket park development. These analyses are described as "Themes".

Health Equity Theme

The Health Equity theme characterizes conditions that are correlated with equitable health outcomes. Having access to open space and parks can increase opportunities for physical activity, social interaction, and reduce stress. The Open Space Access indicator allows for prioritizing pocket park development within areas with currently limited park access. The Environmental Justice indicator allows for prioritizing pocket parks, and the delivery of their environmental and health benefits in areas where population characteristics are correlated with increased environmental burdens. The Health Equity theme places a greater weight or importance on open space access and environmental justice criteria, while also incorporating suitability criteria related to climate resilience benefits and physical suitability as secondary considerations.

Climate Resilience Theme

The Climate Resilience theme characterizes conditions that are correlated with ecosystem services that mitigate climate impacts. Pervious, unpaved land allows for local retention and absorption of precipitation and reduces stormwater runoff. This can lessen the demands on municipal stormwater drainage systems. Where pocket parks add to a community's pervious open space resources, they may play a supportive role in flood retention. The Wet Spot criterion allows for prioritizing pocket parks and the delivery of local stormwater retention benefits in flood prone areas. This indicator also allow for the de-prioritization of areas that are expected to see sea level rise. The Hot Spot criterion allows for prioritizing pocket parks in areas where they can provide its users with shade coverage to escape high temperatures; or where intentional water features could also aid in lessening heat impacts on people. The Climate Resiliency theme places a greater weight or importance on criteria related to maximizing climate resilience benefits, while also incorporating suitability criteria related to health equity and physical suitability as secondary considerations.

Physical Characteristics Theme

   The Physical Characteristics theme of the analysis characterizes additional suitability conditions related to the site's environment and accessibility. The Tree Canopy indicator allows for prioritizing pocket park development in areas with partial tree canopy coverage and partial open ground, to support multiple uses. The Slope indicator allows for prioritizing sites that have either no incline or a limited incline, which allows for greater physical access for a broader range of users. The Physical Characteristics theme places a greater weight or importance on sites that require only a small investment of resources to transform sites into parks (such as tree removal and terracing) while also incorporating suitability criteria related to climate resilience benefits and health equity as secondary considerations.

Pocket Park Site Suitability Analysis
Diagram of Methods
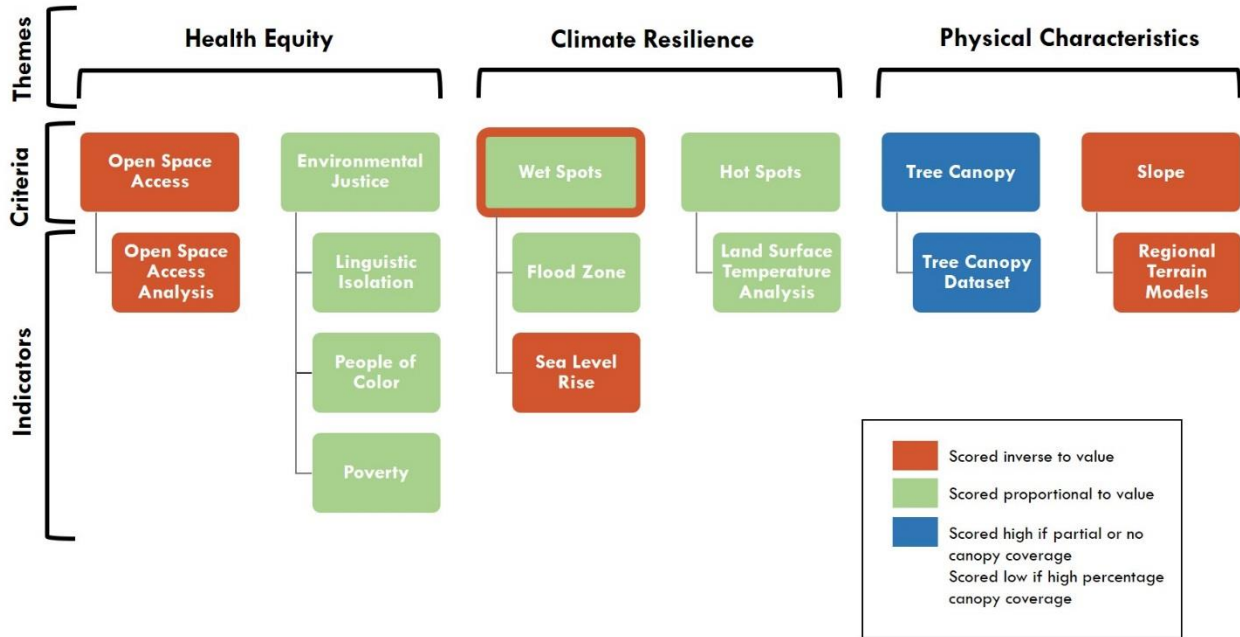
Figure 13: Pocket Park Site Suitability Analysis, Diagram of Methods

Assigning Weights

To compute an aggregate suitability ranking S for each site, the criteria were assigned weights (w) reflecting their overall importance. The overall suitability ranking S is the weighted sum of the Wet Spots score W, the Hot Spots score H, the Slope score L, the Tree Canopy coverage score C, the Environmental Justice score E, and the Open Space Access score O with weights w_i for each indicator I.

$$S = w_W W + w_H H + w_L L + w_C C + w_E E + w_o O$$

Each weight reflects the overall priority given to each criteria in determining the suitability of a site for development as a pocket park. To illustrate three options for how the sites might be prioritized, the MAPC analysis applied three sets of weights to the site suitability ranking in three Themes.

Criteria	THEME WEIGHTS		
	Health Equity	Climate Resilience	Physical Characteristics
Open Space Access	15	5	5
Environmental Justice	15	5	5
Wet Spots	3	15	3
Hot Spots	3	15	3
Tree Canopy	3	3	15
Slope	0	0	15

Table 2: Criteria weights assigned in the Health Equity, Climate Resilience and Physical Characteristics Themes

The first theme, Health Equity emphasizes the importance of Open Space Access and Environmental Justice in selecting pocket park sites. Other indicators are included in the suitability analysis, but receive less weight than Open Space Access score and the Environmental Justice score of each site. To capture all sites that could potentially serve these areas, the Slope indicator was removed from this theme, as a flat site was considered to be desirable, but not necessary.

The second theme, Climate Resilience emphasizes the importance of sustainability and flood and heat mitigation in pocket park site selection in the suitability analysis. Once again, the Slope indicator was removed from this theme.

The final theme, Physical Characteristics applied more weight to the Slope indicator and Tree Canopy indicators than other indicators in the suitability analysis to emphasize sites' physical suitability for park development.

Community Viz ® and Site Suitability Analysis

Community Viz ® is an add-on for ESRI ArcGIS created by City Explained, Inc. that enables a number of advanced planning applications. In addition to suitability analyses, it also enables build-out analyses, and optimization. Community Viz ® includes a "Suitability Wizard" that structures suitability analyses for planners and analysts through a pre-established structure of indicators, assumptions, scenarios, and criteria. The ability to create spatial data attributes that are formula-driven and dynamically updated as underlying data or criteria change allows planners to use spatial data for suitability analysis. For example, Community Viz ® smoothly integrates distance from relevant features or the percent to which features overlap other features as analysis criteria without lengthy manual spatial analysis.

We used Community Viz ® to structure and implement the Revere Pocket Parks Site Suitability Analysis. The "scenarios" tool allowed sites to be compared from three perspectives in terms of the Health Equity, Climate Resilience, and Physical Characteristics themes. Community Viz ® Suitability Wizard also automatically normalized indicator values so they would take on a common range of values that are straightforward to compare across indicator categories.

Technical Documentation

MAPC produced technical documentation that provides the step-by-step methods in greater detail. Those interested should contact MAPC staff named in this report to learn more about the methods.

RESULTS OF ANALYSIS

Description of Results

The Revere Pocket Park Site Suitability Analysis results are presented across three themes explored in this project. Results identify the suitability of 259 potential sites for pocket park development relative to the health equity and climate resilience benefits they may deliver, as well as the physical suitability of parcels to be converted into pocket parks.

Figure 14 shows a composite map of the top-ranking parcels for the Health Equity, Climate Resilience, and Physical Characteristics themes. The top parcels are predominantly located in the southeastern area of Revere, and some sites rank high for more than one criteria.

Health Equity

Figure 15 shows a map of all parcels assessed for their potential to promote Health Equity. Table 3 shows the top parcels of the Health Equity theme. The table header describes the information in the columns. The subheader corresponds to the fields in the database that accompanies the analysis. MAPC provided this database to the City of Revere.

Climate Resilience

Figure 16 shows a map of all parcels assessed for their potential to promote Climate Resilience. Table 4 shows the top parcels of the Climate Resilience theme.

Physical Characteristics

Figure 17 shows a map of all sites assessed for the suitability of their Physical Characteristics for pocket park development. Table 5 shows the top parcels of the Physical Characteristics theme.

Analysis Application

The parcels that are ranked highest in this analysis should be examined further by the City of Revere and its partners, and expanded ground-level assessments that look at additional features (i.e. proximity to potential users, availability of site, size of site, potential uses or other features) should be conducted to confirm suitability for pocket park development. The results are intended to inform strategic implementation that aligns goals for climate resilience, health equity, and open space expansion with stakeholder coordination, funding and other resources necessary for pocket park conversion. The section following the results identifies funding resources that support park and recreation resource development and should be explored.

