

Standards of Review for Conditional Use Permit Applications, Sec.65.285 City of Orlando Code of Ordinances

OUC Lake Highland Substation Expansion and Water Treatment Plant Upgrade

Date: February 16, 2026

1. Purpose and Intent

The applicant, Orlando Utilities Commission (OUC), requests approval of a Conditional Use Permit (CUP) to allow improvements to the existing OUC Lake Highland utility facilities, including:

- Electrical substation expansion and related upgrades, including a decorative perimeter wall; and
- Water treatment plant upgrades, including installation of a Granular Activated Carbon (GAC) treatment system.

OUC’s Lake Highland Substation is part of the Downtown 230 kV Project and is intended to meet increasing load demand associated with customer growth while maintaining system reliability.

The proposed water treatment plant upgrades are intended to enhance treatment performance and operational resiliency at the Lake Highland Water Treatment Plant. A GAC system is generally a low-impact upgrade for a water treatment plant.

GAC stands for **Granular Activated Carbon** and is a filtration/adsorption process where water passes through large vessels filled with activated carbon media. The carbon has an enormous surface area and is excellent at removing certain contaminants.

A GAC system is typically installed to improve removal of things like:

- Taste and odor compounds
- Organic chemicals (natural organic matter, pesticides, industrial compounds)

2. Existing Conditions and Entitlements

Site Information

Location	1020 Highland Avenue, Orlando, FL 32803
Parcel ID	23-22-29-2552-00-010
Approximate Site Area	± 9.8 acres
Site Conditions	Vacant & Existing Water Treatment Plant

The City of Orlando (Orlando Utilities Commission) property is located on the west side of Highland Avenue, north of Weber Street, and south of a railroad right-of-way. The property includes existing utility infrastructure associated with the water plant but is otherwise vacant following prior demolition activities. The water treatment plant portion of the property (SE Corner) contains existing commercial buildings.

Location Map



Changes Since 2018

OUC has completed the demolition of above-ground and below-ground structures on the site, including two one-story commercial buildings. All demolition work was permitted through the City under an approved demolition permit.

