

City of Huntington

# Memorial Park Conceptual Master Plan



May 2014







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City of Huntington, Indiana

May 2014

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# INTRODUCTION AND PURPOSE

Memorial Park is a 48.17 acre city park located at West Park Drive and Bartlett Street in the City of Huntington (City). It is the City's second largest park and is one of the most heavily used. Due to its size, Memorial Park is considered a Community Park for planning purposes. Active recreation facilities include lighted basketball courts and horseshoe courts, a disk golf course, sledding facilities, and a playground. Passive recreation areas include walking paths, picnic areas, outdoor pavilions, and restroom facilities. Also included are two gardens with water features (Waltonian and Arboreal Gardens), wooded areas, and two large ponds.

Memorial Park was previously named Cold Spring Woods Park. It was rededicated as Memorial Park 'as a memorial to the soldier and sailor dead of Huntington County' in 1922<sup>1</sup>. A Veteran's Memorial is located on the southwest corner of the park and features historical military monuments, an F-80 Shooting Star aircraft<sup>2</sup>, and a decommissioned military tank.

Located within Memorial Park is the historic Sunken Gardens which was constructed on the remnants of an old stone quarry between 1923 and 1928 and features stone structures, various plantings, and fishponds. Sunken Gardens was added to the National Registry of Historic Places (NRHP) on June 26, 1997<sup>3</sup>. The City recently received a grant to add the remainder of Memorial Park to the NRHP. The stone walls along the drainage channel are a major contributor to the historic nature of the park and were constructed by the Works Progress Administration (WPA) in the 1920's.

The purpose of this Conceptual Plan is to guide the rehabilitation and further development of Memorial Park in a manner befitting its historical importance to the City and responding to the needs of today's users. The City would like to focus on further development of the memorial aspect of the park with relocation and update of the existing memorial. Mayor Brooks Feters and Parks Department envision Memorial Park as a destination linked by many area trails. Emphasis on future development within the park will be on quality, meeting the Parks Department's current level of care capabilities, meeting the needs of users, connectivity, and providing opportunities for engaging the community.



# SITE ANALYSIS

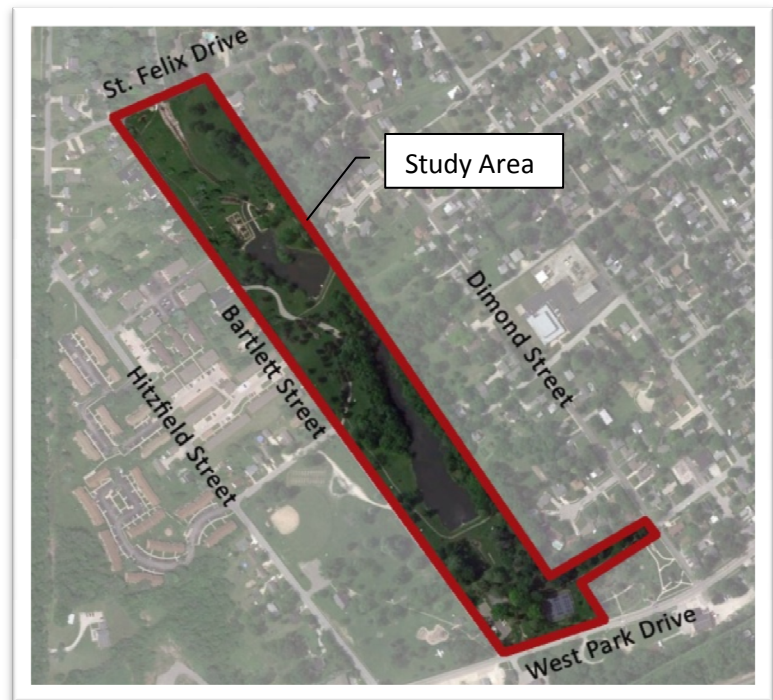
A field inventory was conducted along with a general site analysis of the study area examining existing conditions of the site and park features. The study area is shown in the illustration to the right.

## General Soil Characteristics

According to the National Cooperative Soil Survey, operated by the Natural Resources Conservation Service (NRCS), the Park consists of mainly of Blount silt loam, Eel silt loam, Milton silt loam, and Morley silt loam. These soil types indicate most of the area is suitable for paths and trails based on soil properties that support foot traffic and are less prone to erosion.