Top Sites of All Themes
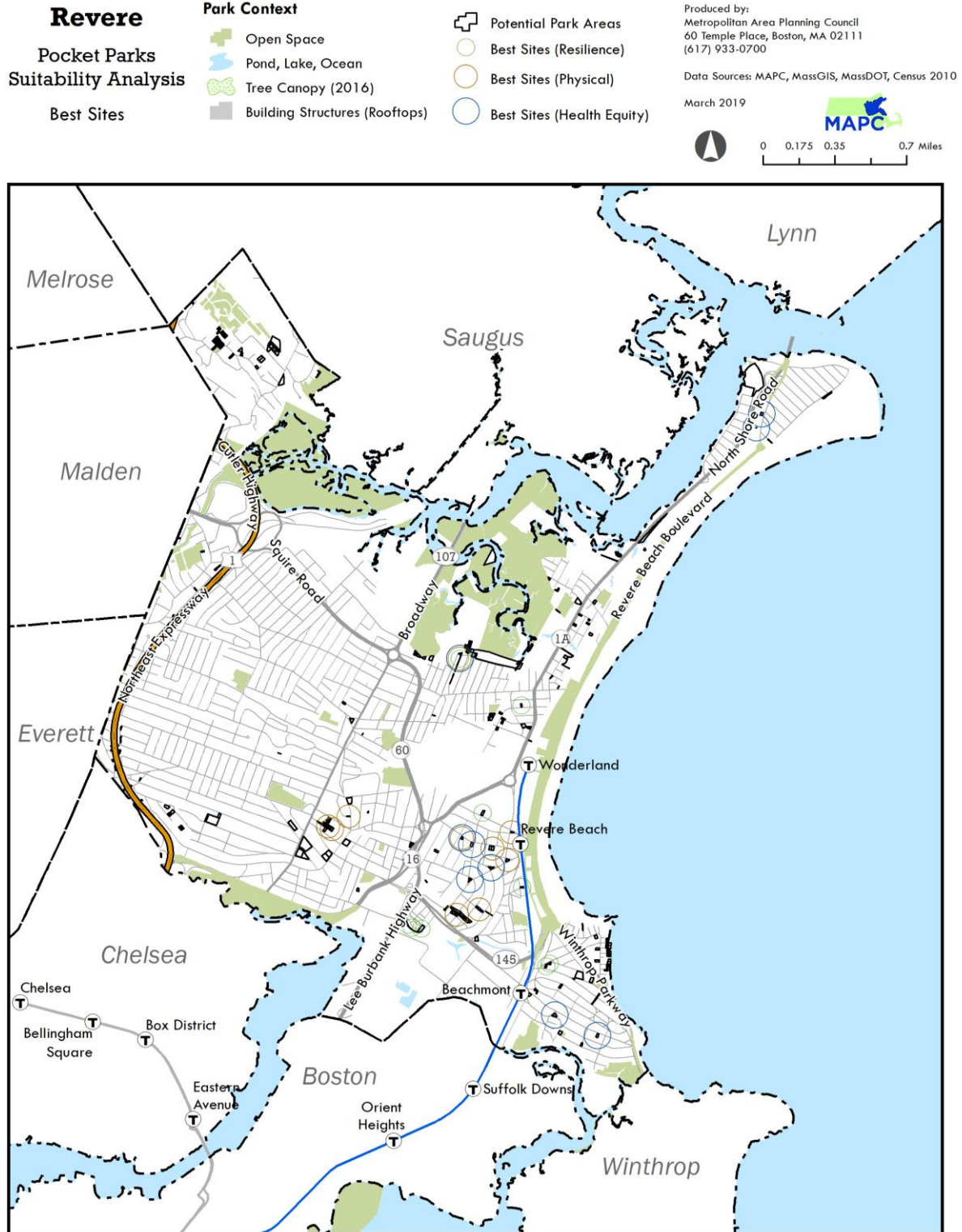
Figure 14: Final Results, showing a composite map of the top sites for the Health Equity, Climate Resilience, and Physical Characteristics themes
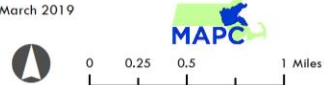
Health Equity Theme
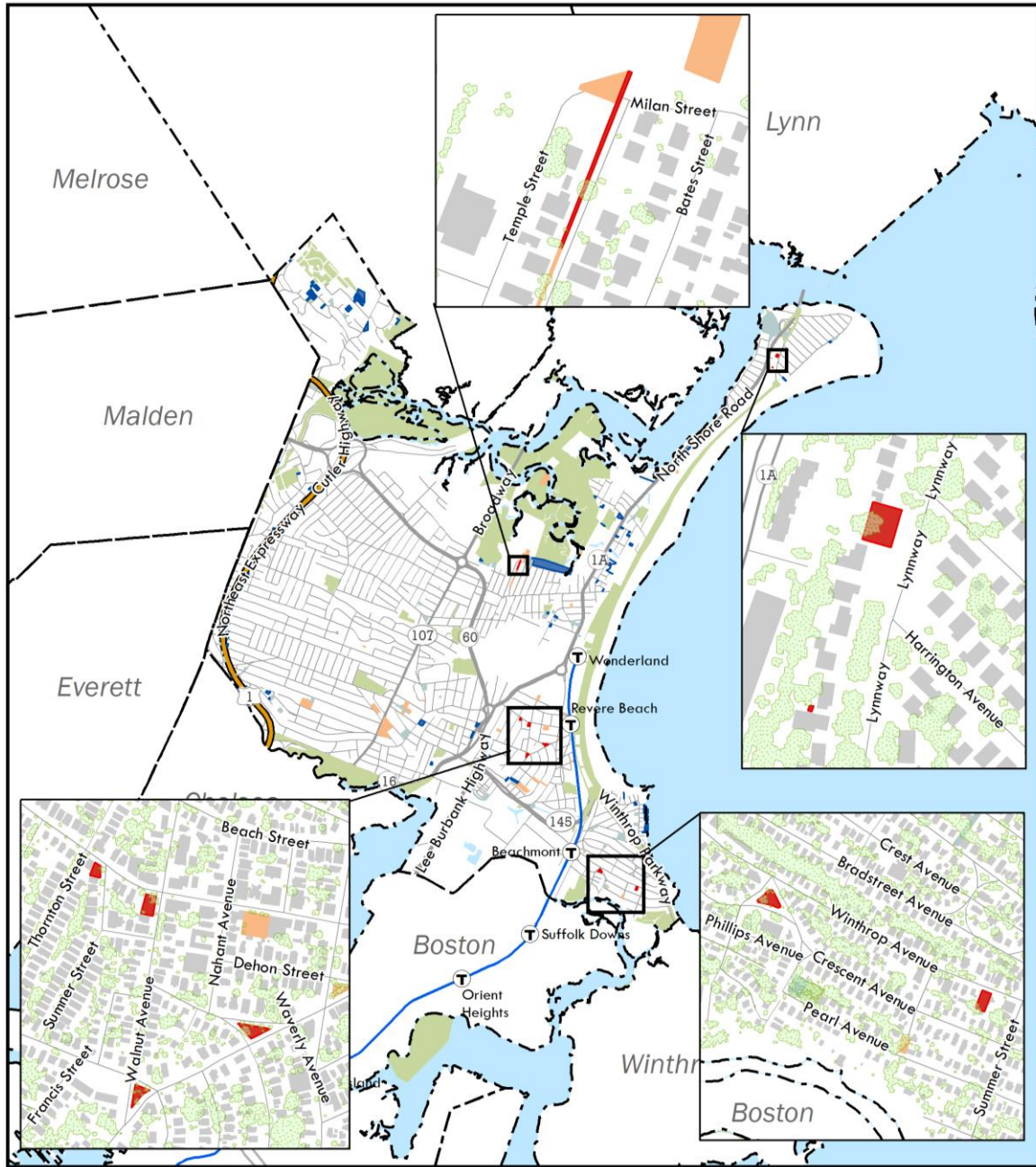
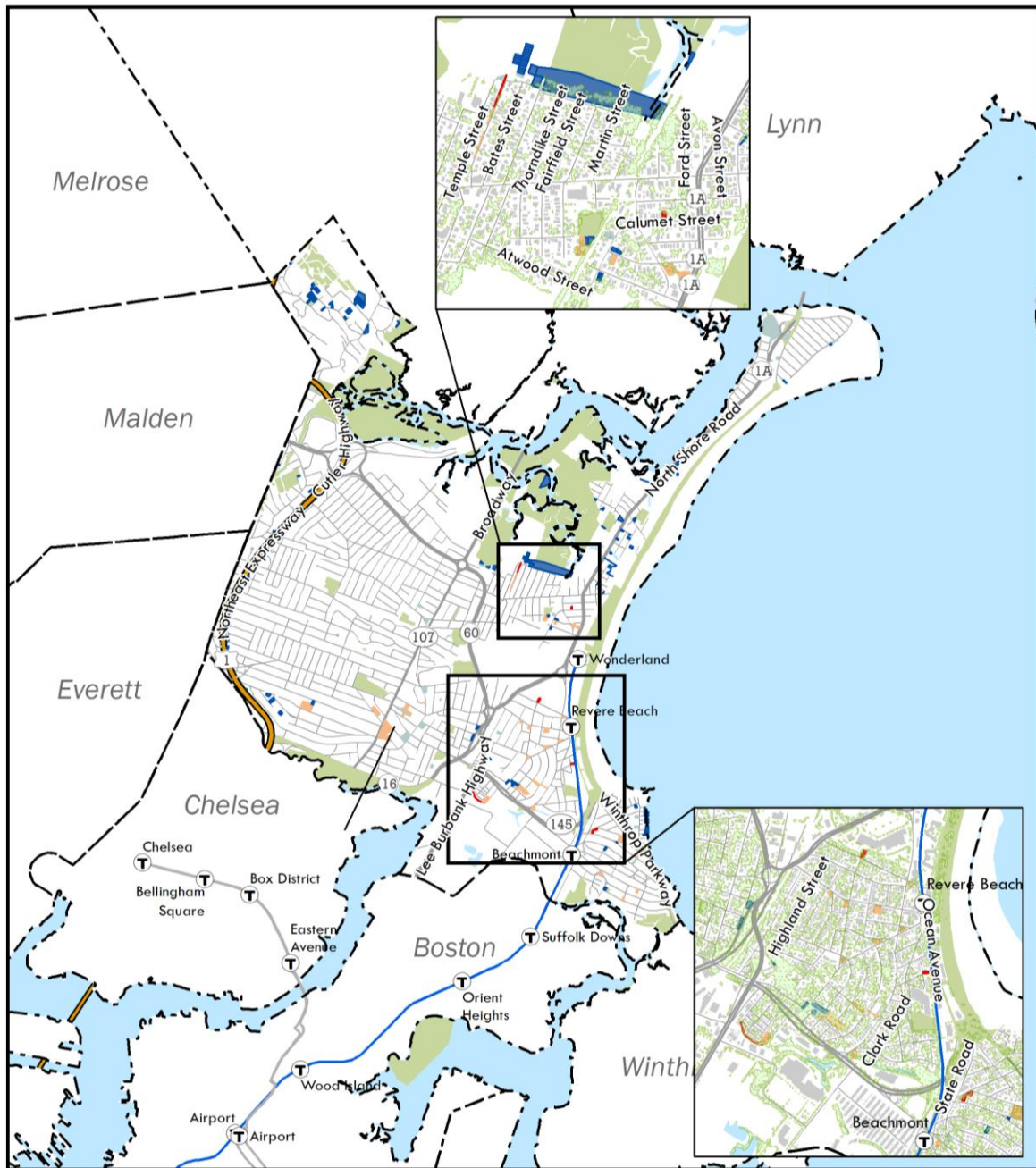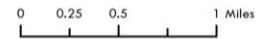
Figure 15: Final results, showing a map of all sites assessed for their potential to promote Health Equity