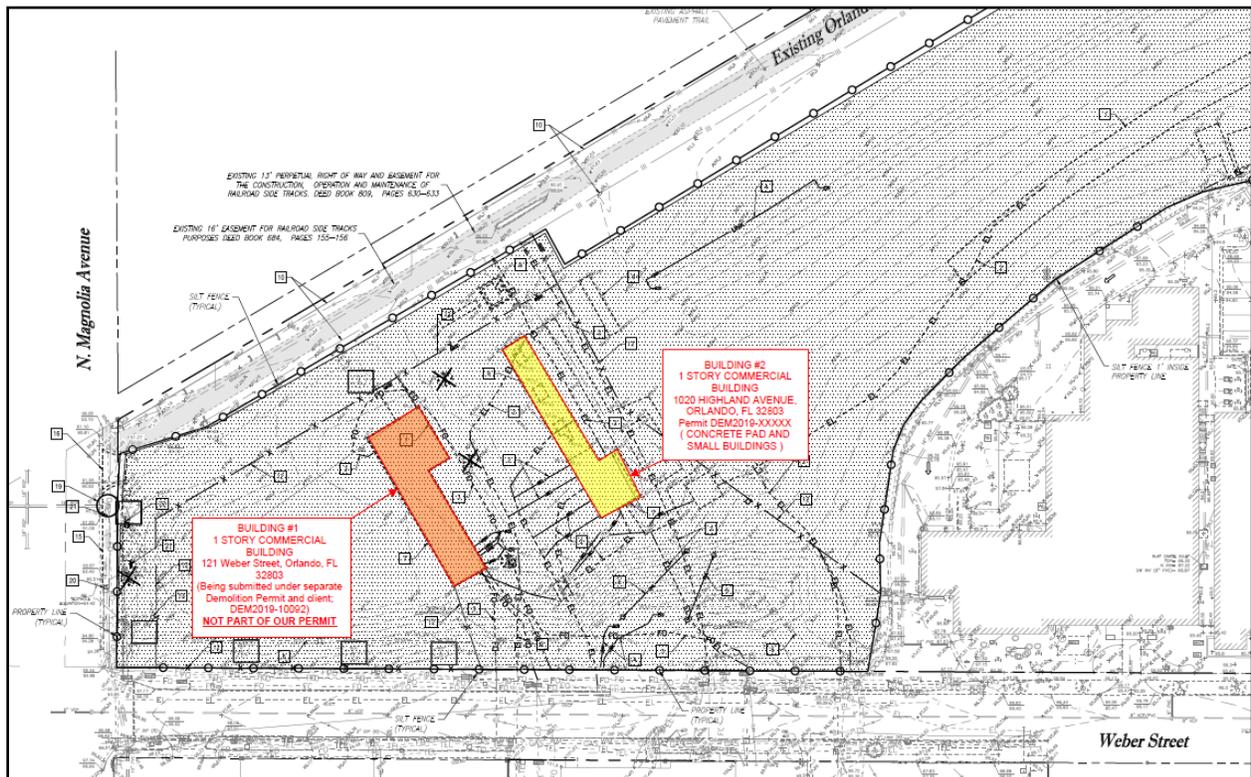
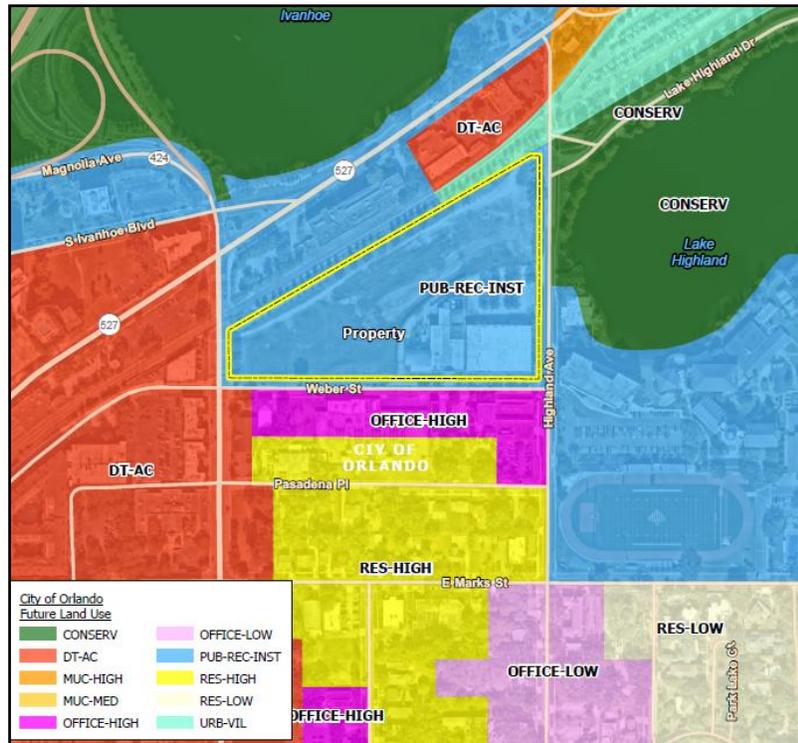


Figure 1. Demolition plan / existing site features (for reference).

