REUSE ASSESSMENT

Agriculture Street Landfill Superfund Site
New Orleans, Louisiana

JULY 2022

INTRODUCTION

The Agriculture Street Landfill Site (Site) is an approximately 95-acre former municipal disposal area. The Site includes an undeveloped landfill, residential properties, vacant land and vacant Moton Elementary School. EPA has completed cleanup at the Site. The city of New Orleans (City) has plans to develop a solar facility on part of the site to help offset energy costs at an adjacent water and drainage infrastructure pumping station. In 2021, EPA's Superfund Redevelopment Program worked with the City to complete a Solar Reuse Assessment and Feasibility Study Report for the Site. It identified a 40-acre area that could support a solar facility. The City is also looking at remaining publicly owned property at the Site. It is considering a broader range of opportunities to support municipal facilities, provide quality of life amenities for the City's east side, and restore and enhance ecosystems.

In January 2022, Mayor Cantrell announced the City's intention to work in partnership with EPA to find sustainable solutions for long-term reuse at the Site. A January 2022 press release shared the City's interest to "redevelop the site for clean energy initiatives that increase our resilience and reduce greenhouse gases." To explore city initiatives that could help to meet this goal, EPA's Superfund Redevelopment Program and Region 6 sponsored a reuse assessment for the Site. The goal of this reuse assessment is to help inform the City's planning for city-owned properties, properties the City is acquiring, and other vacant properties at the Site.

Planning for the Reuse of Superfund Sites

EPA does not choose or provide direct funding for future land use of properties. However, understanding current and anticipated future land use (or reuse) helps EPA ensure that cleanup remedies will protect human health and the environment. With this information, EPA can evaluate whether cleanup options would be compatible with reuse and ensure future uses are compatible with the cleanup. The purpose of this reuse assessment is to:

- Explore future use options for city-owned land (current and anticipated) to achieve the City's goal of 40 acres of photovoltaic (PV) solar facilities to offset the energy demands of the nearby pump station.
- Consider buffer and transition areas between existing residential and commercial uses and proposed city uses.
- Provide considerations to ensure future use options are compatible with the Site's remedy.

Project Stakeholders
The stakeholders listed below participated in reuse discussions via teleconference in 2022.

City of New Orleans

- Capital Projects Administration
- City Planning Commission
- Department of Economic Development
- Department of Parks and Parkways
- Department Public Works, Environmental Affairs
- Office of Resilience and Sustainability
- Department of Property Management, Real Estate Division
- Mayor's Office of Utilities
- New Orleans Fire Department
- New Orleans Recreation Development Commission

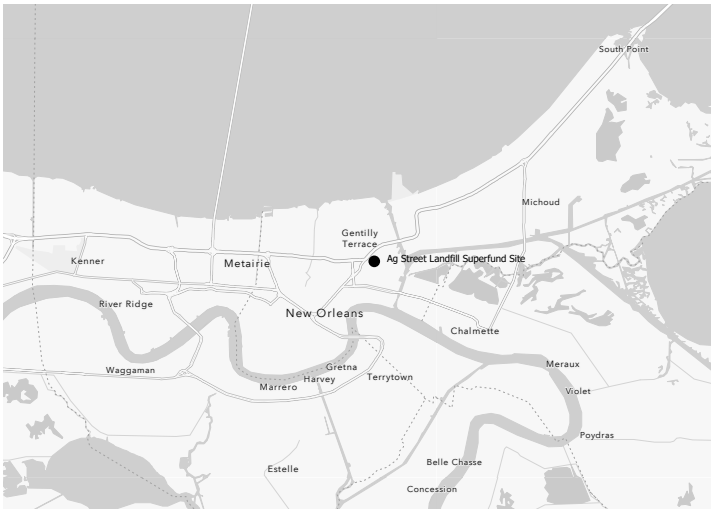
EPA's Superfund Redevelopment Program and EPA Region 6

Contents

Introduction	1
Site Context and Current Land Use	2
Cleanup Status	6
Reuse Suitability Zones	8
Future Use Scenarios	10
Reuse Examples	14
Moving Forward	16

SITE CONTEXT AND CURRENT LAND USE

Site Location: The Site is in the Desire neighborhood on the City's east side. Higgins Boulevard borders the Site to the north. Almonaster Boulevard borders the Site to the northwest. Southern Railroad rights of way border the Site to the south and west.



Site Location Map

Community Context: The Site is in a historically African American community. It is in a low-lying area that has experienced flood damage. Many Gordon Plaza homes and amenities were built on a former landfill later designated as the Site.

Land Use Context: The area was once a vibrant community that included single-family homes, multi-family units, retail businesses, an elementary school, a community center and a recreation center. In 2005, Hurricane Katrina and Hurricane Rita destroyed many structures in the neighborhood. Since then, many residents have remained in single-family homes in Gordon Plaza and apartments in Gordon Plaza Apartments. A few small retail businesses remain open. However, many properties in the neighborhood are now vacant, including the former Moton Elementary School. The Site includes more than 200 different properties with fragmented ownership.

Zoning: Most of the Site and area to the east is part of the City's Suburban Two-Family Residential District zoning, which includes a mix of housing types like single-family, two-family and townhouse dwellings. The area also includes a few neighborhood business districts. The western part of the Site is part of the City's Business Industrial Park zoning district. Areas further east and west of the Site are part of the City's Light Industrial and Heavy Industrial zoning districts (Figure 1).

Future Use: The City's Comprehensive Plan (Plan for the 21st Century) envisions a business district along Almonaster Avenue, residential uses that align with current residential zoning, and new mixed uses along Louisa Street (Figure 2).

