2.5 | Program Activities

Herter Park offers a wide range of visitor, recreational and permitted uses that contribute to its vibrancy and enduring popularity. The park attracts a diverse audience that enjoys informal recreation: at any given time you might encounter caregivers with small children, elderly doing Tai Chi, recreational runners, teens practicing their juggling skills, large families having a picnic outing, and people watching rowers glide on the river. Drum Circle is a common sight and sound, and the amphitheater offers space for spontaneous performances, as well as serving as a location of AA meetings. The Program Activities Diagram and the images below present the range of activities and their locations in the park.

Figure 2-37. Examples of visitor recreational uses and facilities that support them.

Visitor and Recreational Uses

- Artesani Playground, updated extensively in 2019, is a magnet for younger children. In summer the lifeguard-monitored wading pool and spray deck are often filled to capacity with additional visitors waiting outside to be admitted. (The lifeguard break room and pool storage , currently housed in temporary shed-like structures, are reviewed in more detail further in this report.)
- Artesani Comfort Station includes restrooms and changing rooms; it is the only permanent restroom facility in the park, and open seasonally. During the summer months and for special events the DCR provides portable toilets at several locations.
- There are picnic tables provided at several locations. There are no grilling stations; charcoal use and open fire are not allowed.
- There are no drinking fountains other than at the Artesani Comfort Station, and the community has expressed the need for additional water fountains throughout the park.

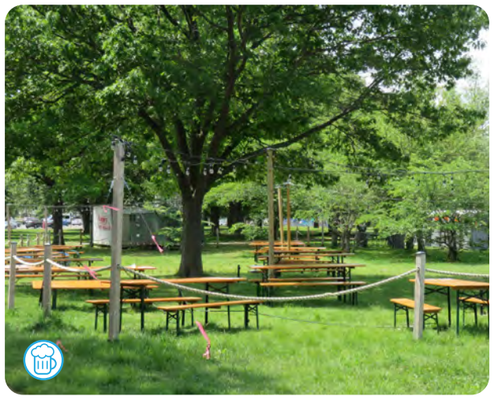


Figure 2-38. Permitted site uses enrich the park program: public boat rental, beer garden, Henderson Boathouse, and a Herter Amphitheater event (image credit: Solomon Foundation).

Existing Program Activities Diagram

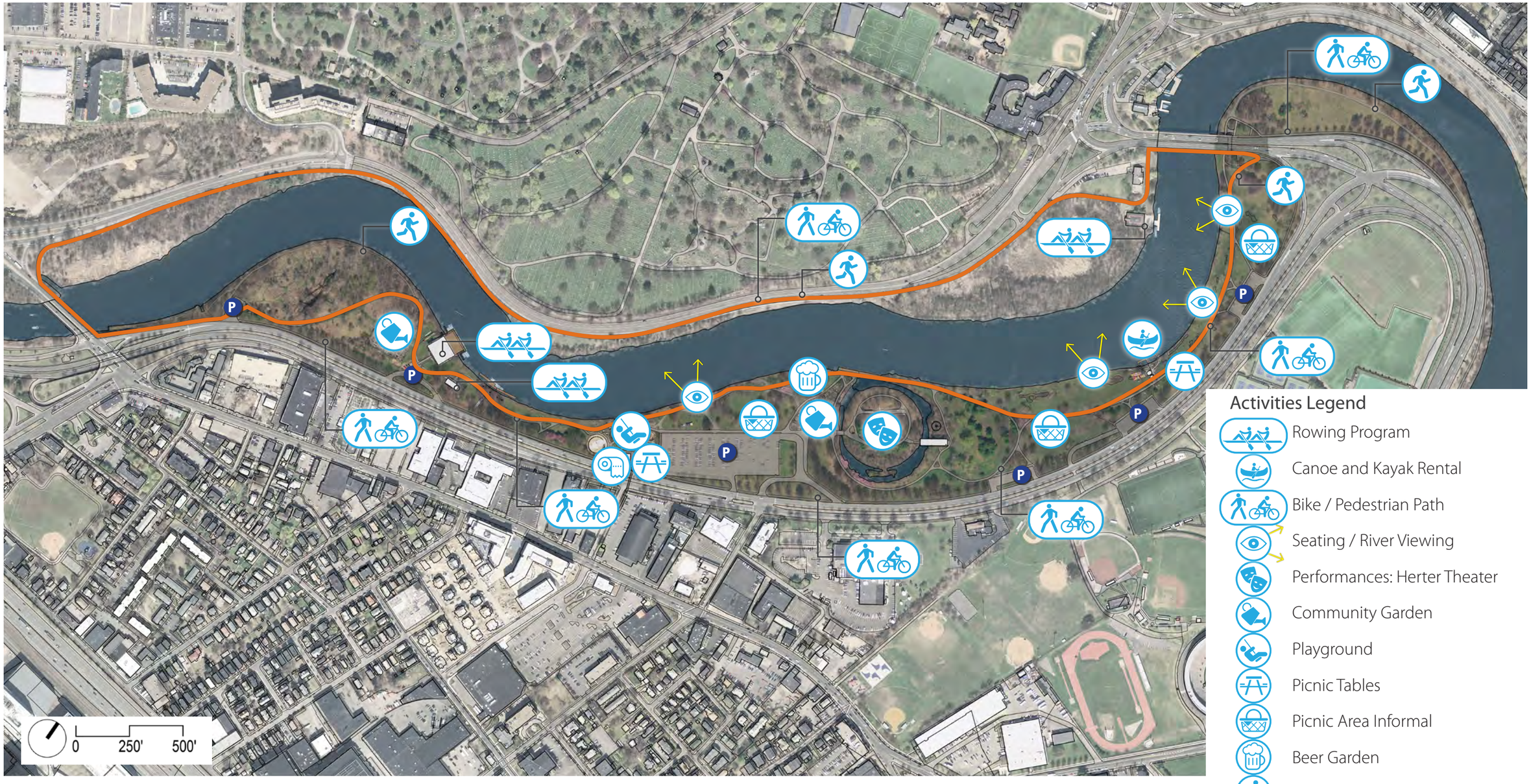


Figure 2-39. Existing program activities diagram.

Permitted Uses

Several organizations hold permits to offer their programming to either the general public or to their member audience. These include the following:

- Public Boat Rental (Paddle Boston) offers rental for canoes, kayaks and paddle boards to the general public; their dock per agreement is also available to those that bring their own boat.
- Beer Garden (Night Shift Brewery Owl's Nest), is a seasonal use.
- Herter Amphitheater Program, (Friends of Herter Park) organizes open-air performances for the general public. (The amphitheater is reviewed in greater detail further in this report).
- Henderson Boathouse, (Northeastern University), offers a dock and rowing boat storage to members.

Currently Non-Permitted Uses

There are a few organizations that utilize the park but currently do not hold DCR permits, including:

- Herter Community Garden (established 1976) – located west of the moat, offers about 70 gardening plots to its members.
- Charles River Community Garden (established 1980) – located west of Henderson Boathouse, offers gardening plots to its members.
- Pollinator Networks Garden (established c. 2020) - located adjacent to Herter Community Garden, offers tours and classes about its program and pollinator garden installations (see *https://www.pollinatornetworks.org*).
- High School Rowing (Boston Latin and Brookline High School) – the two school's 240-person rowing program has been using the garage and land next to Henderson Boathouse, without access to restrooms and drinking water. The garage does not allow boat storage, so the numerous boat racks and launches are taking up a large area outdoors, contributing to soil compaction and circulation issues. During their season they set up a floating dock, which off-season is also stored on the grounds.

Programmed Events

Herter Park is the most event-programmed park in the DCR system. Its relatively flat topography, wide open areas, and access to the water sheet are great assets making Herter a favorite location of walkathons, running races, the Adaptive Recreation Fair and Adaptive Cycling Event, and Run of the Charles Canoe and Kayak Race. Head of the Charles Regatta (HOCR), is by far the largest event. Most events are scheduled from October to Memorial Day, to allow full community use during the summer.