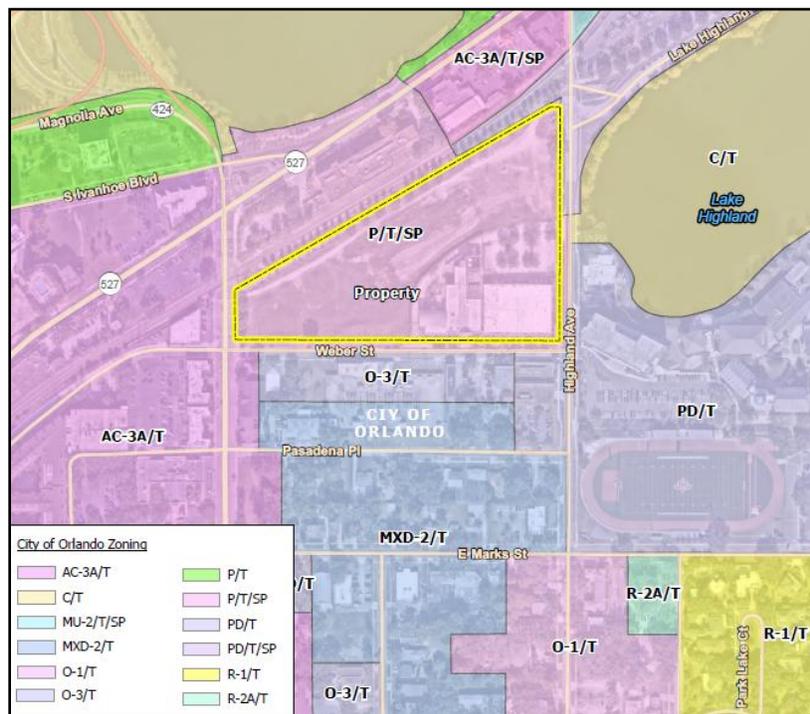
Future Land Use

The future land use of the subject property is designated as Public/Recreational and Institutional. A full-size map is attached.



Zoning

The zoning of the subject property is P/T/SP. A full-size map is attached for reference.



Surrounding Future Land Use and Zoning

The subject property is located in an established urban context with a mix of public/institutional, office, and downtown activity center land uses. The table below summarizes surrounding future land use and zoning designations.

Direction	Future Land Use	Zoning
North	Public/Recreational/ Institutional	AC-3A/T/SP
East	Public/Recreational/Institutional & Conservation	PD/T & C/T
South	Office, High Intensity	O-3/T
West	Downtown Activity Center (DT/AC)	AC-3A/T

The proposed Conditional Use for an electrical substation is evaluated against the criteria in Section 65.285 Standards of Review for Conditional Use Permit applications; these standards are provided with responses below.

3. Growth Management Plan Consistency

The following evaluates the proposed Conditional Use for consistency with applicable Goals, Objectives, Policies of the City of Orlando Growth Management Plan. Relevant policies are included below, along with a corresponding response describing compliance. Responses are provided in bold demonstrating that the proposed conditional use is consistent with the City of Orlando Growth Management Plan.

Future Land Use Element

POLICY 1.1.1: In its consideration of land development applications and final development orders, the City shall protect viable and stable neighborhoods from uses not in keeping with their established character and use. The City's Land Development Regulations shall include standards which protect such neighborhoods from uses not in keeping with their established character and use, such as landscaping and buffering requirements, building height and bulk restrictions, and standards requiring setbacks and separation between uses.

Response: The proposed electrical substation and water treatment plant upgrades are consistent with the existing development pattern in the surrounding area and are compatible with adjacent properties. The site is bordered to the south by existing office uses and an existing electrical substation. Overall, the surrounding area includes a mix of office, commercial, institutional, and residential uses.

The proposed electrical substation improvements will also be screened with decorative walls and enhanced landscaping to provide additional buffering.

Additionally, the water treatment plant is an established, existing use on the property and should not create any nuisance impacts to the surrounding areas.

From a neighborhood compatibility perspective, GAC systems are generally:

- **Quiet during normal operation**
- **Contained within existing plant infrastructure**
- **Not associated with odors or air emissions**
- **Upgrades typically do not create significant off-site impacts.**

Transportation Element

POLICY 1.8.13 No development order or building permit shall be issued which creates or exacerbates a significant safety hazard on the transportation system. The developer shall mitigate the adverse impact or provide safe and adequate access to other thoroughfares as long as such connections are consistent with access spacing, sight distance and other geometrics standards.