Ownership: The Site includes numerous properties with many different owners. There are 255 parcels within the Site. The City owns most of the land in the western and southern areas of the Site and is the process of acquiring additional contiguous properties (Figure 3). The Housing Authority of New Orleans (HANO) owns 130 parcels interspersed with 58 vacant residential lots that are privately owned. Gordon Plaza includes 67 privately owned single-family homes.

Future Use Goals for City-Owned and Vacant Properties

EPA Region 6 representatives and staff from city departments convened during four conference calls in early 2022 to discuss future use goals and options for current and anticipated city-owned properties and vacant and undeveloped properties at the Site. A range of future use options were considered and refined based on uses compatible with the Site's remedy, as well as existing and transitioning residential areas. After careful consideration, the addition of stormwater management areas was ruled out to avoid digging into the Site's protective soil cover and buried landfill waste. The group identified the following future uses for further consideration at the Site:

- PV solar facility
- City warehouse storage
- City solar bus barn/electric vehicle (EV) charging
- Existing commercial uses
- Recreation uses
- Pollinator habitat and open space
- Ongoing residential use of existing housing for residents who wish to remain, and reuse of residential property from which residents wish to relocate.

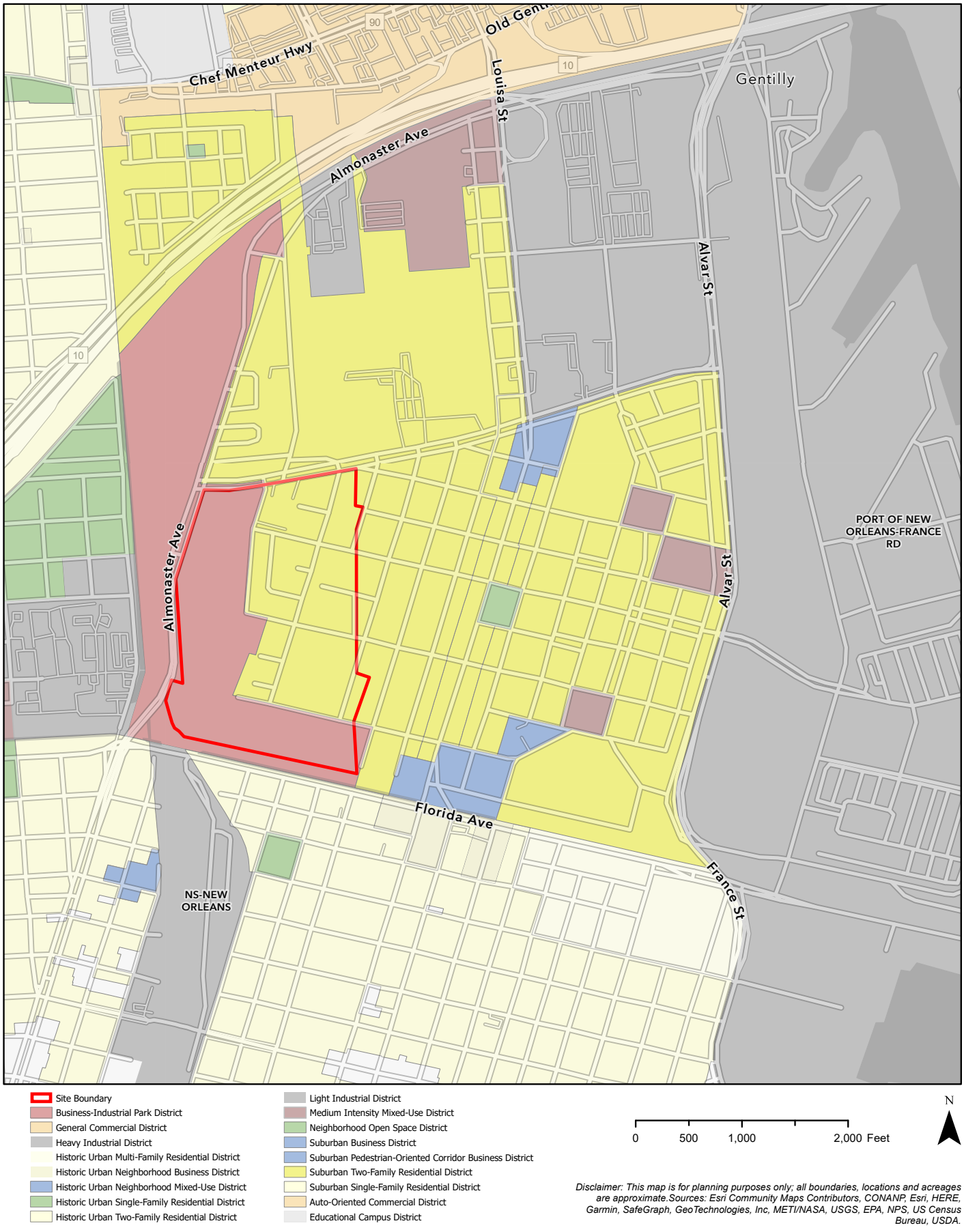


Figure 1. Zoning Map for the Site and Surrounding Areas

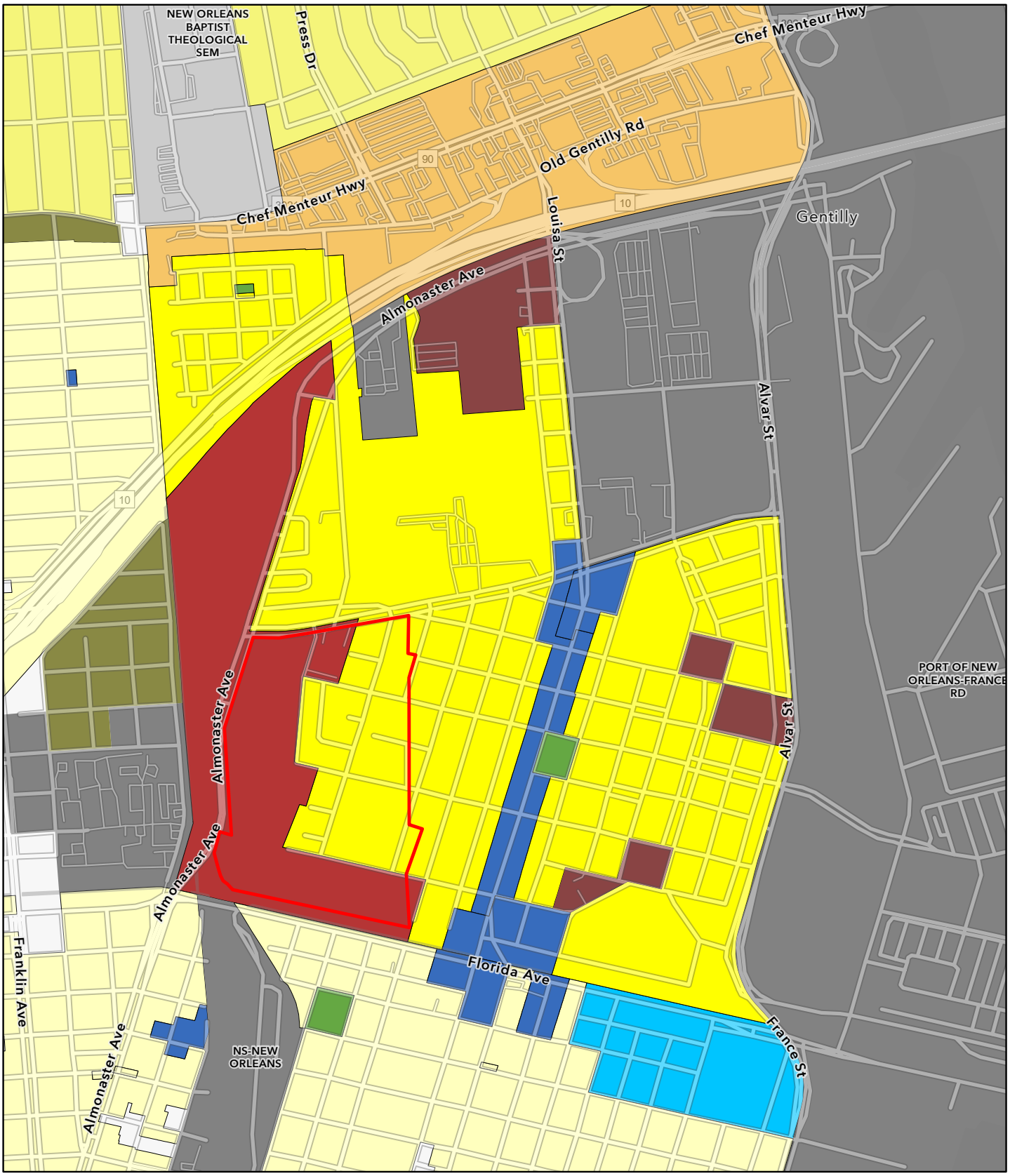


Figure 2. Future Land Use Map (City of New Orleans Comprehensive Plan)