## Vegetation

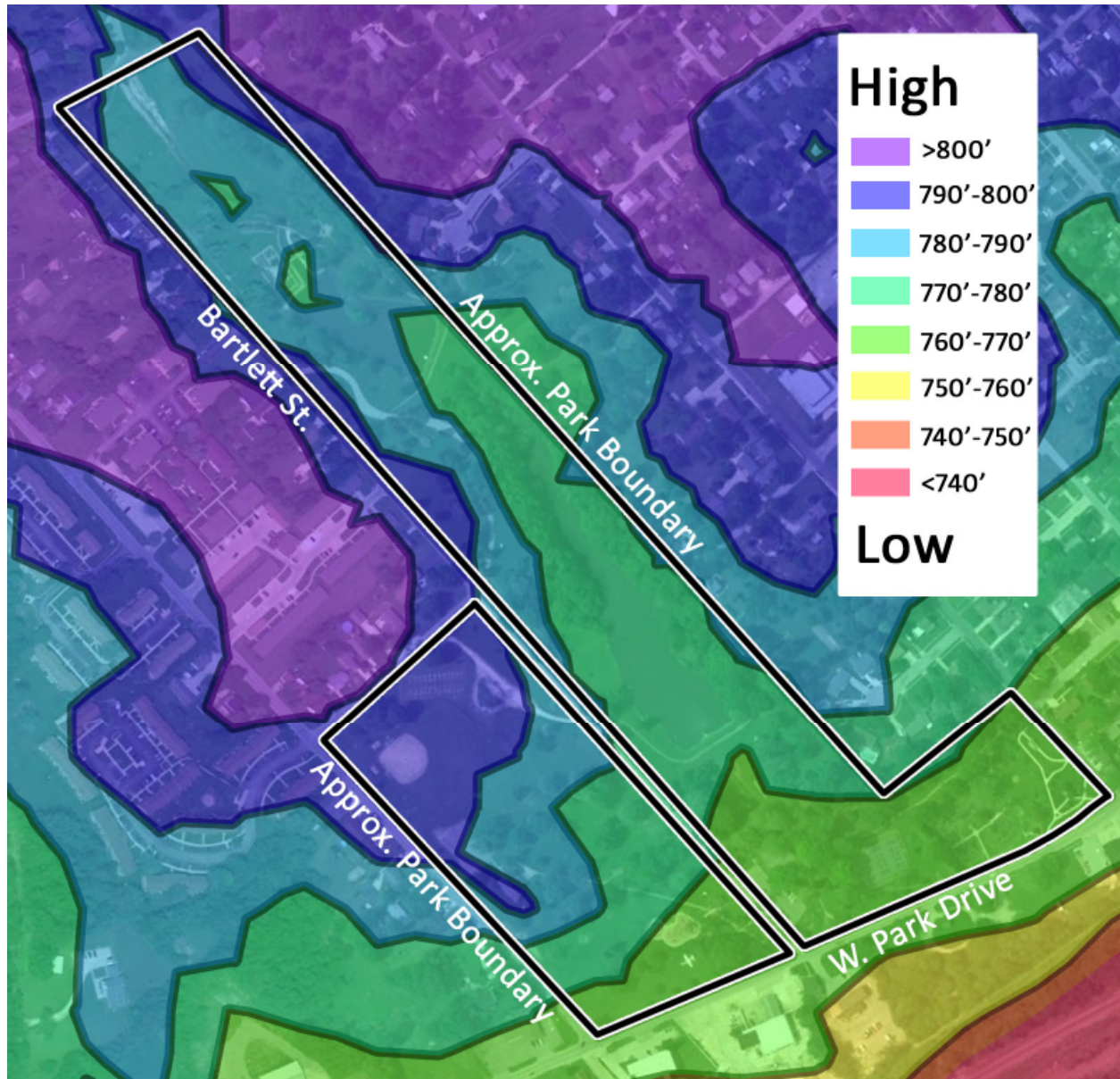
Vegetation consists mostly of mature deciduous trees with scrub/shrub undergrowth. Storm damage has occurred in many areas throughout the park. Formal landscape plantings have been provided in the past at the Waltonian Gardens (lower left). However, these plantings are currently suffering from lack of regular maintenance and age. The extent of invasive plantings within the park could not be determined at the time of this evaluation, but should be addressed when designing and implementing future improvements.





## Slopes and Topography

Slopes within the Park vary widely. Approximate elevations range from 750 (feet above sea level) at the south end along West Park Drive to 795 at the north end along St. Felix Drive. The graphic below illustrates the grade change across the site. The grade changes provide opportunities for desirable views within the park, but present a challenge for locating improvements that require level areas of any significant size, as well as maintaining accessibility along walks and to and from areas of activity.



## Drainage and Hydrology

Memorial Park is located within the Little River and Flint Creek watershed. Two large ponds (upper and lower) are located east of Bartlett Street with a total surface area of approximately 4 acres. These ponds were originally used as a fish hatchery. Urban runoff enters the creek at the north end of the site, travels through a small channel, enters the pond system, and exits the site through a stone waterway built in the 1920's as part of a Works Progress Administration (WPA) project. The site generally slopes in towards the ponds from adjacent roadways and properties with the portion of the park along West Park Drive having the lowest elevation.

A preliminary review of hydrology indicates the watershed served by the ponds is approximately 220 acres with approximately 195 acres directly draining to the upper (north) pond. The watershed includes 43% high density residential development, 34% low-density residential development, and 10% commercial/residential with the remaining 13% consisting of forest and pasture. All percentages are approximate.

Maintenance of the ponds and management of water level, flow, and erosion has been an ongoing issue for the Parks Department. Currently, the lower (south) pond periodically experiences normal pool elevations below the outlet structure's overflow elevation. In response, the City utilizes a water source on the southwest side of the pond to maintain the pool elevation.

In the late 1970's, a spillway<sup>4</sup> was added so that water level of the ponds could be controlled, and to replace an earthen dam which had collapsed. At that time, discussions took place concerning draining the ponds in the summer and filling them for a skating facility in the winter. According to local newspaper accounts, the bottom of the ponds were largely composed of sand and gravel and would not hold water without lining the pond bottom with clay or constructing the spillway.

The City began using these ponds for controlling runoff from a large portion of the City's north side in the 1980's<sup>5</sup>. As a result, the stone channel to the south often overflowed. To regulate water level of the ponds, stand pipes were added as control structures. The standpipes are constructed of corrugated metal. The standpipe for the upper pond appears to be constructed of aluminum and the standpipe for the lower pond is constructed of a coated steel product. The expected life of the structures is 10 to 75 years, depending on the coating provided. Visible sections of the standpipe for the lower pond currently display signs of surface rust. Small holes located four to six inches below the normal pool elevation are evident. It is unclear if these holes were intentionally placed due to the lack of consistent pattern around the perimeter. Other holes are blocked by debris or algae growth. No actual hydraulic design information has been found concerning these control structures.