Parcel Identifier	Description or Address	Criteria Score					Suitability Rating
Mappar_id	Descript or site_addr	Access	HotSpot	WetSpot	EJ	Physical	Suitability Rating
8-130-18-130-1	69 SHIRLEY AVE	100.00	100.00	50.00	66.67	81.46	**100.00**
8-132-1 8-132-1	0 SHIRLEY AVE	100.00	100.00	50.00	66.67	61.63	**97.55**
	Traffic Island - Walnut Ave, Franklin Ave, Centennial Ave	100.00	100.00	50.00	66.67	41.22	**95.02**
	Traffic Island - Fltzhenry Sq, Centennial Ave, Campbell Ave	100.00	100.00	50.00	66.67	39.15	**94.77**
1-15-17 1-15-17	931 WINTHROP AVE	90.38	100.00	50.00	66.67	75.51	**94.50**
1-16A-1 1-16A-1	100 CRESCENT AVE	99.80	100.00	50.00	66.67	36.77	**94.37**
18-324A-118-324A-1	0 STRP ON DOUGLAS ST	74.81	100.00	100.00	66.67	73.10	**92.69**
13-192Q191-27813-192Q191-278	0 LYNNWAY REAR	100.00	0.00	100.00	66.67	70.90	**92.51**
13-192Q191-287 13-192Q191-287	70 LYNNWAY	100.00	0.00	100.00	66.67	57.78	**90.89**

Table 3: Top Parcels of the Health Equity Theme

Climate Resilience Theme

Figure 16: Final results, showing a map of all sites assessed for their potential to promote Climate Resilience

Parcel Identifier	Description or Address	Criteria Score					Suitability Rating
Mappar_id	Descript or site_addr	Access	HotSpot	WetSpot	EJ	Physical	Suitability Rating
18-324A-118-324A-1	0 STRP ON DOUGLAS ST	74.81	100.00	100.00	66.67	73.10	**100.00**
	Opposite Walnut Ave and Kimball Ave	5.33	100.00	100.00	100.00	86.36	**94.38**
8-92-308-92-30	0 AVALON ST	38.29	100.00	100.00	66.67	86.36	**94.30**
10-183-1110-183-11	67 CALUMET ST	84.50	100.00	100.00	33.33	54.85	**93.76**
2-47-27A2-47-27A	1A GEORGE AVE	62.39	100.00	100.00	33.33	86.36	**92.55**
2-47-222-47-222-47-22	0 ATLANTIC AVE	62.39	100.00	100.00	33.33	86.36	**92.55**
6-120B-76-120B-7	301 LEE BURBANK REAR HWY	25.62	100.00	100.00	66.67	86.36	**91.89**
6-120B-126-120B-12	0 RIGHT OF WAY	25.62	100.00	100.00	66.67	86.36	**91.89**
7-114-118-33C7-114-118-33C	0 PRATT PL	25.62	100.00	100.00	66.67	61.60	**89.53**

Table 4: Top Parcels of the Climate Resilience Theme
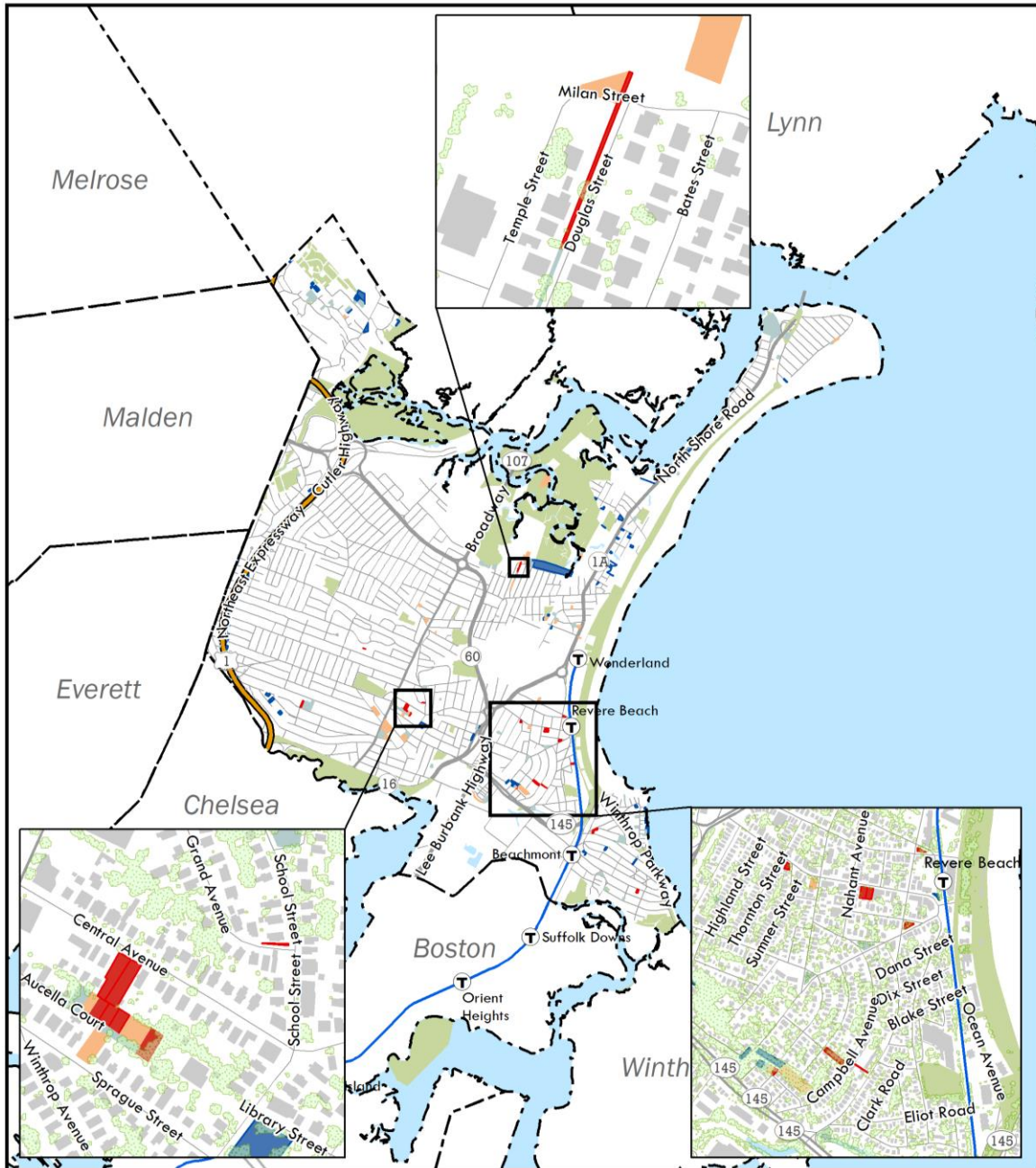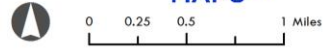
Physical Characteristics Theme

Figure 17: Final results, showing a map of all sites assessed for the suitability of their Physical Characteristics for pocket park development

Parcel Identifier	Description or Address	Criteria Score					Suitability Rating
Mappar_id	Descript or site_addr	Access	HotSpot	WetSpot	EJ	Physical	Suitability Rating
8-130-18-130-1	69 SHIRLEY AVE	100.00	100.00	50.00	66.67	81.46	**100.00**
	Traffic Island - Kimble Ave, North Shore Rd, Beach St	100.00	100.00	50.00	33.33	86.36	**97.52**
	Traffic Island - Dehon St, North Shore Rd, Centennial Ave	100.00	100.00	50.00	33.33	86.36	**97.52**
7-121-177-121-17	0 OVERLOOK AVE	96.95	100.00	50.00	33.33	86.36	**96.41**
	Public stairs from Florence Ave to Campbell Ave	96.95	100.00	50.00	33.33	86.36	**96.41**
8-137-188-137-18	0 SHIRLEY AVE	100.00	100.00	50.00	33.33	82.96	**95.05**
18-324A-118-324A-1	0 STRP ON DOUGLAS ST	74.81	100.00	100.00	66.67	73.10	**93.87**
16-259-2916-259-29	0 AUCELLA CT	89.40	100.00	50.00	33.33	86.36	**93.68**
16-259-2616-259-26	0 AUCELLA CT	89.40	100.00	50.00	33.33	86.36	**93.68**

Table 5: Top Parcels of the Physical Characteristics Theme

FUNDING SOURCES

The Revere Open Space and Recreation Plan, 2018-2025 Update lists and describes the following state and federal funding sources available for park and recreation efforts.