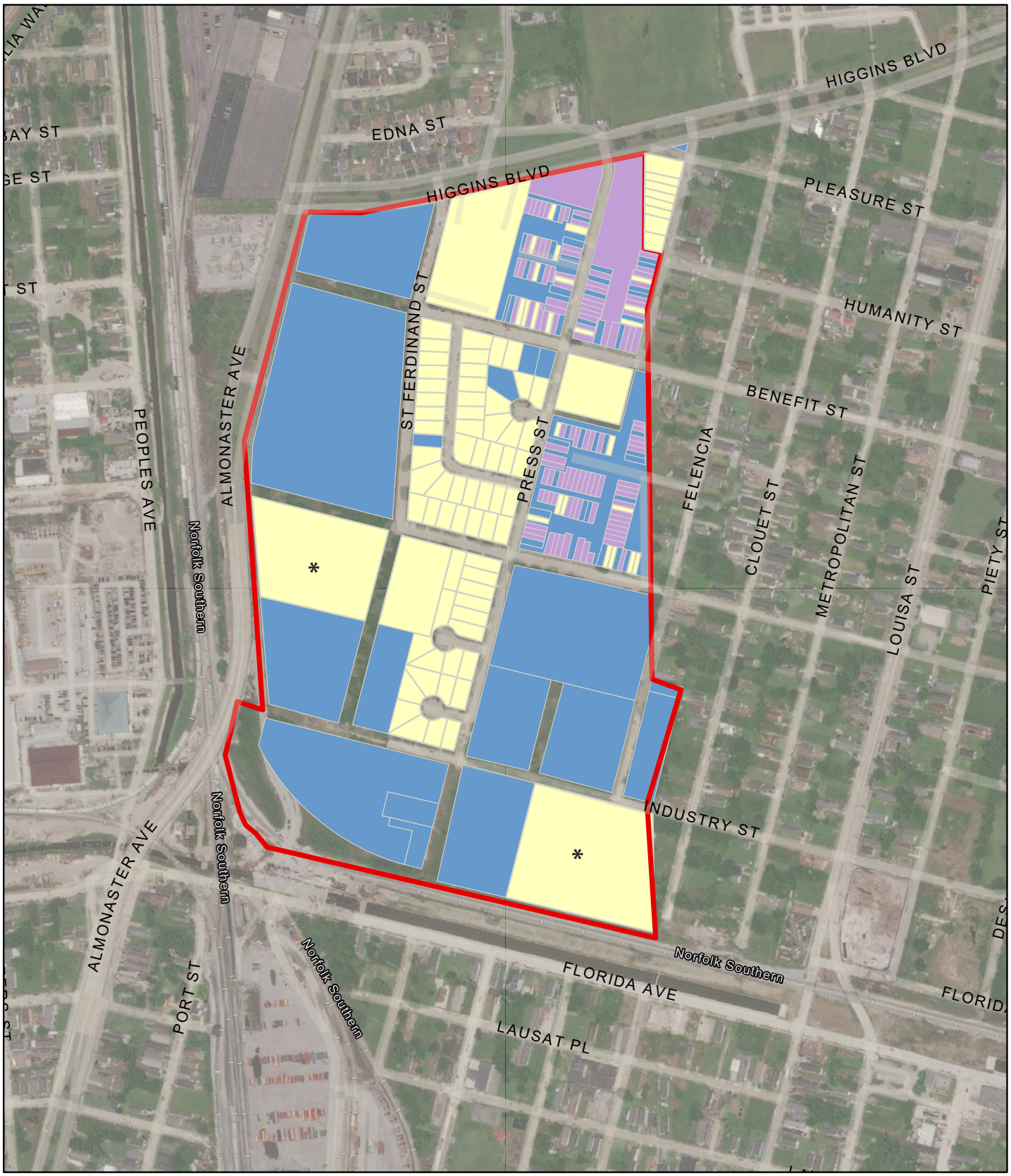


Figure 3. Property Ownership Map

CLEANUP STATUS

EPA placed the Site on the Superfund program's National Priorities List (NPL) in 1994. Cleanup took several years and was accomplished through a series of time-critical removal actions to address lead contamination in soils. EPA cleaned up most Site properties however, nine residential property owners declined to participate. Several neighborhood residents requested buyouts as part of the remedy. Buyouts were not part of EPA's remedy for the Site and the Site's human health risk assessment did not indicate that buyouts were necessary.

Site Remedy Features

To guide site investigations and manage the cleanup, EPA divided the Site into five operable units (OUs). OUs 1, 2, 3 and 4 are surface areas. OU5 is groundwater. Figure 4 shows the OUs.

OU1: Includes the former landfill disposal area, which is a fenced, undeveloped area covered with trees and brush. Cleanup activities at OU1 included waste removal, grading and placement of 12 inches of soil cover. Restrictions in place limit future development in the area. Utility trenching and maintenance protocols are in place.

OU2 and OU3: Include residential properties. EPA removed the top 24 inches of existing soil and waste material and backfilled the excavated areas with 24 inches of clean fill and vegetation. Single-family homes are located on central parts of OU2. Northern and eastern areas included former HANO and privately owned apartment buildings that were damaged by Hurricane Katrina and later demolished. OU3 included a community center and an outdoor playground, which are no longer there. Cleanup of OUs 2 and 3 met EPA's residential cleanups standard.

OU4: Includes the Moton Elementary School building and adjacent Magrauer Park areas. EPA selected a "no action" remedy for the OU because EPA found no risk to human health or the environment in the area. The southern part of OU4 is vacant open space, and Magrauer Park was previously located there. The former Moton Elementary School is located on the northern part of OU4. The facility is unoccupied, and its condition has deteriorated over time.

OU1 Landfill Area Excavation Protocol (per the Site's 2008 Consent Decree)

EPA's 2008 Consent Decree and Administrative Settlement includes provisions for utility excavation in the OU1 landfill area.

- The utility company shall notify the City that excavation below and penetration of the geotextile mat is necessary.
- Soils excavated within the top 2 feet of the excavation (above the geotextile) may be set aside and used as backfill in the same area.
- The geotextile must be cut to provide access below the mat.
- Soil excavated from below the mat is considered landfill material. Each utility company must determine, after consulting with a certified industrial hygienist, the proper personal protective equipment needed to accomplish the work.
- After completion of the work, the excavated soil (from below the mat) may be placed back into the excavation as backfill (to an elevation not to exceed the elevation of the adjacent geotextile mat). Alternatively, the utility company may test it and dispose of it properly at a facility designated by the City.
- After backfilling below the remedy area, the geotextile and marker must be restored. The geotextile must be patched by cutting a piece of new fabric so that there is an overlap of 3 feet on all sides. The fabric used as the patch shall be of the same quality and properties as the original fabric.
- The soils excavated from the top 2 feet shall be used as backfill above the geotextile mat.

Key Remedial Considerations

- EPA's cleanup at the Site is protective of human health and the environment for current and anticipated future uses.
- The selected remedy and Consent Decree require specific excavation protocols. They align closely with utility excavations and trenching work that would likely be needed to extend electrical connections to a solar facility at the Site.
- OUs 2 and 3 also have excavation limitations below 2 feet. About one-third of OU2 is vacant former multi-family housing. Part of the area is single-family housing. This area is in continued use. OU4 has few limitations regarding soil excavation and access.
- While EPA's time-critical removal actions addressed most of the Site, nine homeowners elected not to participate. Therefore, EPA put institutional controls in place for these properties. These controls notify the public that the properties may contain soils that are not compatible with non-industrial land uses.
- Based on the remedy at the Site, OU1, OU2, OU3 and OU4 could all safely host a solar facility, EV charging and parking, storage facilities, and pollinator habitat.