The channel between St. Felix Drive and the upper pond is approximately 540 feet in length from the pipe outfall to the first footbridge. Approximately 175 feet of the northernmost end of the channel has been reinforced with riprap and has steep side slopes. The remaining 365 feet of the channel has vegetated banks, shallow flow, and appears to have a water elevation consistent with the normal pool elevation of the upper pond.



According to the City, the lower pond has historically experienced significant algae growth during summer periods suggesting the possibility that the pond may be too shallow to prevent growth or there are excessive nutrients flowing into the pond system via runoff.



### Areas of Disturbance/Erosion

An existing culvert is located at the north end of the park near the intersection of Parkhill and St. Felix Drives. Despite being reinforced with large amounts of rip rap (above right), erosion is still occurring, particularly along the east edge of the channel. Volunteer vegetation has grown through the riprap and along banks of the channel. The side slopes of the channel are steep, which indicates higher potential for future erosion. The edges of the upper pond have varying bank conditions, from rip rap to scrub/shrub to lawn.

The WPA channel exhibits major erosion at the outlet of the lower pond's control structure (below right) with occasionally undercutting of the walls (below left)



## Built or Constructed Park Features

Existing athletic facilities within the study area include one full basketball court, one half court, three tennis courts, a shuffleboard court, and a disc golf course that meanders throughout the park. Generally, the sports areas are not connected to an accessible route.

The basketball court surface exhibits random cracking and other signs of age. Lighting is provided, but metal surfaces on the poles and fixtures exhibit significant rusting.

The tennis courts also double as pickleball courts for league use. The tennis courts were resurfaced in 2010<sup>6</sup> and would benefit from relocation of the pickleball activities because this practice is damaging the nets. Electrical service to the tennis courts was upgraded in 2002<sup>6</sup>. The drinking fountain adjacent to the tennis courts (installed in 2003)<sup>6</sup> is not located on an accessible route.



The nine hole disc golf course was installed in 2008<sup>6</sup> and consists of ‘holes’ and tee stations with concrete pads. Tee stations are generally connected by existing gravel, asphalt or brick paths, and lawn.

The trail network throughout the park is comprised of several types of surfaces. Brick-paved trails are exhibiting settling and overgrowth of vegetation which may make use difficult. Portions of the trail along Bartlett Street are asphalt and were seal coated in 2008<sup>6</sup>, but currently exhibit areas of cracking and overgrowth. A gravel and dirt trail runs from the south end of the upper pond through the woods east of the lower pond and loops around the top of the lower pond berm to connect with Memorial Lane. This trail is occasionally used for cross country practice. Most trails are not accessible due to the





surface condition, displacements, or their surface material.

Six pedestrian bridges are located throughout the park, including two over the WPA channel near the tennis courts, two over the channel at the upper pond, and two along the wooded trail to the east of the lower pond. The bridges frequently exhibit deck elevations that vary from the adjacent trail, have inadequate guardrails by current standards, and exhibit varying degrees of structural soundness. The wooden bridges were renovated in 2001 and 2007<sup>6</sup>. (See 'Bridges' section for further detail.)

A stairway connects the bridge between the Arboreal Gardens and the Waltonian Gardens. The treads and risers exhibit settling and significant chipping and do not provide adequate handrails for safety or accessibility.

A gazebo was built in the late 1980's along Memorial Lane for picnicking<sup>7</sup>. Site furnishings are located throughout the park and include benches, trash receptacles, and picnic tables. Lighting exists along the pedestrian path adjacent to Bartlett Street. Other utilities on the site include electric and water service.



## Water Features

The upper circular water feature (Arboreal Garden, below left) was last renovated in 1991<sup>8</sup>. At that time, the water feature consisted of a pool with arcing jets from the walls. Very few signs of this piping and drainage system remain, however, an overflow appears to be located on the southwest side of the fountain. No pump system or controls are visible. The floor of the fountain exhibits many patches and cracks. The majority of the stonework around the upper portion of the fountain is intact. Vegetation and debris is present around the perimeter. The most recent Huntington Parks Master Plan indicated that stonework on this fountain may have been rehabilitated in 2002.

The Waltonian Garden fountain appears to have been constructed in 1988<sup>9</sup> as part of a park renovation and was donated to the park by the Kraft Dairy Group on behalf of its Huntington employees (below right). This pool-type fountain appears to have access for running piping and drainage. The basin shows signs of wear, including excessive peeling of the pool coating, cracks, and depressions. The controls and equipment were manufactured by Rain Jet Fountains. No pump system is visible.





## Bridges

### Waltonian Gardens

Two pedestrian bridges are located near the Waltonian Gardens. The southern bridge spans from an existing stair access from the trail east of the channel directly to the Garden's east/west axis. The northern bridge carries the main park trail over the channel. The main trail provides access to the Arboreal Garden area, but not the Waltonian Garden.

Both structures span the channel with simple span bridges, composed of steel I-Beams. The northernmost bridge span is approximately 35% longer than the southern bridge. The clear width of both bridges is slightly less than 5 feet. The steel I-beams are in good condition, while the approaches at both ends are adverse to pedestrian and bicycle traffic due to the elevation difference at the connection to the bridge decks. The existing railings do not meet current standards. The deck boards exhibit minor deterioration and warping has created an uneven surface which creates safety concerns for pedestrian traffic and bicycle traffic.





## WPA Channel / Tennis Court Area

Two small bridges are located in the vicinity of the WPA channel and tennis court area. One of the bridges provides direct access from the parking lot to the tennis courts and the Sunken Gardens stair access, while the other is an indirect connection from the north end of the basketball court area to the open space on the east side of the channel.

Based on preliminary observations, these two bridges spanning the WPA channel are composed of different materials. Both structures span the channel and have an approximate length of 10 feet. The southernmost bridge (below, red railing) is composed of three 6" timber beams with 2" deck planks and metal tube railings with a timber cap. The clear width between railings is just over 4'-6". The existing timber plank deck is in good condition. The bridge just north of the tennis court (below, green railing) is composed of steel I-beams with 2" deck planks and metal tube railings with a clear width between railings of slightly less than 3'-4".