- Adaptive Recreation Fair, held the 1st weekend in June, celebrates accessible outdoor recreation for people with disabilities. Its setup on Artesani Parking Lot and the adjacent lawn is challenged by the lack of accessible curb ramps between the lot and the adjacent park.
- Head of the Charles Regatta (HOCR), held the second weekend in October, is a massive international event that brings in 11,000 competitors, and $60M in economic impact to the region. This yearly event requires highly organized logistics, setup and break-down over 2 weeks, and restricting of general public uses during the event. The event has a large footprint extending from Artesani Playground to Eliot Bridge, with exhibitor and spectator tents and various amenities setup along the shoreline and the main park paths. The Artesani Parking Lot accommodates 70-90 trailers, with another 30-50 parked elsewhere in the park, typically on lawns.
- Poor drainage and puddling have been a problem for the event setup, so in recent years HOCR has been using temporary flooring in some areas. Other issues that were brought up include the lack of electrical power substations, which necessitates the organizer to provide 24 diesel-powered generators; and the safety of access from the eroding banks to the temporary event docks.
- HOCR is a valuable event, but its impacts on the park are significant. Prior to the event, bank vegetation is required to be trimmed to allow for viewing of the races. Trucks and trailers used for the spectator facilities setup often drive and are parked on lawns and near trees, causing soil compaction that contributes to poor drainage and weak lawns, damage to tree roots by equipment and tents, and damage to bank during install and removal of temporary floating docks. The HOCR provides site restoration after the event, which includes lawn decompaction and overseeding; but because the event is late in the growing season the lawn has poor conditions for establishment. DCR and HOCR intend to collaborate on an event master plan to address these issues.

Figure 2-40. Examples of programmed events at Herter Park. Image credits: HOCR, DCR, web.

Program Activities Recommendations

- Formalize and improve the design of the park features that allow flexible use of the space for informal and programmed activities, such as event and picnic lawns. Provide soil, drainage and other stormwater improvement at heavy-usage areas and event setup areas.
- Formalize access points to the water sheet for everyday use and special events. Replace bank vegetation with low growing native species that don't require annual cutting for special use events.
- Provide a safe and prominent connection to the Smith Playground across Soldiers Field Road, to link to its play fields, basketball courts, dog park, and a children's playground, and to foster a symbiotic relationship between the two recreational open spaces.
- Provide universal accessibility improvements at the Artesani Parking Lot and throughout the park.
- Improve Artesani Playground with a new Lifeguard / Aquatic program facility; shade structures for the Wading Pool waiting area, and additional picnic tables.
- Introduce a Nature Play area. The artist Mitch Ryerson, based in nearby Allston, is renowned for creating wood play sculptures and his work would be desirable in the park.
- Provide additional docks for public canoe and kayak use, fishing, and closer access to the water.
- Improve the accessibility of the community gardens by providing better accessible paths and raised garden beds. Formalize their usage with agreements with the DCR.
- Formalize the two present high school rowing programs with agreements with the DCR. Consider a new facility for High School Rowing.

Facilities of Special Master Plan Consideration

Herter Amphitheater

At the heart of the Herter Park, accessed via a bridge over a moat and hugged by tree-planted landforms, the Amphitheater is a facility of cultural significance and a "magical place" - as described by some community members. It is an open-air performance venue that has been in existence in its present form since 1979, when the space was redesigned from its original much larger 1959 configuration. (For more information, see *Chapter 2.1: Park History*.)

The amphitheater is a unique feature that distinguishes Herter Park. Its qualities include the intimate scale and the sense of being immersed in nature, with glimpses of the river beyond. This sense of being a world apart is a benefit, because it provides few distractions from the park's other activities when it is in use; but also a drawback, because it makes it feel isolated and invisible. Without clear wayfinding signage present, there's little to draw the visitor. After dusk when the rest of the park is not in use, and with the lack of adequate lighting, the path to the theater may feel unsafe. And for events with hundreds of visitors, a single bridge to the island is a substantial safety concern.

Since 2015, the Friends of the Herter Park, a non-profit organization, has been maintaining the Amphitheater and providing free concerts and plays. However, without a canopy to protect the stage from precipitation, these events can only be held when the weather is dry due to electrical equipment use. There are other challenges: Obsolete stage lighting; lack of support facilities for storage of equipment, props, or concessions; no space for performers to change or wait between sets; and no separate restrooms for the cast and crew. Accessibility is also a challenge: Steep approaches to both the top and the bottom of the seating, very steep slopes within the audience area itself, and an inaccessible wooden stage. Finally, mosquitoes from the stagnant moat are a great nuisance.

Herter Amphitheater General Recommendations

Improvements to the Amphitheater should prioritize the safety and accessibility of the space, followed by audience and performer amenities. Recommendations include:

- Improve accessibility to the Herter Amphitheater, the stage, and the seating.
- Provide a new bridge to the island for a second means of egress and for better integration with the park.
- Upgrade the electrical infrastructure and site lighting.
- Provide a canopy over the stage, with integrated stage lighting.
- Provide storage and support amenities (Green Room, changing rooms) for the theater program and for performers.
- Celebrate the uniqueness of this park feature with wayfinding, park sculpture, and banners announcing the space and the programs.
- Consider a terraced lawn audience area rather than a paved slope.
- Improve the moat hydrology along with other measures to diminish pest populations (mosquitoes).

For more specific recommended improvements for the Island and Amphitheater, refer to Part Three of this report.

Figure 2-41. Amphitheater existing conditions.

Herter Center

A gem of a building originally created to be an art gallery, the Herter Center has hosted various uses, none of them long-lived, and is currently vacant and in deteriorating condition. Over the years its original form has changed to lose some of its original transparency. What was originally an open ground floor with a small "L-"shaped footprint, including just a restroom and a stairwell, was later enclosed and some of the glass panes on the second floor were infilled with solid panels.

Because of its prominence and cultural value, this building is worth the investment of restoring it as an active facility that would capitalize on its central location and visual connection to the river. There are clearly challenges associated with the restoration of this cultural landmark to meet current codes. A second means of egress is required from the second floor, most likely an elevator to be accessible to all. In addition, the building will also need to meet current energy codes and will require substantial system updates.

Herter Center General Recommendations

Rehabilitation of Herter Center is necessary to help preserve this cultural landmark and turn it into a functional park facility. Ideally the facility should include a program that generates revenue to supports its upkeep and operations.