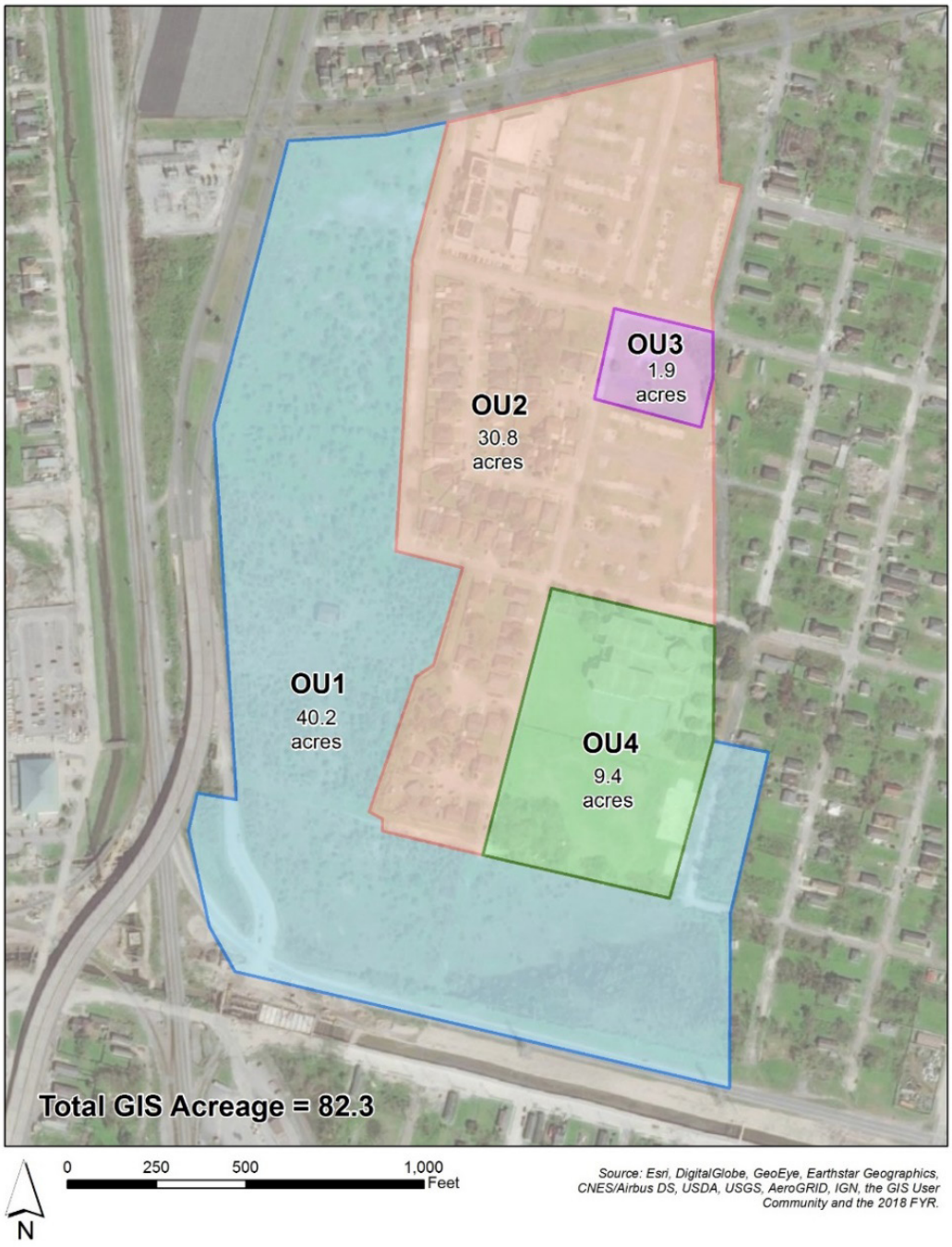


Figure 4. Map of Site OUs

REUSE SUITABILITY ZONES

This table identifies five areas, or reuse zones, that may be able to accommodate the City's future use goals based on the Site's remedy features, current land uses and property ownership status. The table also identifies key future use and remedy considerations for each reuse zone. Figure 5 is a map of the reuse zones.

Reuse Zone	Future Use Considerations	Remedy Considerations
Zone A City Owned Undeveloped Open Space 40.8 acres	Priority location for a solar facility due to its proximity to a substation. • Limited preparation or land clearance. • Properties owned by the City, school board or private parties (City is working with private owners to acquire them). • Opportunity to maintain a vegetated buffer (pollinator habitat) along the Site's eastern edge, between planned solar facility and existing housing. • Opportunity to expand solar into other zones if needed or if existing land use changes.	• Any development would need to include stormwater management considerations. For solar facility, micro-swales in between panels could direct or manage water and minimize erosion. • Utility excavation protocols outline process for maintenance, disturbance and replacement of soil cover.
Zone B HANO Owned Vacant, Concrete Slabs 17.5 total acres B1 - 4.4 acres B2 - 4.3 acres B3 - 8.7 acres	Offers an alternate location for a solar facility or for a multi-use area for community recreation and municipal facilities. • Property consolidation is in process between HANO and private owners. • Existing concrete slabs of varying sizes and depths. • Buffer opportunity between any new development and existing residential areas. A vegetated buffer could include pollinator habitat. • The B1 and B2 zones have access and visibility from Higgins Boulevard. These zones may be most suitable for EV charging or city storage in order to avoid non-residential traffic. Benefit Street may be able to be used as a utility corridor to the substation. • The B3 zone may be more suitable for community recreational uses.	• If slabs are removed, more investigation would be needed. Based on the findings, more cleanup may be required. • Slab thickness and condition likely varies. The Reuse Examples section provides examples of slab management for compatibility with future uses.
Zone C School Board Owned Vacant Building and Parking 4.8 acres	Offers an alternative location for a solar facility or a multi-use area for community recreation. • Former school building is likely unusable and will need to be demolished. • Reuse of remaining building slabs or parking could be possible. • Large trees could be retained.	• If building or paved areas are removed, more investigation would be needed. Based on the findings, more cleanup may be required.
Zone D Privately Owned Commercial and Residential 2.8 acres	This area has ongoing commercial and residential uses. • Opportunity to buffer new adjacent uses if needed.	• Any new development or underground utility work would need to be coordinated with EPA.
Zone E Privately Owned Residential 11.8 total acres E1 - 4.3 acres E2 - 4.4 acre E3 - 3.1 acres	Ongoing residential use. • Opportunity to buffer new adjacent uses from existing residential areas. • Potential for solar facility expansion in areas of voluntary relocation.	• If buildings or slabs are removed, more investigation would be needed. Based on the findings, more cleanup may be required.