## Accessibility

According to the 2011-2015 Parks Master Plan, demographics in the Huntington area have shown an increase in the number of adults and senior citizens. Seniors, in particular, could benefit greatly from increased accessibility within parks facilities.

The City of Huntington completed a Self-Evaluation and Transition Plan (SETP) for all City facilities in 2013. This plan was developed to comply with the requirements of Title II of the Americans with Disabilities Act (ADA) and give all residents and visitors access to all services, programs, and activities provided by the City. Memorial Park was evaluated based on the 2010 ADA Standards for Accessible Design. This evaluation included items such as sidewalks, trails, shelter areas, site furnishings, and access to sports areas. In summary, non-compliance included lack of parking signage and adequate access aisle, lack of sufficient width for passing along some walkways, poor condition and surface irregularities of both brick and asphalt walks, lack of accessible connection to the Waltonian Garden, tennis and basketball facilities, and surface level issues at bridge approaches. Portions of the SETP are included in the Appendix for further reference.



## Off-site Land Uses (Relationship to Study Area)

The site is primarily surrounded by residential development. Homes along Bartlett Street, Dimond Street, Nicole Lane, Zahn Street, and Orchard Hill Court have frontage along the park. Homeowner visibility is useful for security of the park. These single family homes, along with the apartment complexes off Bartlett and Hitzfield Streets, provide a significant population from which to draw local park users.

## Relationship of Study Area to other Memorial Park Features

The Sunken Gardens, a popular garden area built in 1923, is located in the southeast corner of the park. Stairway access to the Sunken Gardens from Memorial Park is provided on the northern and eastern edges of the Garden. Access by a walkway tunnel is provided from the south side of West Park Drive.





The park area to the west of Bartlett Street features the Veteran's Memorial elements, a playground, pavilion, a restroom building, an unused baseball diamond, a sledding hill, and horse shoe pits. The pavilion in this area is newly renovated. The playground, pavilion, and horse shoe pits are heavily used. The Memorial area is immediately adjacent to the playground, which is considered a safety concern as the military plane and tank tend to be treated as play equipment.



### Existing Points of Park Access

Vehicular access to Memorial Park includes a parking lot at the south end of Bartlett Street (below left), on-street parking, and informal pull-off parking along Memorial Lane. The parking lot at Bartlett Street was constructed in 2007 according to the most recent Parks Master Plan. Dedicated pedestrian access occurs at the following intersections: St. Felix Drive/Parkhill Drive, St. Felix Drive/ Bartlett Street (below right), Bartlett Street/ West Park Drive, and from Dimond Street north of the Sunken Gardens.



### Maintenance

Maintenance is a key requirement to providing and maintaining quality parks and programs. In addition to the aforementioned specific maintenance concerns, the Parks Department has experienced a recent decrease in full time staff, limiting the in-house maintenance capabilities. In response, Mayor Feters recently appointed a Community Engagement position to actively seek help from community volunteer groups with the maintenance of park facilities, among other duties. Suggestions from the City have included limiting maintenance of planting areas by providing less space (but using higher quality plantings within those areas), phasing improvements to allow for quality, sustainable construction, proactively planting trees for replacement of mature and damaged vegetation, and including measures which would limit erosion identified as an ongoing maintenance issue.



# PROPOSED IMPROVEMENTS

## Public Input and City Priorities

To determine the priorities and concerns to be addressed in the rehabilitation of Memorial Park, two sources were used. The Parks Department completed a master planning effort in 2010 including public input. This document reflects the Parks Department goals and priorities and provides the basis for public input documented below. It was also used to guide the department-identified programmatic and maintenance needs. The City administration provided a second source of input at a project kick-off and programming meeting held on November 25, 2013, and the preliminary review meeting held on February 27, 2014. Topics from these meetings are documented below and full meeting minutes are included in the Appendix.

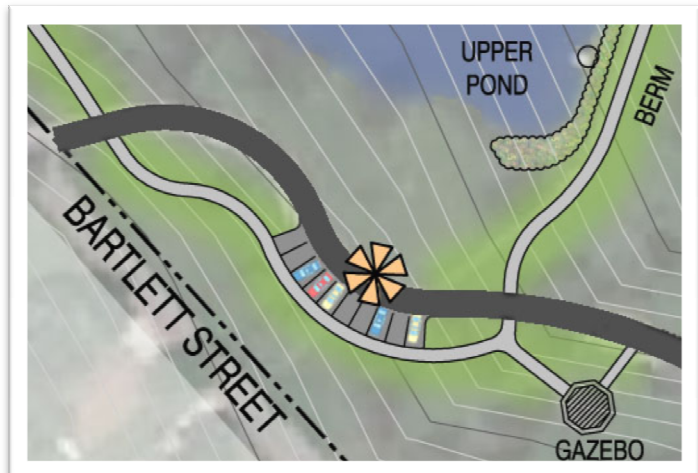


Public input as part of the 2011-2015 Parks Master Plan indicated that providing trail connections from Memorial Park to Elmwood Park and/or Forks of the Wabash as well as upgrading the walkways within Memorial Park were high priorities. Other specific improvements noted included repair or replacement of brick walks, repair of footbridge approaches, addressing the upper pond maintenance issues (stagnancy, insects, trash, etc), cleanup of the drainage channel at the north end of the park, child safety at the existing Veteran's Memorial space, and expansion of the disc golf course.