Response: The electrical substation and water treatment plan upgrade proposed for the subject site will have a minimal impact on the transportation system. Substations are utility infrastructure uses, and once constructed, have very minimal day-to-day activity. There's no regular customer traffic and most of the traffic is limited to:

- **occasional maintenance crews**
- **periodic inspections; and**
- **emergency response only when needed.**

Housing Element

OBJECTIVE 1.3 The City shall develop criteria for the placement of public facilities which will encourage the preservation of the existing housing stock, and which will minimize the relocation of residents and demolition of housing.

Response: The proposed placement of an electrical substation on the subject site nor the GAC upgrade to the water treatment plant will harm the preservation of existing housing stock. No demolition of existing housing stock is proposed for the intended improvements. And no relocation of residents is necessary.

POLICY 1.3.1 The placement of public facilities shall be planned to minimize the demolition of housing and related relocation of residents.

Response: The proposed use of the site for an OUC electrical substation and GAC upgrade to the water treatment plant will minimize the impacts of public facilities on existing housing and residents with walls and landscaping. This site is adjacent to an existing electrical substation to

the south, a professional office to the east, and it would be buffered by a road right-of-way to the west, as well as a multi-use path and rail line to the north. No demolition of existing housing is proposed to implement the proposed improvements.

Solid Waste Element

POLICY 2.3.5 The City shall require all new businesses which will store hazardous materials or generate hazardous wastes to register their materials or waste with the City at the time of zoning review.

Response: The proposed electrical substation use will not require the storage of hazardous waste on-site. The GAC system will also not produce hazardous chemicals as it is a physical/chemical adsorption process, not a chemical reaction process.

Conservation Element

POLICY 1.5.7 Because buffering, screening and landscaping between different uses act to eliminate or minimize potential nuisances such as dirt, litter, noise and the glare of lighting, the City shall maintain standards for buffering and screening, as found in the Land Development Code. These standards require minimum planting areas or setbacks for trees within buffer yards, and other buffer yard design requirements such as the retention of ground cover, and the use of xeriscape. Xeriscape practices require a mixture of native plants with drought-resistant properties, including canopy trees, understory trees, and shrubbery

Response: The proposed use will be consistent with the buffering, screening and landscaping requirements of the City's Land Development Code.

POLICY 1.6.2 If an Environmental Assessment, as described in Policy 1.4.1, indicates that Endangered or Threatened Species, or Species of Special Concern are found on site, the City shall require that the applicant work with the appropriate wildlife agencies on appropriate protection measures. Such measures may include preservation, habitat management, species relocation, or incidental taking as authorized by the wildlife agencies. The City shall issue no development approvals that are inconsistent with Federal or State Management Plans.

Response: An Environmental Assessment was conducted for the subject site in 2018 and surrounding properties. No Endangered or Threatened Species, or Species of Special Concern were found on the subject site. A copy of the full findings may be found in the Environmental Assessment attached.

4. Compatibility

The compatibility of the proposal with surrounding land uses and the general character of the area includes such factors as height, bulk, scale, intensity, traffic, noise, drainage, dust, lighting and appearance. The compatibility of the proposal with surrounding land uses and the general character of

the area including such factors as height, bulk, scale, intensity, traffic, noise, drainage, dust, lighting, and appearance.

Response: The proposed Conditional Use is consistent with uses in the surrounding area, and compatible with adjacent properties. The site is adjacent to an existing OUC electrical substation to the south (across Weber Street), and it abuts an existing OUC professional office building to the east. The proposed Conditional Use and subject site is buffered from existing uses to the west by a four-lane roadway, as well as a multi-use bicycle/pedestrian trail and a rail line to the north.

5. Residential Displacement

The proposed uses of an electrical substation expansion and a water treatment plant upgrade will not displace or encourage displacement of residential uses. The proposed electrical substation expansion is proposed on a vacant property and will include site designs that will buffer the use from neighboring properties. The water treatment plant is an existing use on the subject property and is being upgraded to include a GAC system.