- **Local Acquisition for Natural Diversity (LAND) Program**
- **Parkland Acquisitions and Renovations for Communities (PARC) Program**
- **Land and Water Conservation Fund (LWCF)**
- **Recreational Trails Grant Program (RTGP)**
- **Gateway Cities Program**
- **Community Preservation Act**

The following resources also support park and recreation activities.

Housing and Urban Development, Community Development Block Grant

The Community Development Block Grant (CDBG) program is a flexible program that provides communities with resources to address a wide range of unique community development needs. Beginning in 1974, the CDBG program is one of the longest continuously run programs at HUD. The CDBG program identifies publicly-owned facilities and infrastructure such as parks, playgrounds, and aesthetic amenities such as trees, sculptures, pools of water and fountains and other works of art as Public Facilities and Improvements. CDBG funds may be used in low- and moderate-income areas (census tracts) for the acquisition, construction, reconstruction, rehabilitation or installation of such public improvements or facilities.

National Recreation and Park Association

The National Recreation and Park Association (NRPA) periodically posts information about grant and fundraising opportunities that are available for park and recreation agencies and affiliated friends groups and 501(c)(3) nonprofits.

Department of Conservation and Recreation, Urban and Community Forestry Challenge Grant

The Massachusetts Department of Conservation and Recreation (DCR) Urban and Community Forestry Program offers 50-50 matching reimbursement grants (75-25 for projects in environmental justice areas) to municipalities and nonprofit groups in Massachusetts communities of all sizes for the purpose of building local capacity for excellent urban and community forestry at the local and regional level. Urban and Community Forestry refers to professional management (planting, protection, and maintenance) of a municipality's public tree resources in partnership with residents and community institutions.

Community Compact Cabinet, Best Practices Program

The Community Compact is a voluntary, mutual agreement entered into between the Baker-Polito Administration and individual cities and towns of the Commonwealth. In a Community Compact, a community will agree to implement at least one best practice that they select from across a variety of areas. Those communities participating in the Community Compact will, over a two year period, implement the best practice(s) they selected when entering into the Compact. Resources for technical assistance from the Commonwealth will be prioritized for those communities entered into a Compact and seeking to implement their best practice(s). The Division of Local Services serves as the primary point of entry for communities looking for resources in best practice development and implementation. The Best Practices most aligned with pocket park development fall under the Energy and Environment Category, and subcategories: Sustainable Development and Land Protection; Climate Change Mitigation; and Climate Change Adaptation & Resilience.

Municipal Vulnerability Preparedness Program

The Municipal Vulnerability Preparedness (MVP) Program provides support for cities and towns in Massachusetts to begin the process of planning for climate resiliency and implementing priority projects. Communities who complete the MVP program become certified as an MVP community and are eligible for MVP Action grant funding and other opportunities. Revere is an MVP community and is eligible for the MVP Action grant funding.

Determination of Need Funding, Community-Based Health Initiatives

The Massachusetts Determination of Need (DoN) regulation invests in innovative health delivery methods and public health strategies. The DoN Community-Based Health Initiative (CHI), promotes addressing 6 social determinants of health, as defined by the DoN Health Priorities. The DoN Health Priorities include "Built Environment" features including "access to parks and open space".

Trust for Public Land

The Trust for Public Land (TPL) helps state and local governments design, pass, and implement legislation and ballot measures that create new public funds for parks and land conservation. TPL provides 1) technical assistance, creating legislative and ballot measures that reflect public priorities, 2) campaign services, offering a suite of campaign services from planning to get-out-the-vote programs, and 3) conservation economics, delivering research on the fiscal and economic benefits of land conservation.

NeighborWorks America

NeighborWorks America provides capacity-building trainings, tools, and technical assistance for community development professionals. Their Community Revitalization & Engagement resources include tools to evaluate park and public space interventions.

Commonwealth Places ®

Commonwealth Places, a collaborative initiative from MassDevelopment and Patronicity, is a crowdgranting challenge program to activate new or distressed public places and community

spaces. The program is open to municipalities and nonprofits to improve low- and moderate-income communities in Massachusetts.

City of Revere, Parks & Recreation Department

The City of Revere Parks & Recreation Department is capable of funding certain capital projects throughout the year based on available funding. Funding can go towards park and open space development, improvement, and or maintenance.

City of Revere Community Improvement Trust Fund

The City of Revere Community Improvement Trust Fund receives payments when development proposals are granted special permits or variances on new structures that exceed by right allowances for the number of units, Floor-to-Area-Ratio (FAR), height or maximum building coverage. By a majority vote of the City Council, the funds may be spent for a range of purposes, including recreation and open space areas and the support of athletic programs.

Massachusetts Cultural Council, Capital Grants Program

The Capital Grant Program provides matching grants to assist with the acquisition, final-stage design, construction, repair, renovation, rehabilitation, or other capital improvements or deferred maintenance of cultural facilities in Massachusetts.

Revere CARES, Revere on the Move Mini-Grant

Revere on the Move and the Alcohol, Tobacco, and Other Drugs Task Force offers mini grants to fund residents' ideas that continue making Revere a healthy place to work, play, and raise families. Among eligible projects, funds can go to park and open space development and improvements.

Other potential partners and funding

Revere partners also identified the Revere Chamber of Commerce and private developers, neighborhood associations, and property owners as potential allies in supporting pocket park development.