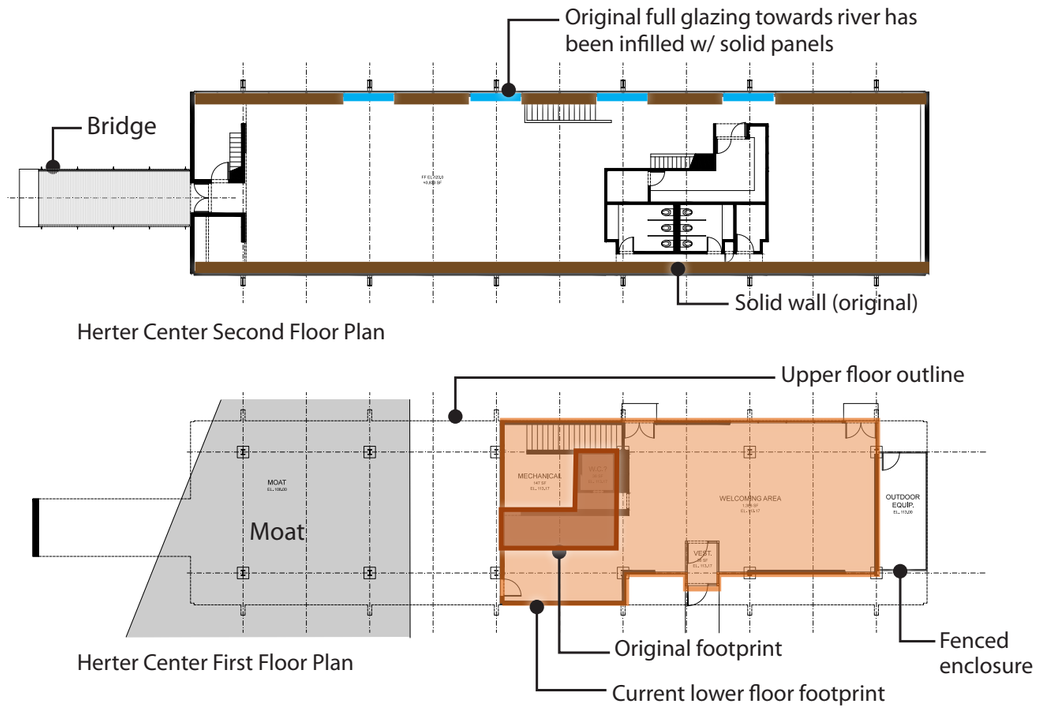


Figure 2-42. Changes to Herter Center from the original design

- Development options may include:
  - Single tenant (≈5,200 SF, on two floors)
  - Single tenant (≈3,800 SF on upper floor) with open covered public space at ground level
  - Two tenants (≈3,800 SF on upper floor and ≈1,400 SF on lower floor)
  - Combination of tenants
- Possible program uses discussed in the past include:
  - Herter Amphitheater support space
  - Rowing-related use
  - Season cafe / refreshment stand
  - Environmental education center
  - Public meeting space
  - Art exhibit space

For more specific recommended improvements to Herter Center, refer to Part Three of this report.

Figure 2-43. Herter Center existing exterior conditions.

2.6 | Visitor Experience and Wayfinding

Different visitors experience the park in different ways and find many sources of enjoyment. Some factors that the Master Planning process identified as important to the visitor's comfort and enjoyment of Herter Park include the connections to the water, site furnishings, site accessibility, and wayfinding.

Connections to the Water

What we repeatedly heard from the park users is their appreciation of the expansive open space along the Charles River, and the benefit of being able to enjoy the connection to the water. These are invaluable qualities that Herter Park generally provides - yet when we look more closely, we start recognizing present challenges to visual and physical access to the river. For example, the paths in the West End and past the Eliot Bridge are close to the bank - yet the bank is in some areas overgrown with invasive vegetation that is impairing the views, as well as reducing habitat quality. On the other hand, where the lawns are cut close to the edge allowing views and proximity to the water, this causes other issues such as increases in stormwater flow and bank erosion, elevated water temperatures, and easy access for Canada Geese with the associated nuisances.

There are also few opportunities to come in closer proximity to the river and access to the water sheet. The boardwalk north of the island is suitable as a sitting / fishing node, yet it is too narrow as it also has to accommodate heavy bicycle and foot traffic passing through. The man-made banks, paved with granite slabs, were not designed with the water access in mind - they are generally steep and often eroding. There are a few locations where users have created informal access to the water, most notably along the bank north of Artesani Parking Lot, some probably related to the access to temporary docks typically placed in this area during Head of the Charles Regatta. The public has expressed a desire for a public dock for fishing and water sheet access for kayak / canoe use in addition to the existing canoe and kayak rental facility.

Figure 2-44. The Herter Park users seek a close visual and physical connection to the water, yet few formal opportunities for access to the water exist.

Connections to the Water Recommendations

- Maintain existing views and vistas to the river, Eliot, and Arsenal St. Bridge.
- Provide additional vista openings at a few key locations where the views are obstructed. Banks should remain densely vegetated but with low growing vegetation, or otherwise stabilized for erosion control at key vista points.
- Provide varied opportunities for universal access the water's edge - smaller maintained overlooks, stepped structured features, and additional public docks for fishing and boat launching.
- Integrate environmental education opportunities to draw in visitors and educate about the Charles River habitat, history, and other issues.

Figure 2-46. Structured bank edge example: wood deck and granite stepped bank feature, at St Lawrence River, Quebec.

Site Furnishings and Amenities

The site furnishings palette is sparse, consisting primarily of standard park benches (the DCR Shurcliff bench) and picnic tables, and a few non-standard wood backless benches in the West End woodland area There are no bicycle racks, water fountains, canopy shelters, or other amenities typical of other Charles River Reservation parks. A public art feature, a circular seat wall with a memorial to Christian A. Herter and his wife, is located north of Herter Center.

Trash receptacles are largely absent. The DCR is moving away from providing trash receptacles, in favor of dumpster containers provided near popular picnicking area - at the Artesani lot and at Parking Lot # 2.

There is only one permanent restroom facility, located at the Artesani Playground, and open seasonally. During events and the busy summer months the DCR or the event organizers provide portable toilets; these are clustered at the Canoe and Kayak Rental and at the Amphitheater during their operating season. Along with the dumpster containers, these are necessary comfort amenities but can be visual nuisances.

Figure 2-45. Standard DCR Schurcliff Bench (left). DCR picnic bench at Artesani Playground (right).

Site Furnishing Recommendations

- Utilize the standard approved DCR furnishings models for uniformity across the system. Ensure compliance with accessibility standards.
- Provide additional visitor amenities such as drinking fountains and bicycle racks.
- Expand the picnic areas with additional picnic tables and gas-powered grills.
- Design and construct a new permanent restroom facility that would serve the park area east of Herter Center. This could be provided within the renovated Herter Center itself.
- Install screening structures for the dumpster and portable toilet areas. These should be placed in appropriate locations - by parking lots and not near the water - for convenient access by maintenance trucks and to avoid potential pollution of the river.

Figure 2-47. Example of a portable toilet screening structure for portable toilets, at Farnham-Connolly State Park, Canton, MA.

Site Accessibility

The DCR is committed to providing universal accessibility to all users to the greatest extent possible. The DCR had previously commissioned the '*Herter Park, Brighton, MA, Program Accessibility Assessment*' prepared by the Institute for Human Centered Design, dated April 2021, which details various accessibility issues; the analysis and general recommendations below are based on that report, with additional site observations as well as input from the DCR Universal Access Program.

Exterior Routes: Most of the pedestrian circulation is accessible, with several exceptions:

- Path exceeding running slope of 1:20 (5%) are most prominently found on the approach and around the amphitheater (steepest slope 13%) and around the community garden (steepest slope 15%). These follow an established site topography, and corrections require closer design study.
- Cross slopes exceeding 2% were noted at a few locations, along with surfaces that are not stable, firm and slip resistant, or have level changes over ¼". The latter were mostly at deteriorated walkways that require repaving, at which time these defects should be corrected.
- Informal dirt paths at the west end of the park, from the Soldiers Field Road sidewalk down to the park, are exceedingly steep, over 12%, which might be difficult to correct without affecting the established tree vegetation around them.
- At the north side of Eliot Bridge the multi-use path switchback has a steep portion of over 8.5% slope. Reconfiguring the switchback to less than 5% slope, and a turnaround opportunity before the bridge could create better options for bicyclists with disabilities.
- At the Dr. Paul Dudley White along the Soldiers Field Road, a number of curb ramps at the driveway crossings are not compliant with accessibility regulations.
- The approach ramps to the Telford Street pedestrian bridge exceeds the running slope of 1:12 (8.3%).

Parking Lots non-compliant features include:

- Lack of accessible curb ramps at Artesani Parking Lot to the park sidewalks has been a challenge for people with disabilities. The Adaptive Recreation Fair hosted by the DCR Universal Access Program, which is typically staged in the lawn next to Artesani Parking Lot, has required portable ramps to be placed at the parking lot curbline for access to the event.
- Inadequate numbers of standard and / or van accessible parking spaces at all parking lots (see *Chapter 2.3: Arrival, Circulation, and Parking* for more details). Lack of accessible parking signs at Artesani lot and other locations. At the Artesani lot, because of the way the parking is laid out, providing these parking signs could be an obstruction during the Head of the Charles Regatta, which uses the lot for trailer parking; and for the winter use of the lots for snow storage.