In addition, the City identified improvements desired to support the long term vision of the park. These included relocation of sports areas as needed, a renewed focus on the Veteran's Memorial aspect of the park, and cleanup and repair of the ponds. The City also expressed interest in restoration of the fountains, creating raised planting beds in garden spaces, canopy structures, creation of an amphitheater space, and inclusion of interpretive signage. (See meeting minutes included in the Appendix for further information.)

## Parking

The existing parking lot off Bartlett Street and West Park Drive was identified as lacking signage and correct pavement marking widths in the 2013 SETP. Two other parking areas are proposed for the future development. This plan proposes the addition of ninety-degree parking along the



existing gazebo drive to serve the north end of the park with approximately ten spaces.

Parking is also proposed for the new court sports complex at the corner of Bartlett Street and Memorial Lane. The new basketball court location could be served by the existing lot on Hitzfield Street. All parking should provide accessible parking spaces and an accessible connection to the park facilities it serves.

## Recreation

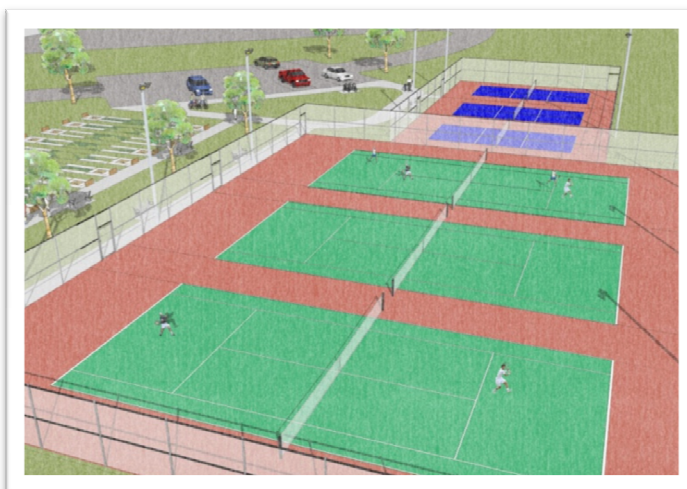
The 2011-2015 Parks Master Plan identified two key items for Memorial Park development including consolidation of various tennis court facilities into a single tennis complex and the inclusion of a Veteran's Memorial Garden to honor those who served in the military from the Huntington Community.

To facilitate court relocations, the unused baseball diamond equipment would be removed and restored with lawn and tree plantings. The existing full basketball court, half court, tennis courts, and associated fence and lighting would be removed.

**A new court sport complex** would be provided on the west side of Bartlett Street as shown to the right. In addition to the relocation of the tennis courts, separate pickleball facilities would be provided. Two basketball courts would also be provided near the existing parking and shelter to replace the courts currently located between the south parking lot and the WPA stone channel. All courts would be lighted.

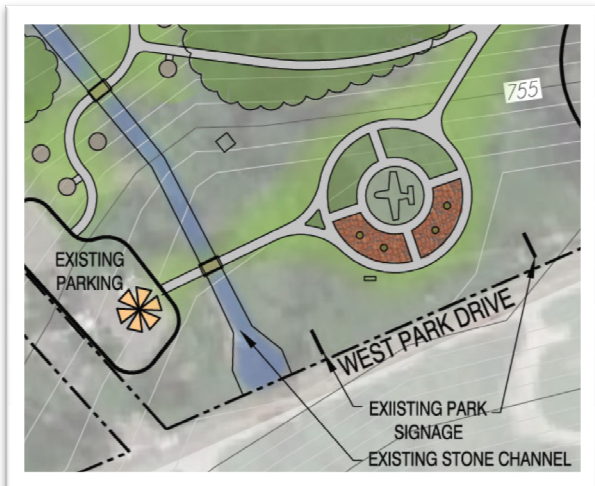
**A new picnic area** would be provided in place of the existing basketball courts. Portions of the picnic area should provide accessible picnic tables connected to the nearest accessible route.

**The existing disc golf facilities** would remain in place throughout the park.

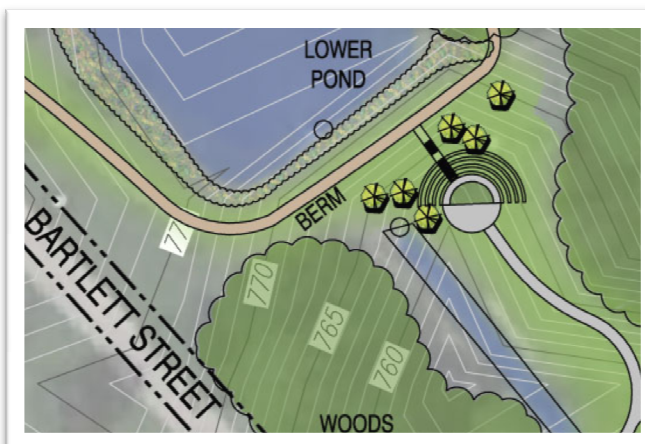




**The new Veteran's Memorial** is proposed in the area vacated by the existing tennis courts. This prominent location remains highly visible, provides convenient access to parking, and separates the Memorial from the playground users. Accessibility is recommended as a prime consideration in the placement and design of the Veteran's Memorial. This area is envisioned for use for ceremonies and other gatherings to honor all branches of the military. This area may also incorporate military equipment, dedication plaques or pavers, a wall featuring the names of those who served, flagpoles, lighting, and low maintenance plantings. The City has scheduled the existing military aircraft to undergo rehabilitation in 2014 and will then be relocated to a raised support structure.



**A new outdoor amphitheater** is proposed at the berm at the south end of the lower pond to take advantage of existing grade changes within the park. The amphitheater could be used for outdoor movies, small musical performances, or other gatherings to further encourage public use of this area of the park. It could be constructed by building low seat walls into the existing slopes with care taken to maintain the integrity of the adjacent berm. A stairway could connect the amphitheater to the soft trail loop above. A new trail would connect this area to adjacent proposed picnic areas and to the south parking lot. Understory trees could be used to selectively screen the adjacent storm water outlet at the WPA stone channel.