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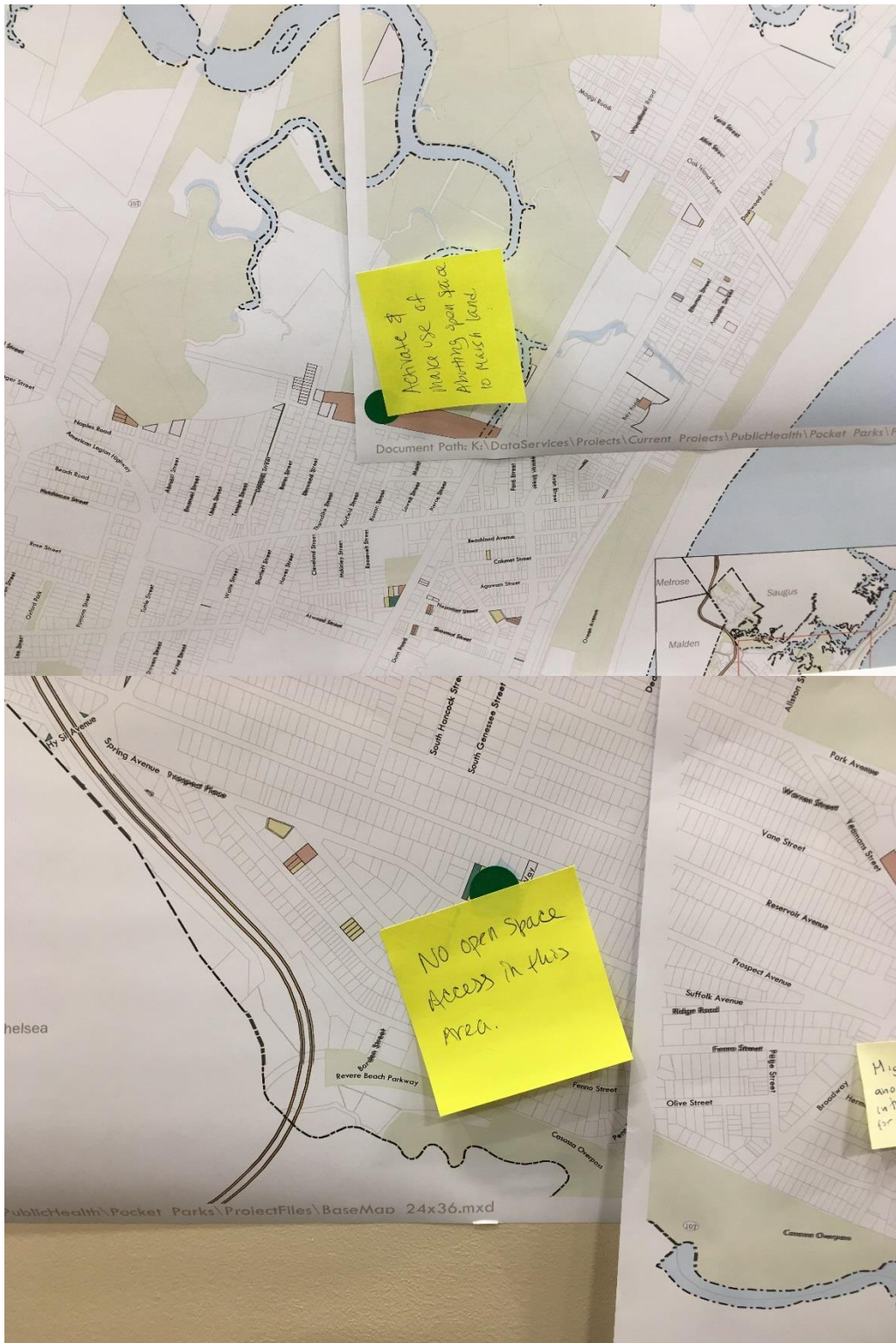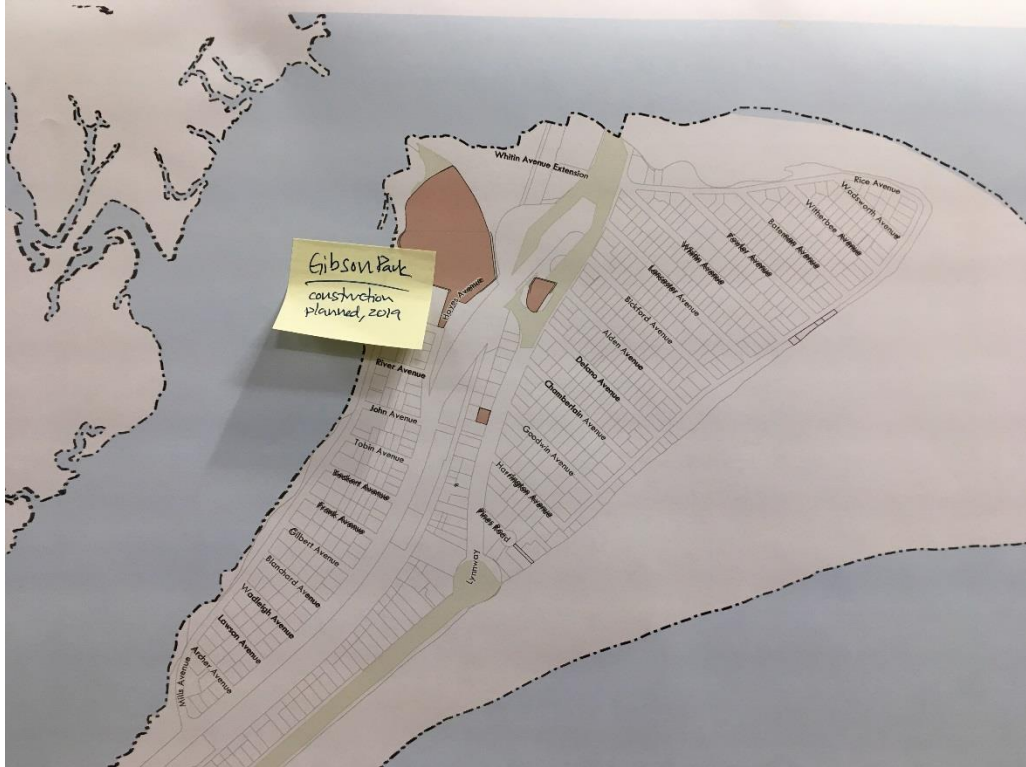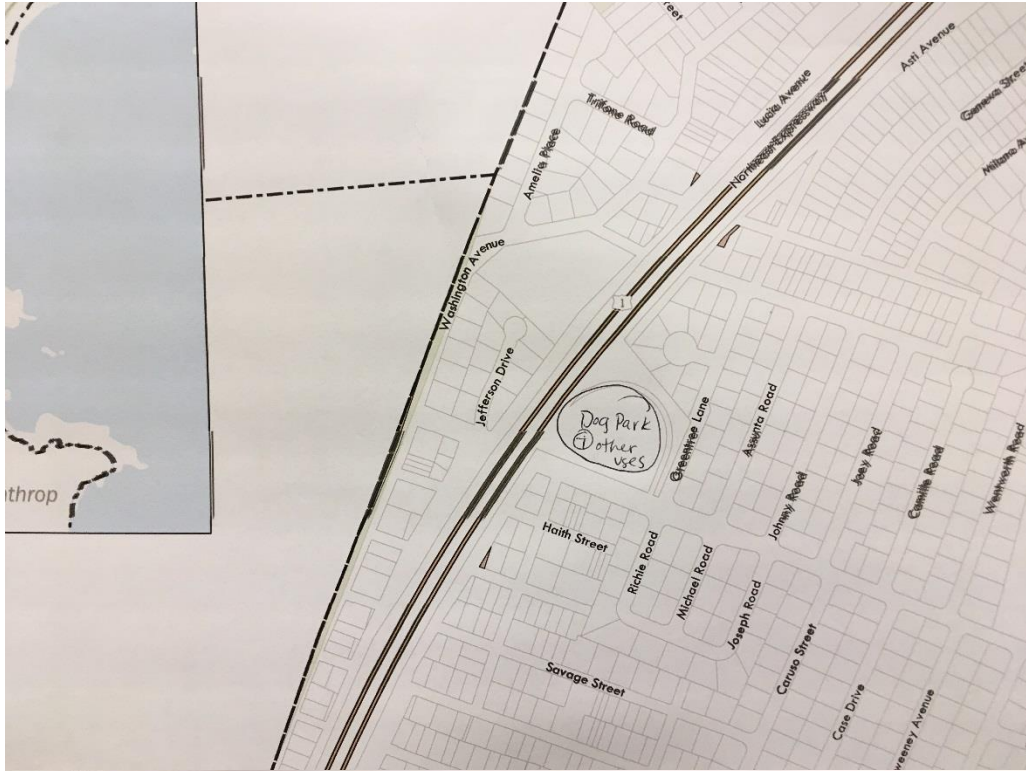
APPENDICES

Stakeholder Meeting, February 6, 2019

Participants of the February 6, 2019 meeting provided their comments on neighborhood characteristics related to the discussion about pocket park development opportunities.

Gibson Park
construction
planned, 2019
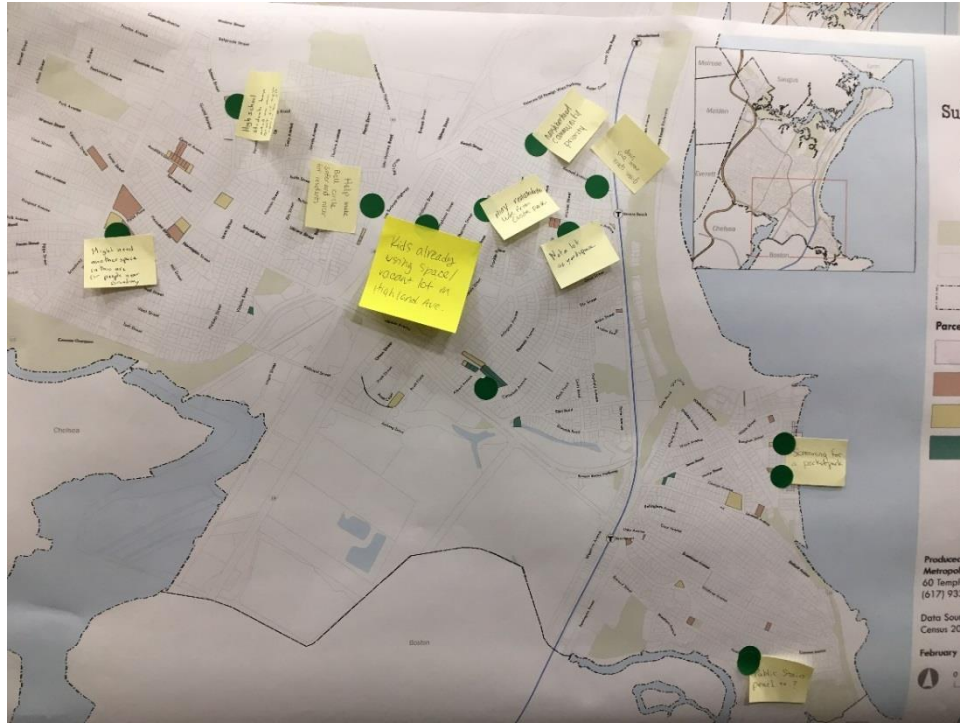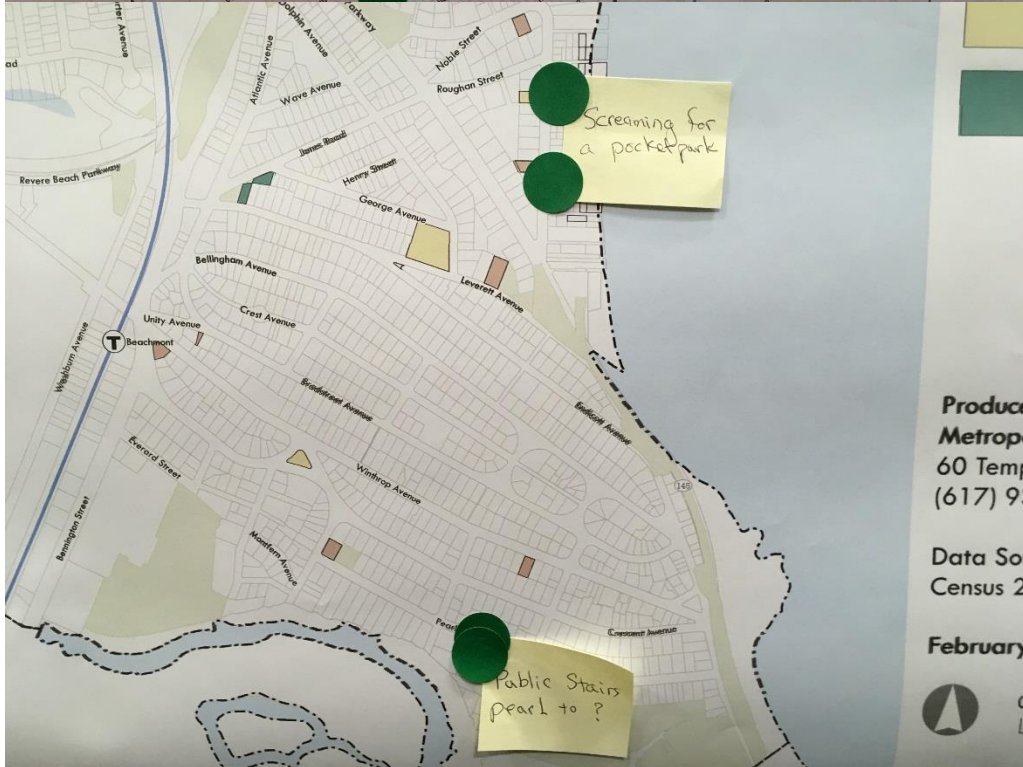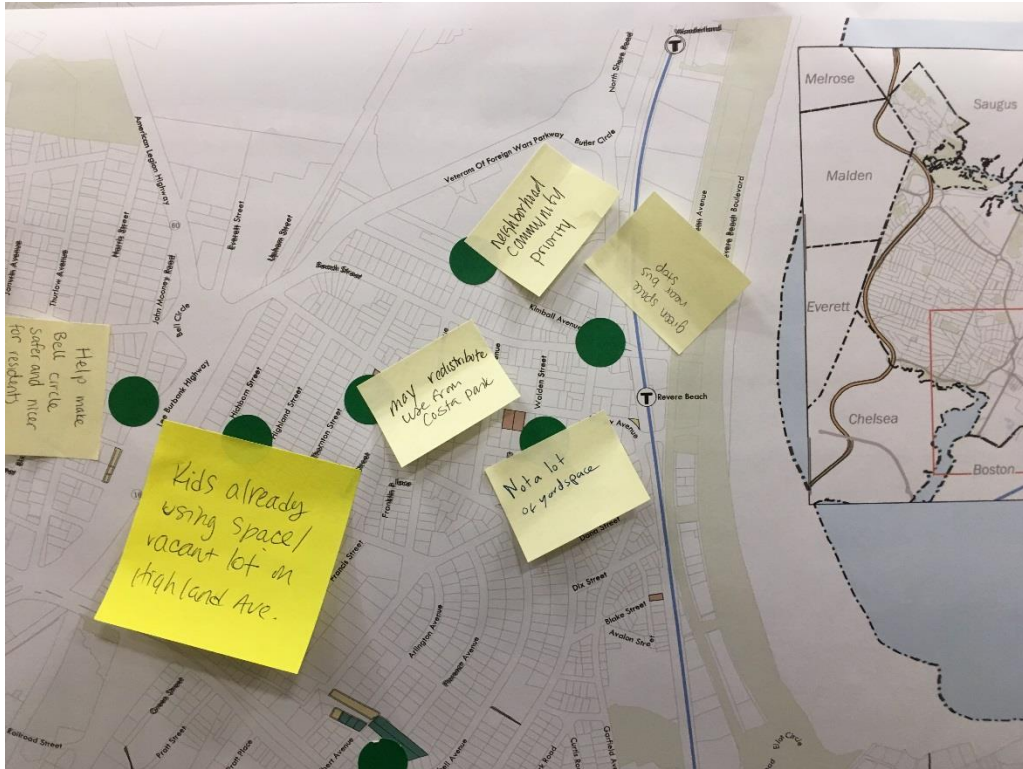
Master Plan Community Forum, May 8, 2019