The Amphitheater, along with the previously noted steep approach paths, also presents the following challenges:

- Excessive running slopes at the top of the sitting area, and within the sitting area.
- Lack of assigned accessible seating.
- Lack of accessible route to the stage.

Site Furnishings Accessibility relates primarily to sitting and picnic accommodations:

- The standard DCR bench utilized at the Charles River Basin parks and Herter Park is the Shurcliff bench, which does not have arm rests. Few of the existing benches have adjacent paved companion seating area. The majority of benches are on an accessible route, but there are also some that are set within the lawn and away from paved paths.
- Many of the existing picnic tables lack knee clearance (27" h x 30" w x 19" d knee clearance), or are not located on accessible routes. Although many of the newer tables have concrete paving, they lack the 48" clear floor space around.

Community Gardens largely do not have the required path clearances and accessible user amenities recommended for Universal Design, such as accessible gates, garden beds, seating, restroom facilities etc.

Site Accessibility Recommendations:

- Reconstruct the path switchback east of Eliot Bridge with than 5% longitudinal slope.
- Reconfigure the parking lots to provide the required numbers of Standard (102" wide car space and 66" wide aisle), and Van Accessible parking spaces (102" wide car space + 102" wide aisle). In each parking lot, accessible spaces are distributed towards park destinations. Provide appropriate parking signs at each accessible parking space.
- Provide multiple accessible curb cuts from the Artesani Parking Lot to the adjacent walkways.
- Retrofit existing bench areas so that at least 20% of all park benches have bench pads that accommodate companion seating (38"x 48" clear space adjacent to bench). At new

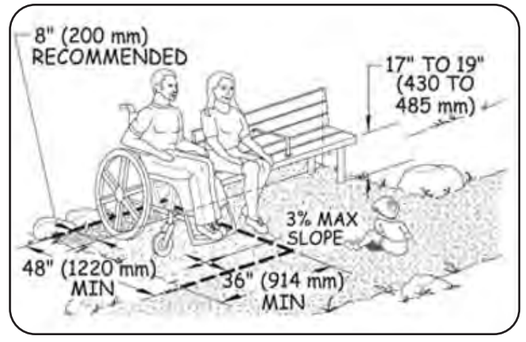


Figure 2-48. Recommended layout of a bench pad for companion seating. From the USDA Accessibility Handbook for Outdoor Recreation and Trails.

construction all single benches and all bench clusters (e.g. sets of 2 to 5 benches) should include such companion seating pads. Provide shoulder alignment with the wheelchair space, measured 36" from the front of the wheelchair space. System-wide, consider modification to the Schurcliff bench design with armrests, which should be provided at 50% of all backed benches.

- All picnic tables should be an accessible model with knee clearance (27" high x 30" wide x 19" deep), and located on accessible routes; provide min. of 48" clear floor space around picnic tables.
- At Herter Amphitheater, study the feasibility of an accessible approach. Provide accessible seating and an accessible stage in addition to reconfiguring the steep audience area into a terraced design.
- Provide accessible connections to Elliot Bridge and a bike path switchback before the bridge.
- At the Community Gardens, design garden spaces for all types of disabilities including developmental and visual impairments, incorporating sensory elements and educational components.
- Provide accessible paths in the community gardens, meeting 521 CMR 20.00 and ADASAD Chapter 4. All amenities should be accessible as well, including benches, shelters, and water hydrants. Locate accessible parking in the vicinity of a garden entrance.
- At a minimum 5% of garden beds (but no less than 4 beds) should be made accessible. Raised beds increase access for many older gardeners who have functional limitations but who may not identify as having a disability. Raised beds should be provided in several different designs to allow for different heights and different approaches (forward and side). Individual modifications could be provided by the DCR per user's request.

Figure 2-49. An example of a variety of accessible garden beds, at the Universal Garden in Boise, ID. Image credit: https://adata.org.

Signage and Wayfinding

Wayfinding is a unified network of signage that orients and directs travelers to and from destinations, allowing visitors to navigate more easily. The DCR system-wide wayfinding relies on the '*DCR Graphic Standards Manual*' - a compilation of signage guidelines ranging from various facility identification signs to regulatory signs. Part of the project scope was to review the existing signage in the park to identify what is present, what is missing, and to assess how this aligns with the DCR's intended signage hierarchy.

A more detailed signage inventory report is included in the *Appendices* of this report. In summary, we found that the signage at Herter Park is currently heavily weighted towards Regulatory, Rules and Safety Signage, with few examples of wayfinding. When comparing to the *DCR Graphic Standards Manual,* there are no **Main Identification** signs identifying the major public entrances, and few examples of **Secondary Identification Signs** throughout. There are no **Welcome / Orientation Signs**, no **Interpretive Panels** reflecting the park history and other topics of interest, no **Internal Park Information** signs flagging directions to specific locations like the Amphitheater, Herter Center, or the Public Boat Rental, and no **Contact Station** signs which give at a quick glance some immediate messaging to visitors. Generally speaking, you are told what you can't do, but you are not given direction as to what you can do.

Signage and Wayfinding General Recommendations

Specific signage recommendations are included in Part Three of this report. The general recommendations are:

- Develop a clear wayfinding framework of well designed and well placed signs that create aesthetic harmony, work to help visitors find their way, promote a pedestrian friendly environment, link uses and destinations, and enhance a place's identity.
- Include informational, directional, and identification strategies that are intuitive, cohesive, and easy-to read, and should consider people of all cultures and abilities.
- Align the wayfinding with the DCR Graphic Standards, while finding opportunities for refinement.

Figure 2-50. The signage is dominated by clusters of regulatory signs and very few other wayfinding signs, few of which are consistent with established style guides.

2.7 | Stormwater Infrastructure

Stormwater Issues

The present stormwater challenges at Herter Park are quite significant and often interfere with the use of the park and its maintenance. The most prominent issues are illustrated on the Stormwater Diagram and discussed below:

East Lawn Drainage Issues

- The low-lying parkland between Herter Center and Eliot Bridge is prone to ponding at various times throughout the year. The ponding problem is likely a result of a combination of factors including high ground water and soil compaction. The ground in the area is only two to three feet higher than the water level in Charles River– so it can be assumed that the ground water is close to the surface and there is limited soil depth available for infiltration. A major contributor of soil compaction is vehicular use of lawns during the Head of the Charles Regatta event; heavy usage of this area for other park activities also plays a role.
- The ponding in this area has been impacting the use of the parkland for recreation and events. In recent times, the Canoe and Kayak Rental managers have been using special mats to direct foot traffic / reduce compaction; and Head of the Charles Regatta has been using portable decking over the known mucky areas.

Parking Lot Flooding

- The low points of Artesani Parking Lot are lower than the top of bank, and the catch basin invert is lower than the drain discharge into the river. This contributes to poor drainage during larger storm events causing runoff to back up and pond onto the paving. A potential solution would be to raise the grades at the parking lot, which would have the added benefit of allowing a greater depth for sub-surface stormwater treatment.
- Parking Lots 1, 2, and 3 also experience flooding. Lot 2 is paved with porous asphalt, which has not functioned as hoped, potentially due to poor subsurface soils and high ground water. Grading changes (raising the paving elevation) along with surface stormwater treatment are options for resolving the parking lot drainage issues.

Moat Sedimentation

- The original depth of the moat was about three feet, according to 1959-1960 record drawings. Sixty years later, it is filled with sediment to a few inches below water level in some areas. The moat's shallow, stagnant water is a breeding ground for mosquitoes, which are a great nuisance to the park users. The existing drainage system has played a significant role in this problem: There are two outfalls from Soldiers Field Road that discharge untreated road runoff into the moat. The Charles River currents have deposited sediment near the moat opening to the river, reducing the water circulation within the moat and adding to the problem. Stormwater improvements that treat the runoff before it reaches the moat should be an important part of the solution.