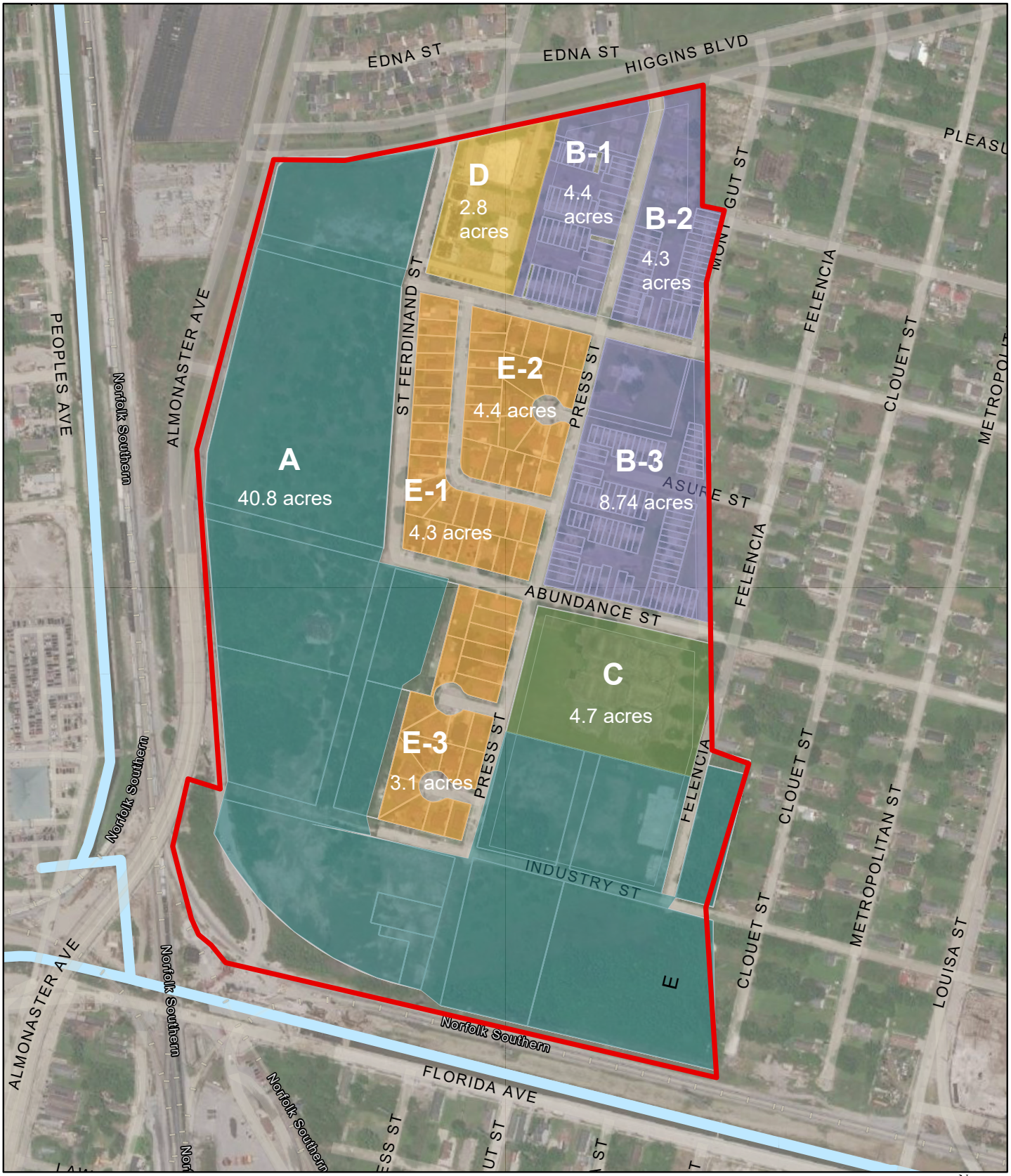


Figure 5. Map of the Site's Five Reuse Suitability Zones

FUTURE USE SCENARIOS

Two potential future use scenarios for the Site are described below but are not the only options available. These two possible scenarios build on the reuse suitability analysis, and they include different configurations of the following reuse opportunities: existing homes and businesses, a 40-acre solar facility, sustainable municipal facilities, open space and community recreational uses.

UPDATE - During the development of this report, the New Orleans City Council agreed, at a meeting held on June 23, 2022, to allocate $35 million for voluntary relocation of Gordon Plaza residents. The City is moving forward with relocation plans. Some residents may choose to remain in their homes, while others are anticipated to choose relocation. A third future use scenario has been incorporated into this report to highlight solar expansion into the Gordon Plaza area, recognizing that relocation may occur over time and may not include all residents.

SCENARIO A – clusters a solar facility along the western and southern boundary of the Site and provides central green space serving the two adjacent residential areas (Figure 6).

SCENARIO B – locates solar facility in the western and eastern portions of the Site, with green space buffers between solar uses and existing residential areas (Figure 7).

SCENARIO C – expands solar into Gordon Plaza, which may be impacted by how many residents choose to relocate, and preserves existing trees and green space (Figure 8).