On May 8, 2019 Revere hosted a Master Plan forum on Transportation, Energy & Climate, and Public Health & Open Space. Forum participants provided input on pocket park features through a visual preference survey. This feedback was subsequently added to by the Revere Cares Coalition meeting participants on June 25, 2019. The following pages show snapshots of combined feedback from both forums, where participants were asked, "What do you like about these pocket parks?".

ROXBOROUGH POCKET PARK, PHILADELPHIA

ART • GAMES • PICNIC TABLES

GREENACRE PARK, NEW YORK

GREENACRE PARK, NEW YORK — Nora

WATER FEATURES • VERTICAL GARDENING

peaceful

Water features — Nora

Relaxing — Nora
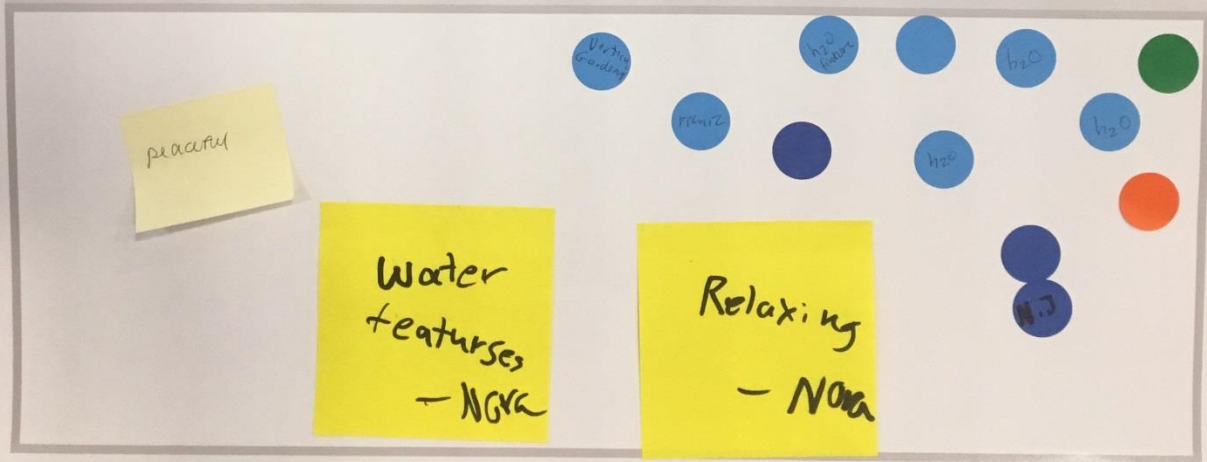
6TH AVENUE NW PO[CKET PAR]K, SEATTLE

Living enviorment

GRASSY LAWN • PERFORMANCE AREA

room to run around/ recreation

EXERCISE EQUIPMENT FOR FREE USE

Splash pools basketball

Constitution Ave + Coolidge St RHA backyards

public space for cultural activites – plays, busking, picnics

School St corner of Mountain Ave Across from High School

JEFFERSON MARKET GARDEN, NEW YORK

PLANTS • TREES • GARDEN • BENCHES
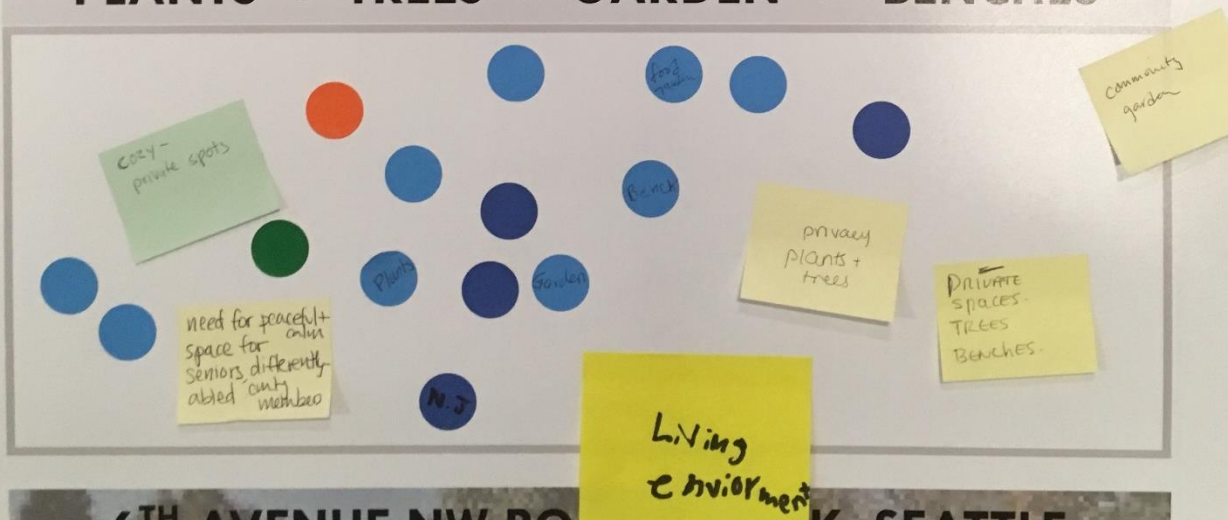
Revere Cares Coalition Meeting, June 25, 2019

The Revere Cares Coalition held its regular meeting, focusing on the Revere Pocket Parks Project. Participants were given an overview of the project and explored five sites that were included in the pocket park suitability analysis. This sites are listed below, followed by images of the discussion and ideas generated by participants for each about what pocket park opportunities excited them.