Discharge of Untreated Stormwater

- The park drainage infrastructure is integral to the Soldiers Field Road drainage system, which collects road runoff and discharge directly into the Charles, bringing salt, sediment, and other pollutants into the river. Many outfalls are below the river water level.
- In addition to the DCR's Soldiers Field Road system, there is also a significant Boston Water and Sewer Commission (BWSC) infrastructure. The drain pipe that runs under Artesani Playground is a collector for hundreds of acres of the Allston / Brighton runoff, which is also discharged without treatment; and an outfall structure near Arsenal Street Bridge appears inactive and filled with trash and debris, which is not only an eyesore but also a safety hazard due to its heavily deteriorated condition.
- Ideally the stormwater should be infiltrated or treated closer to the source; but Herter Park, as the end of the line of the DCR and BWSC infrastructure, could play a significant role in reducing the environmental impacts of stormwater discharge.

High Groundwater

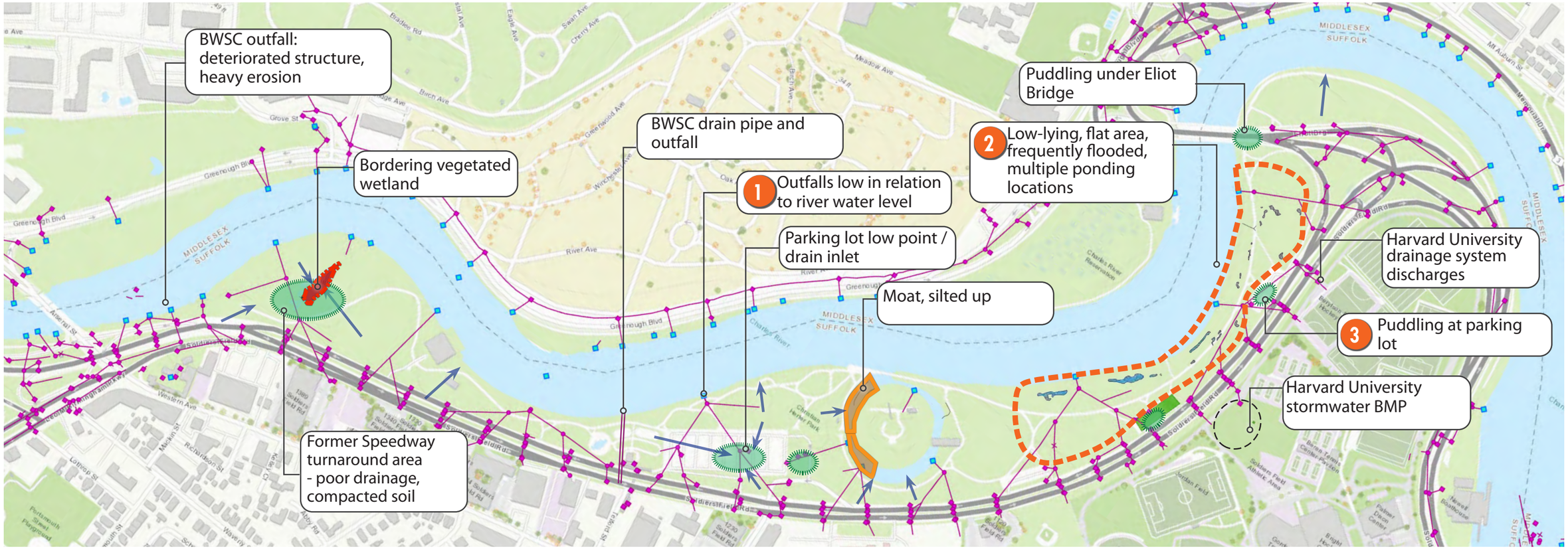
- While soil borings were not available for review as part of this master plan, it is assumed that some of the drainage problems at Herter Park are caused by high groundwater. The USDA Soil Survey classifies the underlying soils as "Udorthents - Wet Substratum" – which are described as excavated and filled sandy and gravelly human transported material over highly-decomposed herbaceous organic material. This is consistent with what we know about the construction of the park that filled over the existing tidal marsh. It is possible that the organic substratum in some areas is close to the surface and / or has an impermeable layer, causing saturated soils that contribute to ponding.
- The high groundwater is a challenge in creating infiltration BMPs such as bioswales, subsurface infiltration galleries, and permeable pavements. Green infrastructure and subsurface measures could still be used to provide pollutant filtering, lower peak runoff rate (attenuation), and lower discharge temperature.

Stormwater General Recommendations

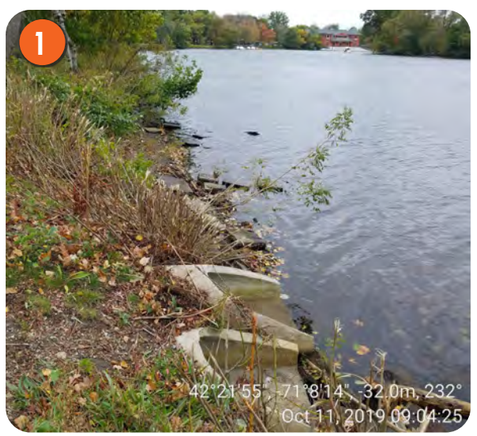
Below are general recommendations. Specific recommendations are discussed in Part Three of this report.

- Include green infrastructure for infiltration, sediment and pollutant removal, lower runoff temperature, and lower peak runoff rate (attenuation).
- Lower Charles River watershed is regulated for phosphorus discharges in stormwater. Groundwater recharge and infiltration with other Low Impact Development techniques should be prioritized where feasible. Poor soils in many areas of the park will restrict stormwater recharge. Prior to construction of new infiltration structures soil conditions should be evaluated to ensure soil suitability for successful recharge systems.
- Utilize a "kit of parts" - stormwater strategies that provide an attractive and functional park design:
  - Bioretention swales
  - Surface grading modifications
  - Subsurface drainage at high-use lawn areas
  - Reduction of impervious surfaces
  - Use of vegetation types to slow-down runoff or to "soak up" saturated moisture from soil.
  - Permeable paving is not expected to perform well due to high groundwater and soil conditions, except potentially at the West End parking. DCR uses vacuum sweepers that can provide the necessary pavement surface maintenance.
  - Disconnection of impervious surface is another important landscape design feature to enable runoff from paved or impervious surfaces to infiltrate in vegetated landscape to extent possible before stormwater enters drainage system and discharges to river.

Stormwater and Drainage Existing Conditions Diagram



Stormwater Infrastructure for Soldiers Field Road and Herter Park. Plan underlay: MassDCR MS4 Web Viewer.