**Trails** within the park should be removed and replaced with eight (8) foot (minimum) wide paths to allow for two way traffic. Trails that are currently asphalt or brick should be replaced with asphalt or concrete. A new loop on the northeast corner of the park is suggested to provide access along the channel and the wooded area north of the Arboreal Garden. All paved trails should be designed to meet the slope and surface requirements for accessibility. (See the site analysis for discussion of accessibility applicability). Portions of the trail that are currently gravel around the lower pond and through the wooded area to the east should be improved with a heavier aggregate profile for improved maintenance and a more consistent surface, however, this trail would not be considered an accessible route.

One of the City's goals is to provide connectivity for biking throughout the community. As such, bike routes are proposed in Memorial Park as follows. Connecting through the park from the north would enter the park trail at St. Felix Drive, use the proposed multi-use trail and park roadway to reach Memorial Lane, and then follow future dedicated bike lanes along Bartlett Street to reach either West Park Drive or the connecting trail from the south parking lot east to Dimond Street. The City's long-term vision includes a bike route from Schenkel's Dairy (near the intersection of Flaxmill Road and US 24) to Sunken Gardens.

**Site furnishings** throughout the park should be upgraded to increase accessibility. Per current ADA standards, at least 20% of site improvements should be accessible. This includes providing accessible dimensions of furnishings, maneuvering clearances, companion seating at benches, and a connection to the nearest accessible route. Per the 2013 SETP, current furnishings do not meet these requirements.

**An accessible fishing pier or viewing platform** is proposed to replace the existing dock at the upper pond. This would provide increased access to the water's edge. Relocation of the platform to the east may provide an improved viewshed within the park. The new platform should provide edge protection and railings per Chapter 10 of the ADA Standards.

## Gardens

The Waltonian Garden and Arboreal Garden could be renovated including pavement and plantings. The existing uneven pavers could be replaced with stamped concrete or reset on a concrete or asphalt base to prevent settling. At the Waltonian Garden, a new accessible connection would be provided from the asphalt walk to the north. (See also 'Bridges' for options for renovation and/or removal of the bridges.)



The Waltonian Garden water feature should be fully evaluated prior to being rehabilitated. Rehabilitation would likely include patching and sealing of all existing cracks, resurfacing with an appropriate waterproofing coating, testing and replacement of operable parts including controls and pumps, and adding drainage provisions where necessary to help maintain the life of the fountain with

proper annual maintenance. The Waltonian plantings should include a framework of permanent plantings to delineate the edges of the planting areas and provide limited areas for higher impact annual or perennial plantings.

The City desires to convert the Arboreal fountain basin into an at-grade planting bed. The basin's bottom would be altered to allow drainage and backfilled with an appropriate drainage material and soil medium. The existing border's stone work would be

repaired in kind and remain as the planting bed border. The Arboreal Garden could be accented with low evergreen plantings and limited high impact plantings at the walk connections. The Waltonian Garden and the upper pond area are currently slated for improvement in 2015 per the latest Parks Master Plan.



### Renovation of Historical Elements

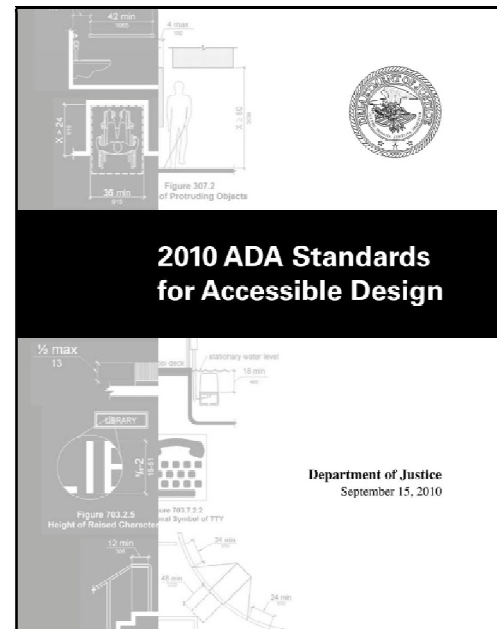
The City is in the process of pursuing the addition of Memorial Park to the National Registry of Historic Places using a 'Partners in Preservation' grant received by the City's Historic Review Board from Indiana Landmarks. The Sunken Gardens, adjacent to Memorial Park, is already on the register. Listing of Memorial Park on the NRHP may enable the City to access grant opportunities related to historic preservation. As renovations began on the park shelter west of Bartlett Street, the City set a precedent to preserve and repair historical elements within the park including stonework and other structures. Within Memorial Park, the WPA stonework is a major contributor to the history of the park (lower right). Other candidates for restoration might include the Waltonian Gardens fountain and selective reuse of the Canton brick walkways in areas outside of accessible routes or as landscape edging or accents (lower left).



## Accessibility & Safety

The City is required via Title II of the ADA to provide program access, which means that programs, services, and activities, when viewed in their entirety, are readily accessible to, and useable by, persons with disabilities. As such, it is not the intent to make every improvement within the park accessible, but to provide access to all activities and experiences offered within the park in an integrated fashion. The City's SETP gives emphasis to improvements that most impact the ability of persons with disabilities to access facilities or programs.