- 69 Shirley Avenue
- Avalon Street (at the intersections of Avalon and Blake Streets)
- 931 Winthrop Avenue
- Fitzhenry Square
- 39 Arcadia Street
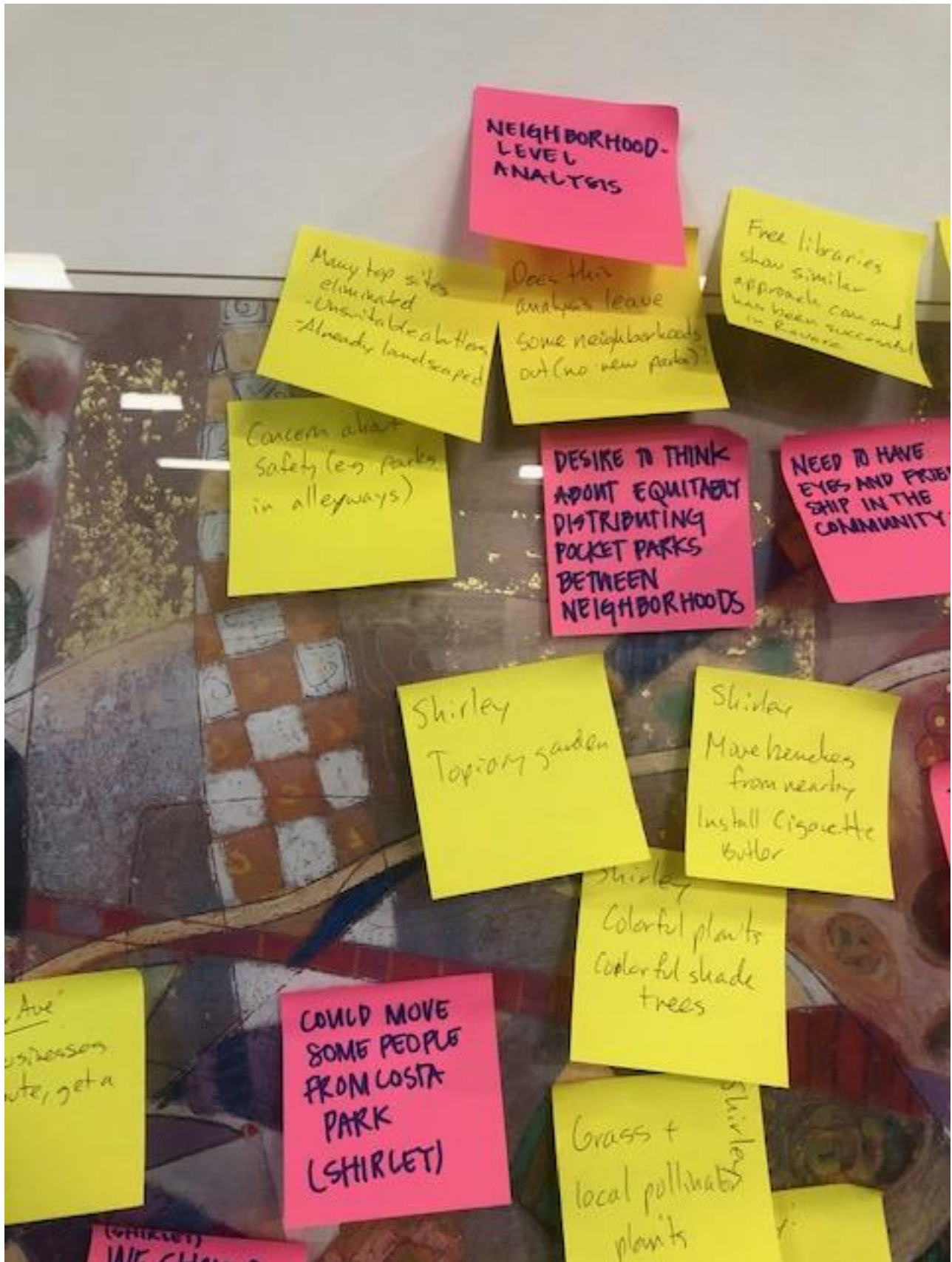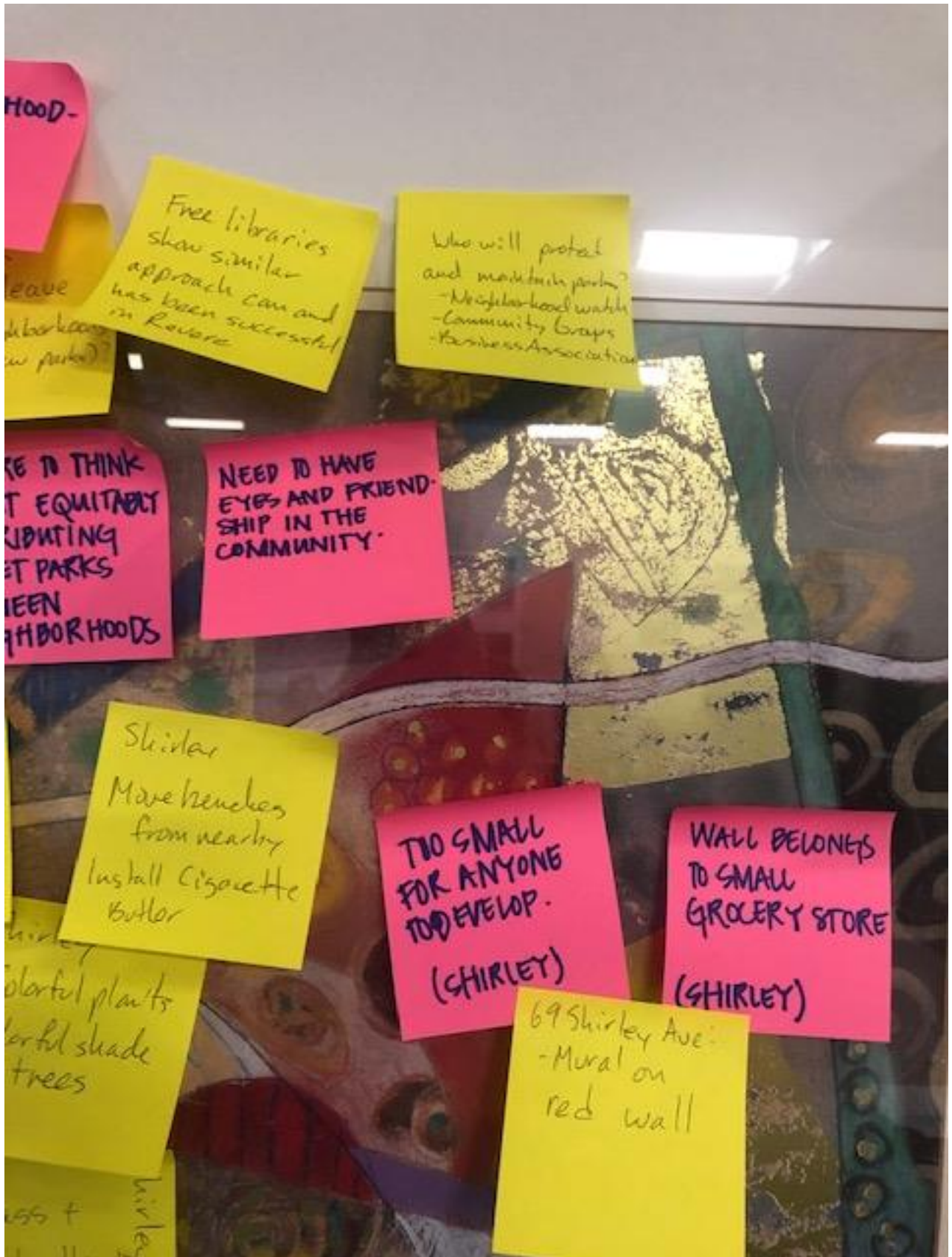
HOOD-

Free libraries
show similar
approach can and
has been successful
in Revere

eave
hborhoods
w parks?

Who will protect
and maintain parks?
- Neighborhood watch
- Community Groups
- Business Association

E TO THINK
T EQUITABLY
IBUTING
T PARKS
EEN
HBORHOODS

NEED TO HAVE
EYES AND FRIEND-
SHIP IN THE
COMMUNITY.

Similar
Move benches
from nearby
Install Cigarette
Butler

hirley
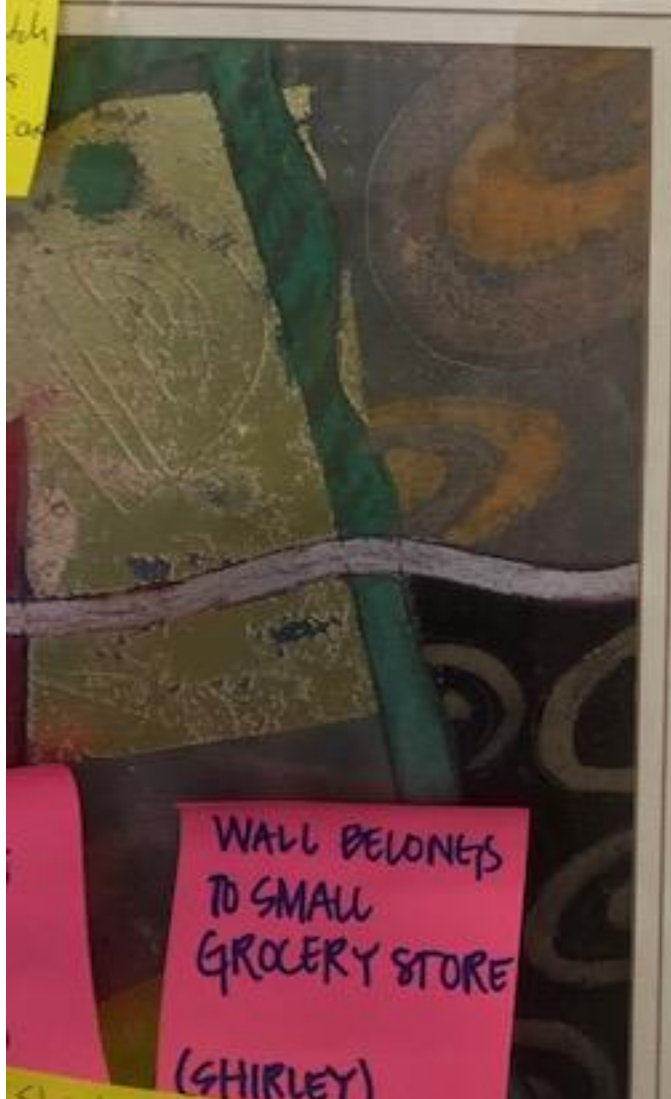olorful plants
orful shade
trees

ss +

TWO SMALL
FOR ANYONE
TO DEVELOP.