Stormwater Infrastructure Legend

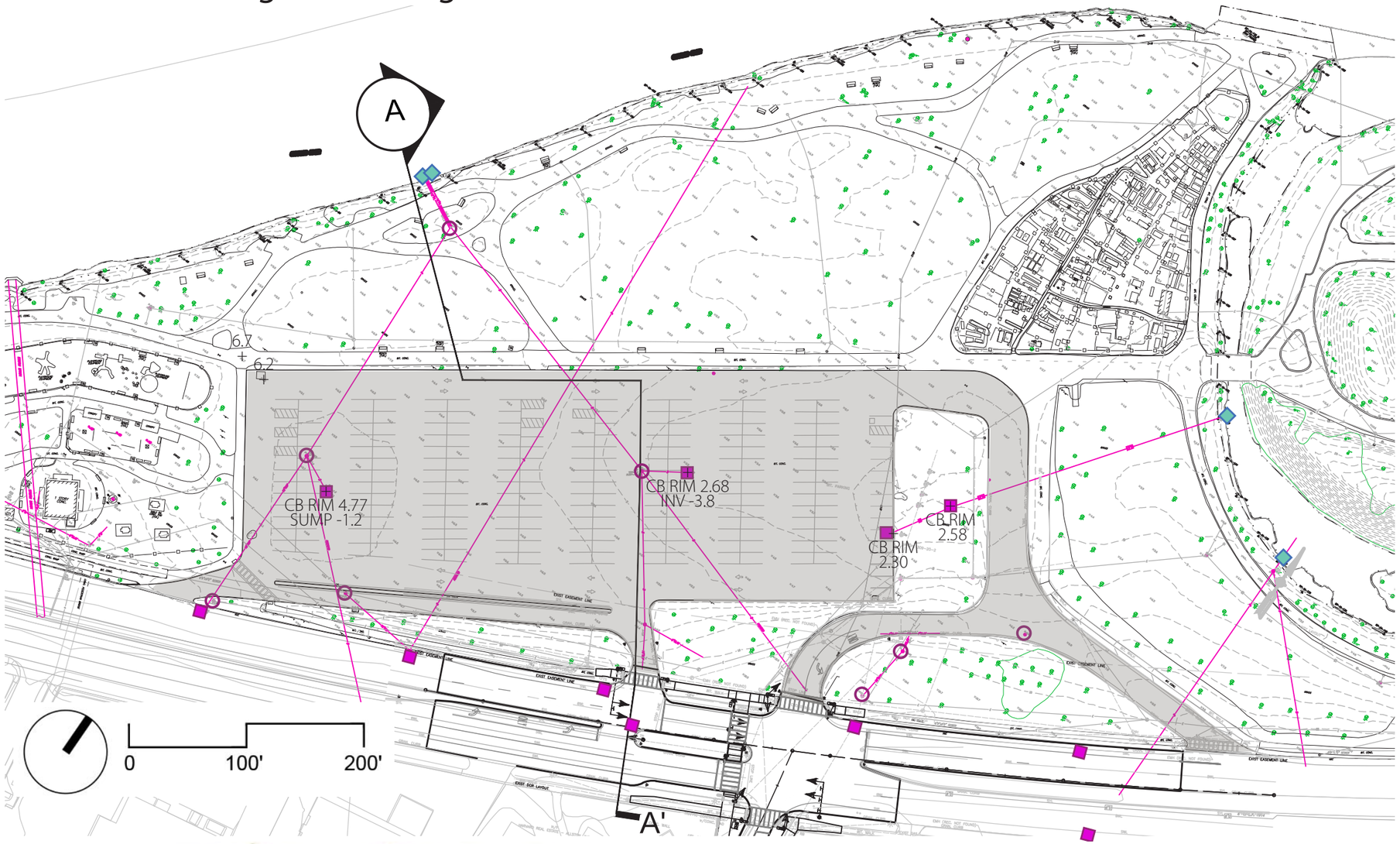
- Regulated Outfall
- DCR Inlet
- DCR manhole
- DCR linear feature (stormwater Pipe)

Drainage Legend

- Ponding / standing water
- Flagged wetland
- Poorly drained area
- Low-lying, flat area
- Direction of overland flow

Figure 2-51. Stormwater and Drainage Existing Conditions Diagram (above), and photos of noted issues. Photo #1 credit: DCR.

Stormwater: Artesani Parking Lot Existing Conditions



Stormwater Infrastructure Legend

- Regulated Outfall
- DCR Inlet
- DCR Manhole
- Drainage Pipe (from site survey)

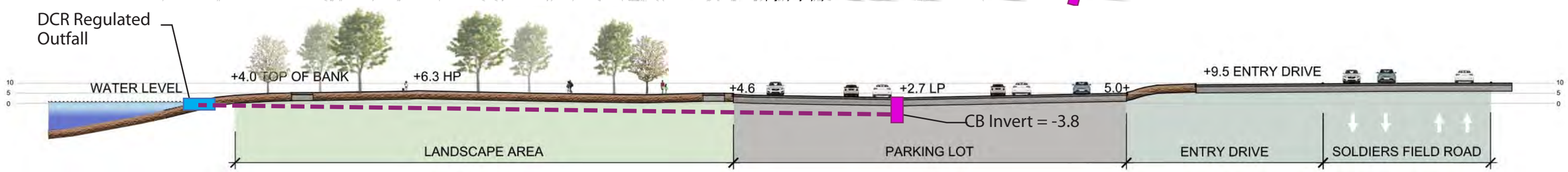


Figure 2-52. Stormwater: Artesani parking lot existing conditions.

2.8 | Utilities Infrastructure

Water Supply and Sanitary Sewer Issues

- Potable water supply and sanitary sewer are available at the Artesani comfort station and spray park, and the Henderson Boathouse. The Garage used by the high school rowing program does not have potable water nor sanitary facilities; this is an inconvenience for the rowing program participants who are not allowed to use the Henderson Boathouse facilities.
- There are several inactive water lines: to the Herter Center and further extending under the moat to the Herter Amphitheater; and east of Herter Center along the main path towards Eliot Bridge, which originally served several drinking fountains that are no longer present.
- The only public drinking fountain is located at the Artesani comfort station. The community has expressed the desire that drinking fountains / water bottle refill stations are provided throughout the park.
- There is only one fire protection hydrant, south of the Herter Center.

Water Supply / Sanitary Sewer Recommendations

- Provide drinking water fountains in several locations throughout the park. The existing inactive water lines are assumed to require replacement.
- Provide fire hydrants as necessary for fire protection of buildings and facilities.
- Rehabilitated Herter Center will require water and sewer infrastructure brought up to code.

Figure 2-53. An example of a drinking water and bottle refill station at Smith Playground.

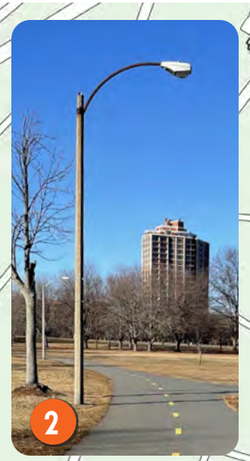
Site Lighting and Electrical Infrastructure Issues

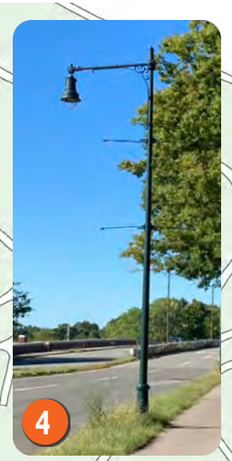
The analysis below is summarized on the Electrical Infrastructure Existing Conditions diagram on the following pages.

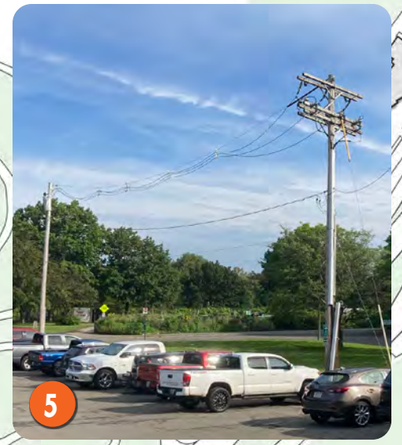
- Between the Artesani playground and Eliot Bridge, the park lighting consists of concrete 'cobra' lights that are owned by Eversource. These are direct burial poles which are not meeting current electrical codes. DCR's objective is to separate the park system from Eversource, and to install standard DCR lights that will be under DCR full care and control.
- Artesani Playground and Wading Pool site lighting are LED 'shoebox' lights, DCR owned, and on electrical service and meter at the Comfort Station.
- There is no park lighting west of Artesani Playground and east of Eliot Bridge.
- Along Soldiers Field Road park frontage, the existing road lights are concrete pole cobra-style lights. East of Eliot Bridge, the road lights have been updated with DCR standard ornamental fixtures.
- An overhead line on wood utility poles bisects the park from Artesani Parking Lot and over to a pole behind the Amphitheater stage. The existing stage lighting is connected with underground conduits from this pole. The Amphitheater electrical meter is paid for by the Friends of Herter Park.
- An important electrical manhole located at the Herter Community Garden is inaccessible (location not known).
- The inadequacy of the Amphitheater electrical infrastructure was brought up during the public process:
  - Site lighting to and around the Amphitheater is important for safety for events happening after dusk. Currently there are improvised lights on the bridge and temporary path lights that do not meet code.
  - The stage lighting is mounted on wooden utility poles that are unattractive and impractical.
  - There are no transformers and outlets for electricity near the stage for audio/visual equipment and other performance needs.
- The Head of the Charles Regatta brought up the lack of electrical power hookups as a challenge to running the event, which requires the organizer to provide 24 diesel-powered generators.