Solar Facility

Recreation, Open Space and Community Use

Sustainable Municipal Facility Uses

Existing Residential and Commercial Use

Considerations

All scenarios include an area for city use, such as storage and/or EV charging in the northeast corner of the Site. With convenient access from Higgins Boulevard, the area could accommodate city needs for a bus parking maintenance facility and EV charging stations. Combining solar and EV charging offers a low emissions reuse option, helping to meet the City's sustainability goals of reducing its carbon footprint and expanding alternative energy sources. The scenarios also consider access to the undeveloped western part of the Site. Extending the existing street network of Benefit Street and Abundance Street could provide restricted access to a solar facility in this area for operation and maintenance activities. All scenarios include open space that could be maintained as open lawn or low mow areas for pollinator habitat. Areas maintained for pollinator habitat can include a range of shallow-rooted plants, such as perennials and grasses that attract pollinator species like birds and butterflies, while also being aesthetically pleasing. As pedestrian and bike connectivity improves throughout the community, conversion of the green space for trails or a bike park could be considered to expand recreation amenities. For example, the City is developing a bike park on the west bank and would like to identify locations for similar uses on the east bank.

Future Use Scenario A

Scenario A clusters a solar facility along the western and southern boundary of the Site and provides central green space serving the two adjacent residential areas (Figure 6).

Solar Facility: site preparation would include clearing and removing vegetation and complying with utility excavation requirements for the OU1 landfill area.

Recreation, Open Space and Community Use: portions of OU3 and 4 could provide green space for the two adjacent residential communities and retain the trees on the former school property. If the school building is demolished, the concrete pads or parking areas could potentially be converted into covered sport-court space, providing more recreation opportunities. Solar PV panels could be installed on the roof for lighting or other electrical needs on site.

Sustainable Municipal Facility Uses: the part of OU3 along Higgins Boulevard could be developed for municipal facility uses, such as EV charging or storage. Site preparation would include additional sampling if slabs are removed and compliance with utility excavation requirements.

Residential and Commercial Use: continued use of occupied housing and businesses in the Gordon Plaza Apartments complex and Gordon Plaza is anticipated for residents who wish to remain. It is likely that residents may also choose to relocate outside of the Site permanently.

Figure 6. Map of Future Use Scenario A

Future Use Scenario B

Scenario B locates a solar facility in the western and eastern portions of the Site, with green space buffers between solar uses and existing residential areas (Figure 7).

Solar Facility: site preparation for the OU1 landfill area in the east would include clearing and removing vegetation and complying with utility excavation requirements. For the areas in OU2, existing slabs may need to be removed or demolished and ground up to create a foundation for the solar array installation.

Recreation, Open Space and Community Use: buffer areas along Press Street could screen the solar facility and provide a greenway path opportunity to connect area residents with the canal green space proposed for the southern part of the Site.

Sustainable Municipal Facility Uses: the portion of OU3 along Higgins Boulevard could be developed for municipal facility uses, such as EV charging or storage. Site preparation would include additional sampling if slabs are removed and compliance with utility excavation requirements.

Residential and Commercial Use: continued use of occupied housing and businesses in the Gordon Plaza Apartments complex and Gordon Plaza is anticipated for residents who wish to remain. It is likely that residents may also choose to relocate outside of the Site permanently.

Figure 7. Map of Future Use Scenario B

Future Use Scenario C

Scenario C expands solar into the Gordon Plaza area of the site (although solar expansion may be impacted by how many residents chose to remain) and preserves existing trees and green space (Figure 8).

Solar Facility: site preparation for the OU1 landfill area would include clearing and removing vegetation and complying with utility excavation requirements. For the areas in OU2 and OU3, vacated homes and existing slabs may need to be removed or demolished and ground up to create a foundation for solar array installation. Expansion of solar into Gordon Plaza will be informed by how many residents choose to remain or relocate.

Recreation, Open Space and Community Use: preserving the existing trees and green space of OU4 would provide open space for nearby residential communities, as well as provide additional park amenities.

Sustainable Municipal Facility Uses: the part of OU3 along Higgins Boulevard could be developed for municipal facility uses, such as EV charging or storage. Site preparation would include additional sampling if slabs are removed and compliance with utility excavation requirements.

Residential and Commercial Use: continued use of occupied businesses in the Gordon Plaza Apartments complex is anticipated. This scenario assumes many residents may choose to relocate from Gordon Plaza, and solar could expand into vacated areas.

Figure 8. Map of Future Use Scenario C

REUSE EXAMPLES

Below are two examples from other communities that incorporated former concrete slabs into their redevelopment plans and two examples of formerly contaminated lands that now host pollinator habitat.

GM Massena (New York)

At the GM Massena Superfund site, EPA oversaw cleanup of a former aluminum automotive parts plant. The facility included a 1-million-square-foot building that was contaminated with polychlorinated biphenyls (PCBs). Demolition of the building and slab, followed by extensive subsurface soil remediation, was required. Concrete slabs were 2 to 4 feet thick, and the PCB contamination in the slab materials varied across the building footprint. As demolition progressed, slab materials were segregated into materials that required off-site disposal in a hazardous waste landfill and materials that were crushed, stabilized and mixed with aggregate to create a medium-to-fine-grained, compactable gravel surface.

View of building slabs at the GM Massena Superfund site

For more information, please contact EPA project manager Anne Kelly at kelly.anne@epa.gov or Brendan Mullen, project manager with the RACER Trust, at bmullen@racertrust.org.

Des Moines TCE (Iowa)

At the Des Moines TCE Superfund site, EPA has been working with the city of Des Moines and a developer to coordinate cleanup and redevelopment activities. The planned reuse focuses on a sports stadium complex, slated to be the home of a professional soccer team. Along with a hotel and retail amenities, more soccer fields, and an athletic training center, the proposed redevelopment focuses on a 40-acre property that was once home to Dico, a steel products manufacturer. Cleanup activities include ongoing groundwater treatment, building demolition, and lagoon and pond sediment remediation.

View of paved areas at the former Dico facility.