(SHIRLEY)

WALL BELONGS
TO SMALL
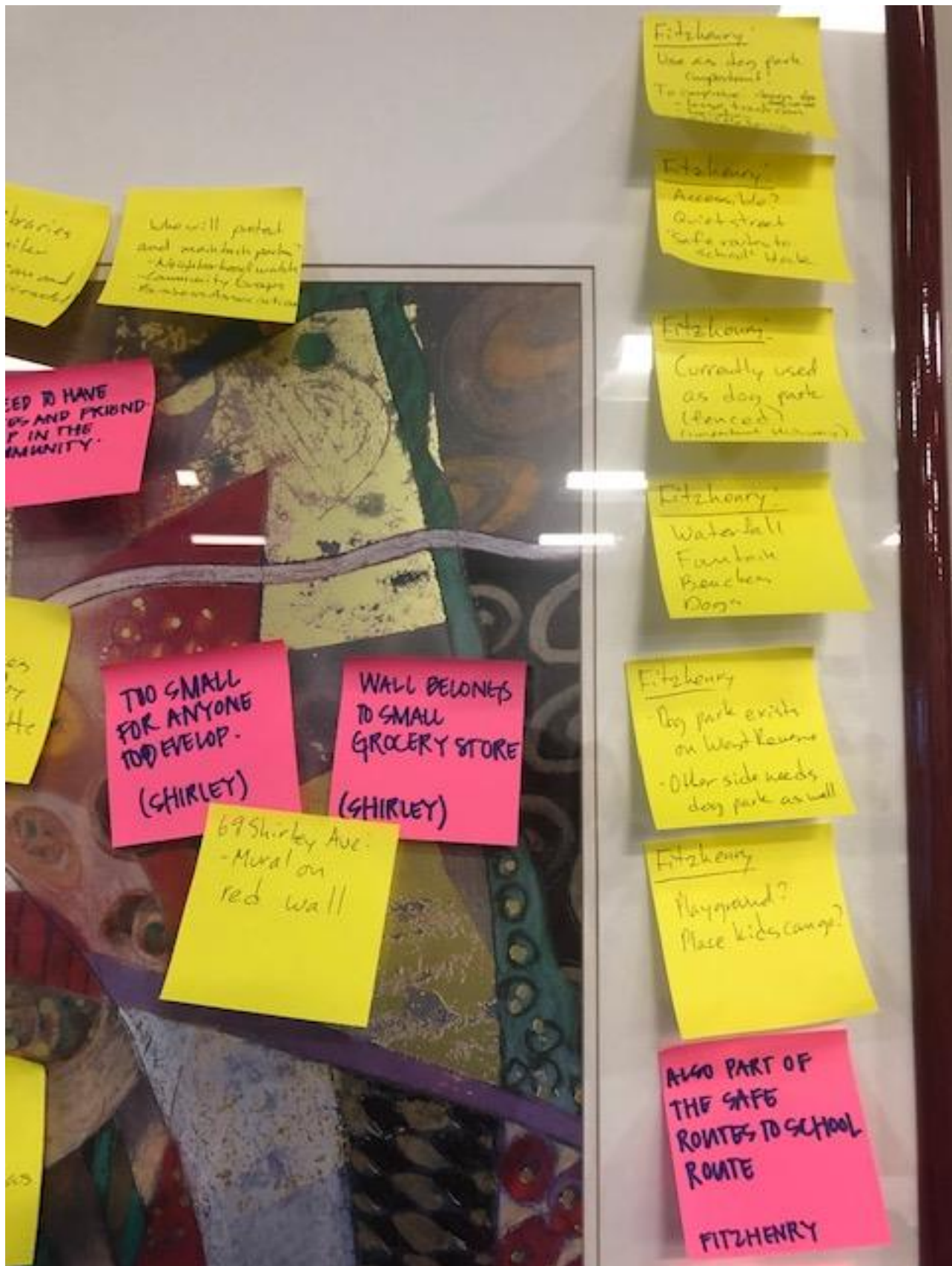GROCERY STORE

(SHIRLEY)

69 Shirley Ave:
- Mural on
red wall

Fitzhenry:
Use as dog park
important!
To improve: bags for
- large trash can dog waste
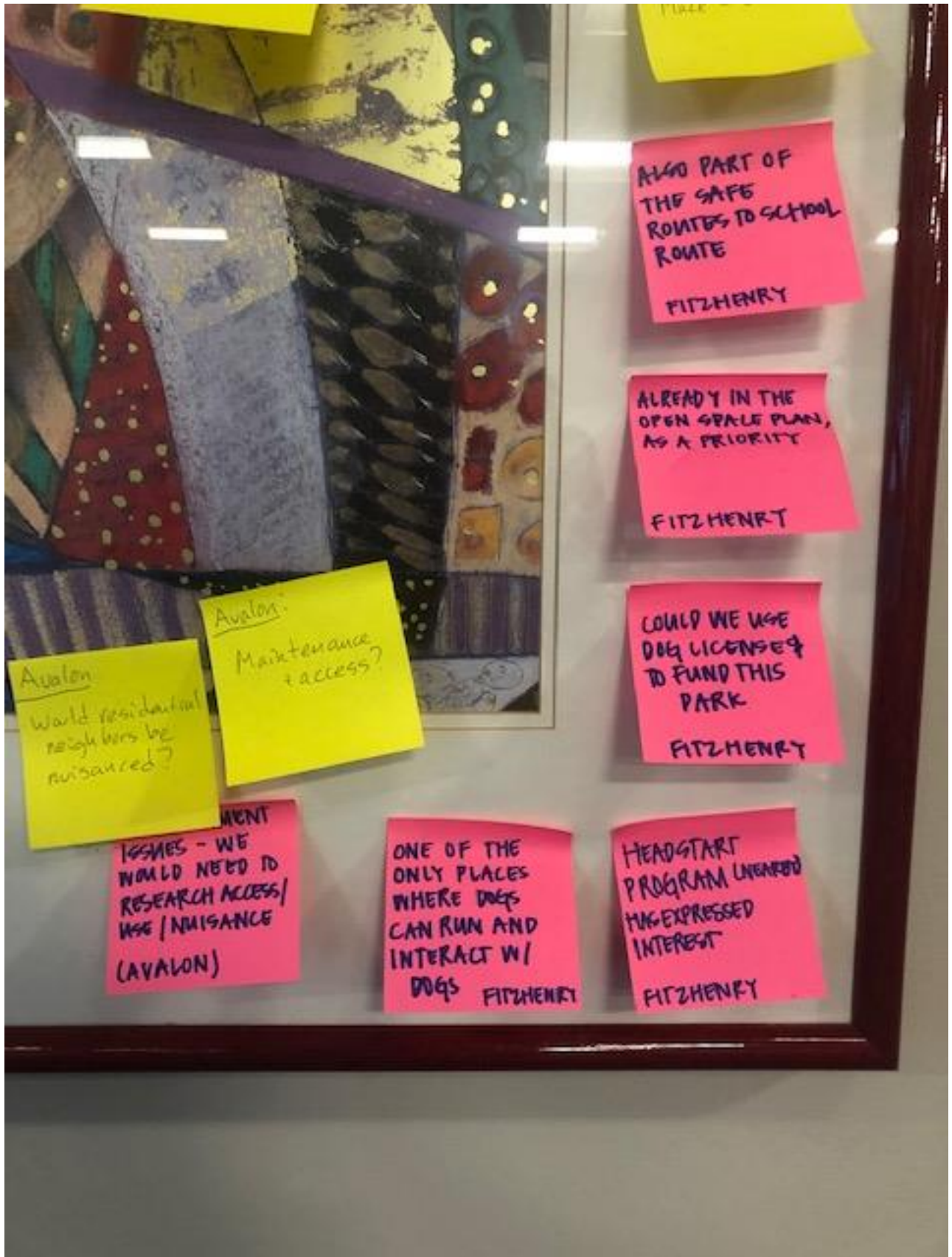- benches
- a little lawn
  free maintenance

Fitzhenry:
Accessible?
Quiet street
"Safe routes to
school" block

Fitzhenry:
Currently used
as dog park
(fenced)
(important thisway)

Fitzhenry:
Waterfall
Fountain
Benches
Dogs

Fi...
• Dog park exists
  on West Revere
• Other side needs

WALL BELONGS
TO SMALL
GROCERY STORE

(SHIRLEY)

LET THE
COMMUNITY
DECIDE WHAT
THEY WANT TO
HAVE HAPPEN
(SELL OR BUILD)
OAK ISLAND

WATER FOR A
SPLASH PAD
COULD COST
$ 100,000 / YEAR
OAK ISLAND

Arcadia
Splash pad for
kids?
Expense concerns.

COULD SELL
PROPERTY TO
HOME OWNER
AND USE $ TO
FUND ADD'L PARKS
OAK ISLAND

Arcadia
-White house uses
as their own yard
(adjacent)

Arcadia
Health equity,
concerns-
would be good to
have public space

Arcadia
A beautiful spot
in a depressed
area

Shirley Ave
Can businesses
contribute, get a
plaque?

WE