Figure 2-54. Existing Street Lights Infrastructure at Herter Park and Vicinity. Map source: DCR Stewardship Map application.

Electrical Infrastructure Existing Conditions Diagram







Charles River

4 Road decorative lights

Eliot Bridge

Underpass lights

No park lights exist east of this point

Inaccessible electrical manhole at community garden

7 Improvised light on bridge

5 Overhead power line

8 Path lights along theater approach

No park lighting exists west of this point

Connection pole for amphitheater lighting

2 Park 'Cobra' lights

1 DCR lights at playground

6 Spot lights on wood pole

Soldiers Field Rd.

3 Road cobra lights

3 Road cobra lights

3 Road cobra lights

Electrical Infrastructure Legend

1. Playground LED 'shoebox' light (DCR-controlled)
2. Park 'Cobra' light w/ concrete pole (Eversource-controlled)
3. Road 'Cobra' light w/ concrete pole
4. Road decorative light (DCR)
5. Overhead power line w/ wood utility poles
6. Spot lights on wood utility pole
7. Improvised light on bridge
8. Path lights
9. Underground power lines

Figure 2-55. Electrical infrastructure existing conditions diagram.

Electrical Infrastructure General Recommendations

- Replace the existing Eversource cobra light poles with dark-sky compliant LED light fixtures that meet DCR standards; DCR to take over metering, care and control.
- Replace the cobra-lights along Soldiers Field Road with LED light fixtures that meet DCR and IDA-IES Model Lighting Ordinance standards to reduce light pollution.
- Replace the overhead electrical infrastructure at Artesani Parking Lot with underground lines.
- Provide permanent site lighting from the Artesani Parking Lot to and around the Amphitheater. Provide electrical infrastructure for the stage lighting, audio/visual controls, and other electrical equipment.
- Provide durable utility bollards as supply points for electrical outlets at various locations to allow flexibility for seasonal and event uses that require power. The selected model should have access doors secured with lock and key to ensure safety and prevent unauthorized entry.
- Building restoration of Herter Center and new facilities should meet the Zero Net Energy requirements. A zero net energy building (ZNEB) is one that is optimally efficient, and over the course of a year, generates energy onsite, using clean renewable resources, in a quantity equal to or greater than the total amount of energy consumed onsite *(https://www.mass.gov/service-details/what-is-a-zero-net-energy-building)*. New buildings should provide solar photovoltaic arrays to generate electrical energy on site.
- Provide electrical vehicle charging stations.
- Consider extending the site lighting west of Artesani Playground along the main park path. Consider the use of solar lighting in areas where tree shading does not prevent adequate solar exposure.

For more specific plans see *Chapter 3.5: Utilities Improvements.*

2.9 | Landscape and Vegetation

Herter Park offers a diverse set of landscape areas with recreational and environmental value. Its expanses of open lawns are complemented by a mature tree canopy that consist of over 1,500 park trees and several naturalized wooded areas. The park is significant as part of a migratory bird corridor that includes the Charles River Reservation, Mount Auburn and Cambridge Cemeteries, and Fresh Pond Reservation.

Existing Landscape Types

The Landscape Areas described below are consistent with the classification and terminology utilized in the *DCR Charles River Vegetation Management Plan*. In general there are Naturalized Areas, which include Wetland, Wooded, Meadow and River's Edge landscape types; and Reservation Facilities, which include Lawn and Landscaped Areas. Analysis of these landscape types is illustrated with representative images and the Existing Landscape Areas Diagram on the following pages.

Type W - Wetland includes a bordering vegetated wetland in the wooded west end as well as two isolated areas immediately west of the Charles River community garden. These wetlands areas exhibit a significant presence of invasive vegetation, especially the small area south of the Charles River Community Garden.

Type T - Wooded includes the naturalized wooded areas at the west end of the park, on the south slope of the Herter Amphitheater island, and east of Eliot Bridge. The landscape character is densely wooded, however in the west end that is a result of an infestation with invasive buckthorn that dominates the understory.

Type M - Meadow is present at the west end of the park, intertwined with the Type T woodland and adjacent to the wetland found here. The vegetation includes species common at disturbed urban lands, with monocultures of ***Phragmites***, Japanese knotweed, garlic mustard, and staghorn sumac at the edges. The area coincides with the former turnaround loop of the historic Speedway; according to the DCR, soils encountered in this area are poorly draining compacted aggregate. This suggests that the Speedway roadbed was not removed but merely abandoned; subsequently urban volunteers and invasive vegetation have taken over. Soil borings are recommended to get a more complete understanding of this area, which may be useful in resolving its invasive vegetation issues.

Type RE - River's Edge consists of three distinct types: Low to medium herbaceous with shrub or tree overstory (Central area); medium to high shrub and overstory (East Lawn); and wooded banks (West End end past the Eliot bridge). In the East Lawn area, the non-indigenous false indigo *(Amorpha fruticosa)* is one of the dominant species. Riparian vegetation has numerous benefits, from providing wildlife habitat, maintaining shade and cooling of river's edge, reducing velocity of stormwater runoff, to stabilizing the bank. On the other hand, it is also important to provide the right balance of views to the river as well as access to the water sheet. For this reason, in the area of the East Lawn, the riverbank is trimmed down once a year for views and to facilitate the Head of the Charles Regatta.

Type L - Lawn is the predominant landscape type, featuring mown ground plane and scattered deciduous trees. The lawn areas are suitable for picnics, informal games and gatherings, and are also valued because of the flexibility in staging the park's largest event, the Head of the Charles Regatta. The lawns are not fertilized; in some areas the grass cover is sparse due to soil compaction or poor drainage. In some areas trees have over created a more closed canopy,

Type W - Wetland

Type T - Wooded

Type M - Meadow

Type RE - River's Edge

Type L - Lawn

Type LA - Landscaped Areas

Figure 2-56. Existing landscape areas at Herter Park - representative images.

while the ground plane is still maintained as lawn. Most of the park's trees were planted in the early 1960s when the park was redesigned, and are valuable for the shade and the landscape character they provide. Tree species include oak, maple, linden, London plane, a few giant willows, and a few groupings of flowering trees such as ornamental cherries.

Type LA - Landscaped Areas include the Charles River Community Garden, the Herter Community Garden, and the adjacent Pollinator Networks garden. These are cultivated landscapes not managed directly by the DCR. A terraced ornamental planting east of Eliot Bride also can be classified as a Landscaped Area.