One of the major activities offered within the study area is the use of the trail system. To provide program accessibility, portions of the trail network are proposed to be paved to meet the surface and slope requirements of an accessible route. These routes would provide access to all different uses in the park including the sports courts, fountains and gardens, and the diverse ecological areas of the park such as the ponds and channel. Portions of the trail would remain as soft trail, but be resurfaced with a more stable soft trail section for continued use for cross country activities and would not be intended for use as the accessible route. It is recommended to provide signage directing users to accessible features. Other accessible improvements might include the connection of sports activities to accessible routes. Items identified in the 2013 SETP should be addressed during park development and are included in the Appendix. All future recreation improvements should follow the requirements of *Chapter 10: Recreation Facilities* of the 2010 ADA Standards.



Existing lighting should be evaluated with a light meter to determine if the existing fixtures provide adequate footcandles for their intended purpose. The City would like to provide lighting throughout the park for security purposes and for evening use. The Illuminating Engineering Society of North America (IESNA) publishes a number of recommendations for exterior lighting. One such publication recommends a 0.8 footcandle average for local roads and low activity areas. This value may be appropriate wherever there is a requirement to maintain security at any time in areas where there is a low level of nighttime activity, such as main park trails.

## Drainage and Stabilization

When the City pursues improvements to the channels and ponds, it is recommended their design team start by creating a hydrologic/hydraulic model to evaluate the existing channels, pond outfalls and emergency overflow structures. Due to its significant size (over 220 acres) and largely developed nature of the watershed, a model would provide the best direction on the proper course of action to address outfall erosion as well as capacity issues in the WPA stone waterway. Data concerning the size and condition of the existing outfall structures will also be required as input for the model.

Once modeling is complete, design for the rehabilitation of the existing control structures, construction of stable emergency spillways, and stabilization of the pond outfalls and the existing channels could be undertaken, respectively.

The pond control structures should be evaluated for a 100-year storm event to determine if they, with the existing storage volume, have the required capacity to minimize the need for emergency overflows. The emergency overflow geometry itself should be evaluated to see if erosive velocities on the existing surface would be expected. Appropriate stabilization, such as articulated concrete mats, should then be recommended as necessary. Articulated concrete mats are specially manufactured hollow concrete block connected by steel cables to create a single mat. These mats create a scour resistant surface that allows grass or other appropriate ground cover to grow in the open areas, giving a more natural surface that is easy to maintain with simple mowing.

Next, the expected velocity at the lower outfall of the south pond should be evaluated and the outfall stabilized. A combination of articulated concrete blocks and, if needed, an energy dissipater could be used to provide a natural appearance and minimize maintenance efforts.

Stabilization of the undercutting of the existing WPA channel should be addressed. Assuming that the modeling demonstrates that the existing geometry provides sufficient capacity, the stabilization of the channel bottom from erosive velocities and the stabilization of the wall base are recommended. The existing bottom should also be evaluated for stability. If the existing bed is stable, concrete fill under the existing wall may be the only necessary action. If the bed appears to be unstable (susceptible to erosion and weathering), stabilization of the bed with material such as the articulated blankets discussed previously should be considered. If modeling indicates that the existing channel geometry does not provide sufficient capacity, new channel geometry with a stable base or an overland overflow route could be examined as an alternative to accommodate the additional flow while continuing to utilize the existing stone channel. The City has expressed a desire to preserve the exposed WPA stone channel walls if at all possible to maintain the historic integrity.

Improving water quality in the ponds will require addressing two specific issues; depth of the normal pool and available nutrients in the pond. The lower pond is the older of the two ponds and has likely accumulated sediment and nutrients, reducing the water depth. Dredging the bottom of the pond by a small scale dredging/vacuuming operator should be considered to remove the accumulated material and restore depth to the pond. Material is removed and pumped into dewatering bags on shore. The material is allowed to dewater before removal or disbursement onsite. A minimum depth of 10 feet is recommended to inhibit undesirable plant growth, allow fish to survive year round, and allow for minor accumulation of sediment.

In conjunction with dredging, the City may consider lowering the normal pool of the pond. The north end of the lower pond currently is narrow, wooded, and shallow. Some trees have fallen into the pond and will continue to contribute nutrient loads to water via decay of trunks and leaves. Lowering the pond would create a land buffer between the trees and water and potentially allow room for a trail

along the water. A lower pool elevation would also encourage water to move through the channel between the upper and lower ponds and allow for more detention capacity.

The second concern with respect to water quality is the control and reduction of nutrients entering both ponds. The upstream channel can be used to create a sediment basin and a meandering wetland plant system to reduce nutrients. The existing shallow channel could easily be enhanced as a wetland due to its shallow bottom. This water quality feature could potentially be created with MS4 funds and be used as an educational feature.

Each of these tasks may be undertaken independently after the initial modeling is completed. It should be noted that some improvements to the upper pond are slated for improvement in 2015 per the latest Parks Master Plan. Coordination should be made to ensure that the issues identified above have been thoroughly researched prior to making any improvements.

Native plantings are recommended around the two ponds and the channel to create a more aesthetically pleasing edge and to help protect the banks from further erosion. Native plants have a denser, deeper root system than the existing lawn to help hold soils in place as water levels fluctuate seasonally or due to storm events. Native plantings also provide habitat to support passive recreation such as bird watching.

## Bridges

DLZ presented several alternatives for the rehabilitation of four of the six existing bridge structures. All alternatives focused on safety and accessibility and responded to the conditions described in the site analysis. These alternatives were discussed during the preliminary review meeting with the City and preferred alternatives were selected for each location based on the City's preference and vision for the park redevelopment. The bridge structures along the soft trail through the woods appear to be in good condition and are not located on an accessible route. At this time, these two structures are not included in proposed project improvements.