Illustration of proposed stadium
Source: Krause + / INVISION Architecture/Gensler Architecture

The stadium will cover a 20-acre area that is capped with asphalt pavement and concrete building slabs. As EPA has worked with the development team to coordinate cleanup and redevelopment, planning for the final surface cover that will replace the existing cap has been a priority focus area. EPA's cleanup activities addressed PCB-contaminated building slabs by demolishing the buildings and underlying concrete surface and then disposing of materials in an off-site landfill. The development team identified an innovative way to use the asphalt that covers most of the site's capped areas. Plans call for the asphalt surface to be crushed into gravel in place, where it will remain as a grading layer beneath additional fill and new durable paved surfaces. This approach provides a flexible way to consolidate materials on site, transform an unstable surface into a malleable layer, and allow future development structures to "float" on top of stabilized subsurface soils.

For more information, please contact EPA Region 7 Superfund Redevelopment program coordinator Tonya Howell at howell.tonya@epa.gov.

EPA and Pollinator Protection

A pollinator is an animal that moves pollen within a flower or to another flower, fertilizing the plant. There are about 200,000 species of pollinators. They include bees, butterflies, wasps, beetles, birds and bats. Many types of plants, including native plants and crops, require pollination to bear fruit. Recent declines in pollinator populations – and bees in particular – have raised concerns about the future of food supplies worldwide. To help address this problem, EPA launched the Pollinator Protection Initiative. Below are two examples of wildflower plantings and other activities to help revive pollinator populations.

Bayou Verdine (Louisiana)

Bayou Verdine is a shallow tidal channel in a heavily industrialized area of southwestern Louisiana. The bayou flows into the Calcasieu Estuary, an important nursery area for many fish and wildlife species. Surrounding areas support commercial and heavy industrial uses, with some natural riparian areas. Over time, contaminants from heavy industry, refinery operations and stormwater runoff accumulated in sediments and surface water of Bayou Verdine. To remove industrial contamination, about 1.5 miles of the bayou were dredged, and the contaminated sediments were placed in a containment cell and capped.

Wildflowers on the capped containment cell and bioswale.

To improve the ecological function of the area, EPA and the responsible parties, Phillips 66 and Sasol North America, worked together on ecological enhancements. The containment cell cap was seeded with native wildflowers to create pollinator habitat. To provide habitat for bees, butterflies and other pollinator species, eight areas of the containment cell's capped surface were seeded with six species of native wildflowers – dense blazing star, clasping cone flower, black-eyed susan, red plains coreopsis, showy primrose and butterfly weed. Each of these native species attracts pollinators and thrives in hot, humid conditions. Remaining areas were hydroseeded with conventional grasses, such as bermudagrass, clover and rye. Over time, the planting of the pollinator habitat will expand to include much of the containment cell's cover. The Pollinator Partnership – a nonprofit organization dedicated to the protection and promotion of pollinators and their ecosystems – also helped with the creation of the pollinator habitat. The organization may be a resource for the City when considering converting vacant Site areas into pollinator habitat. EPA's case study is available at https://semspub.epa.gov/src/document/06/500024318. More information about the Pollinator Partnership is available at https://www.pollinator.org.

Tulsa Fuels (Oklahoma)

The Tulsa Fuel and Manufacturing (TFM) Superfund site is in northeastern Oklahoma. A zinc smelter and lead roaster operated on site from 1914 through 1925. During the cleanup, about 186,000 cubic yards of waste, soil and sediment contaminated with heavy metals were placed in a 10-acre landfill on site. The restored cap was replanted with a mix of native grasses and clover, an ideal habitat for honeybees. In spring 2019, after reaching an agreement with the Site's property owner, a cooperative of local businesses installed honeybee hives on site for their honey-making operations. Today, the Shadow Mountain Honey Company, in partnership with Ide's Gary Avenue Gold Honey, uses the site to house about 30 hives – all rescued and relocated from places where the swarms presented a nuisance and would otherwise have been exterminated. The companies plan to use the site to relocate more swarms in the future, helping to sustain the area's pollinator population.

Bee hives on site.

For more information about the site, visit https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.cleanup&id=0604674 and https://www.epa.gov/newsreleases/epa-celebrates-20-years-superfund-redevelopment-recognizes-restored-site-collinsville.

MOVING FORWARD

This reuse assessment has identified a set of compelling future use opportunities for the Agriculture Street Landfill Superfund site. These uses can provide significant benefits for area residents, property owners, organizations, and the City of New Orleans. Planning for the future use of city-owned and vacant properties:

- Opens up potential to coordinate a broader future-use vision across publicly owned properties.
- Enables nearby residential areas to benefit from more neighborhood amenities, services and open space that complement ongoing revitalization efforts.
- Creates an opportunity to offset pump station energy demands with a source of renewable solar energy.
- Establishes the potential for new city uses (EV charging or storage) with convenient access from Almonaster Boulevard and Higgins Boulevard.
- Creates an opportunity to integrate larger-scale, open space resources in the area.

Ongoing coordination and collaboration between EPA and the City resulted in the assessment's reuse suitability zones and future use scenarios that can provide a flexible framework for phasing in site redevelopment over time, meeting the City's goals for clean energy initiatives, sustainable municipal needs and expanded green-space resources at the Site.

Looking forward, planning for these uses will need to make sure that they remain compatible with the Site's remedy and Consent Decree, which specifies that the cover must be maintained and establishes protocols for soil handling and utility trenches.

CONTACT INFORMATION

EPA Region 6
Casey Luckett Snyder
(214) 665-7393
luckett.casey@epa.gov

EPA's Superfund Redevelopment Program
https://www.epa.gov/superfund-redevelopment

City of New Orleans
Cheryn Robles
Environmental Affairs Administrator
(504) 658-8046
crobles@nola.gov