Issues and Additional Observations

- At the west end, the steep slopes between the Soldiers Field Road sidewalk are challenging to mow. The ground cover here is well-established native meadow, with some invasive species present. The routine maintenance for these steep slopes should focus on invasive species control.
- Invasive species management is a major need in general, and in particular at West End woodland where large areas are overtaken by buckthorn, Japanese knotweed, *Phragmites*, and other invasive plants. Ecological restoration here would be a large-scale undertaking which would require ongoing maintenance over several years. The removal of the extensive buckthorn understory in the middle portion of this woodland would temporarily change the character of landscape from the present shady woodland to a more open meadow area with scattered clusters of non-invasive trees.
- In and around the community gardens, plant species have not been reviewed. Some gardens contain invasive or nuisance species.
- The river banks at the West End as well as east of Eliot Bridge are densely vegetated with vegetation that screens the views to the river. Initial selective vista pruning would allow transparency and increased sense of safety; but the goal is to convert vegetation to lower growing native shrubs that will continue to provide bank stability, wildlife habitat and river protection while still allowing river views.
- In the central area the river banks are mown to the edge, which is unfavorable for bank erosion. Lower-growing vegetation, such as wildflower strips, would be better for bank stability, and would reduce the Canada Geese access to the park lawns.
- Along the East Lawn banks, taller shrubs such as the ubiquitous false indigo screen the desirable views to the water. Cutting these shrubs for views and for the Head of the Charles Regatta encourages their growth; the DCR has recently started a program of trimming rather than cutting to the ground.
- The moat is an open water system with peripheral emergent marsh and shrubby banks. The moat is heavily sedimented, with turbid water, which nevertheless provides habitat for wildlife such as migratory waterfowl and turtles, as well as for insect pests such as mosquitoes. Dredging would help restore the original hydrology and reduce mosquitoes, but on the other hand it will disturb the emergent marsh ecosystem that has established in the shallow parts.
- The well-used lawn areas show compaction especially under tree canopies. The East Lawn has numerous drainage and ponding issues, likely a result of high ground water as well as poor soil drainage and compaction. The compaction is likely caused by the use of vehicles in the Head of the Charles Regatta event, the heavy use by other park users during the active season, and the DCR maintenance vehicles who often drive on the land so as not to interfere with commuters on the paths. The lawn restoration after the HOCR in late October is too late in the season to reestablish the turf.

Figure 2-57. Meadow planting maintained with mown strips along paths, at DCR Sen. Joseph Finnegan Park .

- East of Eliot Bridge the lawn area is used less frequently, being remote from parking lots and park facilities. DCR has set up test plots in this location for a sun meadow mix and shade-tolerant meadow mix, as per the *DCR Charles River Vegetation Management Plan (CRVMP)*.
- DCR conducts autumn leaf collections coordinated with street sweeping to remove leaves from parkways and parking lots. DCR quantifies the collected leaves and woody debris that are sent to compost facilities to achieve total maximum daily loads (TMDLs) for phosphorus as part of DCR's NPDES permit and stormwater management program in the Charles River watershed.

General Vegetation Recommendations

Below are the general recommendations relating to vegetation improvements. Site-specific recommendations are described in Part Three of this report.

- Maintain the balance of open lawn and shaded / wooded areas.
  - Improve visual porosity in overgrown areas for an enhanced sense of safety and views.
  - Introduce areas of meadow planting to enhance habitat value to pollinators and wildlife, improve permeability and soil quality, capture and filter stormwater flow, reduce erosion, and reduce carbon footprint (minimized mowing).
- Resolve lawn drainage issues:
  - Implement surface and subsurface drainage solutions.
  - In some area provide grading changes- raise the elevation of lawns to crate dry higher-use land, in combination with balancing flood storage capacity elsewhere.
  - Measures to repair compacted soil conditions must also include future management of vehicle traffic and large crowds in lawns to maintain conditions.
- Provide a win-win river's edge:
  - Maintain vegetation along the edge of the Charles River to include vista pruning for river views, to promote vegetative stabilization of the riverbank, and to discourage Canada Geese by minimizing lawn directly adjacent to the water.
  - Maintain the river edges in accordance with the Charles River Vegetation Management Plan (CRVMP).
  - Allow visitor access to the water at a few defined locations.
- Enhance climate resiliency by maintaining or expanding the tree canopy, and enhancing plant biodiversity in general.
  - Require tree protection and other BMPs during special events to prevent root zone compaction and tree damage.
  - Conduct a tree assessment and maintenance plan for the park's existing trees.
  - Select new plantings with preference for plants that have high value for wildlife species, and are native to the Suffolk county.
  - Work with volunteers and partners to enhance the overall habitat quality of the project area (for instance by installing bat and bird boxes).
  - Incorporate nature-based solutions in the treatment of stormwater.
- Implement invasive species removal and vegetative restoration, combined with long-term invasive species control and integrated pest management (IPM).
- Establish a sustainable landscape maintenance regime in accordance with the Charles River Vegetation Management Plan (CRVMP).

Existing Landscape Areas Diagram

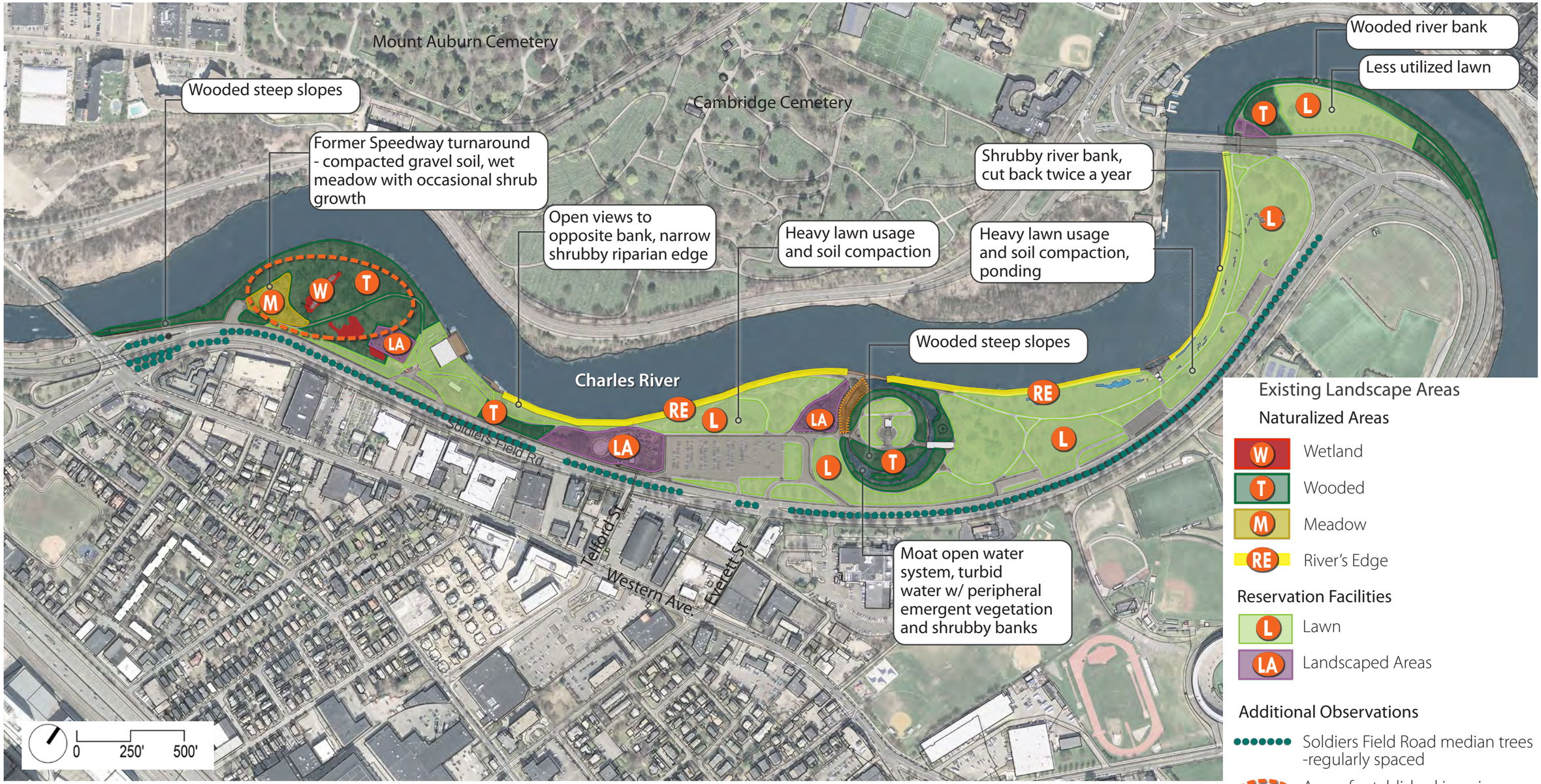


Figure 2-58. Existing landscape areas diagram.