## Waltonian Gardens

The preferred alternative includes widening of the northernmost bridge and removing the southern bridge altogether. At the northernmost bridge, the clear width of the structure will be increased to match the proposed trail width of eight (8) feet. This will require an additional steel I-beam to be added as well as possible re-spacing of the existing girders. Widening the bridge structure will require additional structural analysis to determine both the capacity of the existing girders and their re-spacing configuration. Analysis would not be limited to the girders, and all elements of the bridge would require structural analysis during the design phase.

The decking for the new structure should consist of treated timber to minimize future deterioration. Replacement of the deck will address the safety hazards associated with the existing uneven decking. New railings should be provided to meet current standards and enhance the aesthetics of the structure with a more decorative style than the existing timber railings. An accessible route is recommended from the main trail to the Waltonian Gardens west of the bridge.

The southern bridge is recommended to be removed entirely, since this crossing is not part of the accessible route, nor is it conducive to bicycle traffic as the eastern approach only provides a small landing area with access back to the main trail by means of stairs. It is conceivable that the additional I-beam for northern bridge could be fabricated from the south bridge girders salvaged during its removal.

#### **WPA Channel / Tennis Court Area**

In this preferred alternative, both bridges would be replaced with eight (8) foot wide structures. This is recommended so the bridge will match the proposed trail width and be of sufficient width for two-way traffic. If structural analysis allows for reuse of existing girders, the steel girders of the northern bridge would be cleaned and painted in order to improve the aesthetic appearance and increase the life span of the existing materials. It is recommended that the timber beam bridge have a more in-depth inspection of the beams to determine if there is any additional deterioration that is not visible, which may require the replacement of these elements. Installation of a decorative railing would enhance these structures as well as meet current safety standards.





# PHASING AND COSTS

## Phasing Breakdown

The improvements identified in this plan have been broken down into three phases. Phasing construction allows the City to logically separate improvements to minimize impact to parks users, to prioritize improvements, and to allow time for funding of each phase. Phases have been identified as follows.

### **Phase I – South End/Court Sports Improvements**

As stated previously, the City is in the process of having the military aircraft rehabilitated in 2014. In order to minimize disturbance and cost, its relocation will drive the improvements placed in Phase I. These improvements will include:

- Veteran’s Memorial
- Court Sports area west of Bartlett Street (tennis and basketball court relocation, the addition of paddleball courts, electrical service, lighting, fencing, and parking)
- Outdoor amphitheater
- Accessible routes connecting all new improvements
- Renovation of two (2) Bridges at the south end of the park
- Restoration of areas disturbed by construction with seeding and tree plantings where desired

### **Phase II – Drainage/Pond Improvements**

Phase II will be comprised of pond, drainage, and erosion control improvements at the upper and lower pond and connecting drainage channels as discussed in ‘Drainage and Stabilization’ in the previous section. These improvements will include:

- Earthwork and dredging at ponds
- Modifications to control structures and outlets as needed
- Stabilization of banks
- Permanent erosion control measures
- Meandering wetland/sediment basin at north end
- WPA Channel Improvements
- Fishing Pier at Upper Pond
- Native Plantings

### Phase III – North End/Trail Improvements

The focus of Phase III is the north end of the park and the trail system. These improvements will include:

- Waltonian Garden renovation (including utility service associated with fountain restoration)
- Arboreal Garden renovation
- Renovation of north bridge and removal of south
- New parking at the gazebo
- Renovation of existing trails
- Construction of additional trail segments
- Park lighting and electrical service
- Miscellaneous park plantings

*Note: Phase II and III may run concurrent if funds are available.*

### Opinion of Probable Construction Cost

#### Preliminary Estimate of Probable Construction Cost Summary

Phase I.....	\$1,572,271
Phase II.....	\$212,225
Phase III.....	\$563,214
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<b>Estimated Total Project Construction Cost.....</b>	<b>\$2,347,710</b>

The costs stated herein are probable construction cost opinions based on a 2014 construction schedule. An expanded breakdown of costs by phase is included in the Appendix. The costs provided herein are for planning purposes only and do not account for unforeseen conditions and items not indicated on available GIS, aerial data or other public information outlets used (such as utilities, actual soils conditions, or detailed elevation information). In addition, these cost opinions are subject to change based on market conditions, economic conditions, inflation, material selection, etc. Multiple phases of projects, multiple bidding packages, design parameters, etc. all have an impact on project costs that cannot be absolutely identified in a conceptual study of this level of detail.

The cost opinions expressed herein do not include project 'soft costs' which include, but are not limited to engineering and design consulting fees and expenses, legal fees, detailed analysis such as geotechnical investigation, and/or hydrological/hydraulic modeling, topographic or legal surveying, permitting and associated fees, construction phase administrative services, and other similar costs. Soft costs for the work identified in this conceptual study are predicted to be equivalent to approximately 30% of project construction costs.

## Endnotes

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<sup>1</sup> *'City Council Offers Park for Memorial'*

<sup>2</sup> *'The World Of Books'* Myron J Smith Jr. Huntington Herald Press, September 22, 1975

<sup>3</sup> *'Sunken Gardens on National Register'* Tom Hernes, September 18, 1997

<sup>4</sup> *'Spillway to Replace Dam at Pond in Memorial Park'* Huntington Herald Press

<sup>5</sup> *'Park Ponds Will Collect Runoff'* John Klingenger, Huntington Herald Press, September 7, 1986

<sup>6</sup> *'Huntington Parks and Recreation Department 2011-2015 Master Plan'* SiteScapes, Inc, December 21, 2010

<sup>7</sup> *'Finishing Touches Put on Park'* Dan Coplen, August 28, 1988

<sup>8</sup> *'Teens Show Off a Job Well Done'* Huntington Herald Press

<sup>9</sup> *'New Look is Planned for Memorial Park'* Dan Coplen, December 15, 1987, *'Memorial Park Renovation Drive Launched'* Cindy Klepper, April 15, 1988