6. Public Facilities and Services

The subject property has access to municipal water and sewer service. However, the applicant does not intend to connect the electrical substation to potable water or sewer services. The proposed use will have a negligible impact on solid waste.

7. Impact Mitigation

Strategies to Minimize Impacts on Surrounding Areas

- Provide perimeter screening (including walls) and landscaping to mitigate visual impacts and enhance security.
- Preserve existing trees where feasible and plant additional canopy/screening trees as shown on the landscape plan.
- Utilize existing roadway access (including Highland Avenue and N. Magnolia Avenue) to minimize impacts to neighborhood streets.

8. Section 58.816 of the Orlando Land Development Code sets forth review criteria for Conditional Use Permit applications for Public Benefit Uses.

In addition to the criteria put forth in Section 65.285 a Public Benefit Use must also meet the following criteria:

Benefits

What are the benefits to customers?

OUC's transmission system connects energy distribution through a high voltage network of lines, substations, and controls that serve customers' homes and businesses. As load demand increases due to customer growth, OUC is embarking on transmission projects to maintain reliability throughout our service territory.

The installation of a Granular Activated Carbon (GAC) treatment system provides significant public benefits by enhancing drinking water quality through the removal of trace organic contaminants, improving taste and odor, and reducing the potential formation of regulated disinfection byproducts. GAC treatment offers an additional layer of protection for public health while requiring minimal chemical addition and producing limited off-site impacts, supporting long-term reliability and regulatory compliance of the municipal water supply.

What are the benefits to OUC?

Allow OUC to maintain reliability and quality services into the future.

The review criteria include traffic, noise abatement, protection of residential neighborhoods, and encouragement of multiple transportation modes.

A. Traffic. Vehicular ingress, egress, and on-site circulation must be designed and constructed to ensure the least possible impact on neighboring properties and residential streets. Primary ingress and egress must be from the highest service level adjacent street, unless otherwise approved by the Municipal Planning Board and City Council.

Response: The proposed electrical substation will have access from N. Magnolia Avenue as well as Highland Avenue. This vehicular ingress and egress will ensure multiple access points to have the least possible impact on neighboring properties and residential streets. Further, the proposed use will generate minimal trips compared to adjacent uses. The proposed electrical substation use will generate de minimis trips, as it is not a manned facility. Access to the site will be from Highland Avenue to the east and Weber Street to the south. The water treatment plan exists so access will remain the same.

B. Noise Abatement. Public benefit uses often involve groups of people arriving and departing at one time (as is common with many assembly PBUs), emergency response vehicles that use sirens or horns (as is common with many light PBUs), or noisy equipment (as is common with many intensive PBUs). Therefore, issues related to noise from gatherings, events, vehicles, and equipment must be addressed through conditions of approval for a conditional use permit. Conditions including but not limited to the location of outdoor use areas on the property, limitations on hours or days of operation, and additional noise abatement strategies may be required.

Response: The Conditional Use Permit is being requested to accommodate an electrical substation and a GAC upgrade to the existing water treatment plant. The new electrical substation will not include assembly uses, gatherings or events. Perimeter screening and walls will be provided to ensure security and minimize visual and noise impacts on neighboring properties. This screening will include a ten (10)-foot security/retaining wall, as well as

preservation of existing oaks along Weber Street. Planting of additional canopy and screening trees will provide additional visual mitigation.

C. Protects Residential Neighborhoods. Outdoor use areas, including vehicular use areas, must be located and designed to minimize potential negative impacts on residential zoning districts and residential uses in approved PDs, including but not limited to mitigation of light spillover, glare, noise (from mechanical equipment, recreational facilities, outdoor classrooms, etc.), and any other negative impacts associated with the type of public benefit use proposed.

Response: As depicted on the Conditional Use Plan provided a ten (10)- foot security/retaining wall will be constructed along the perimeter of the property to provide screening of the proposed substation from public rights-of-way and adjacent properties. As noted above, existing oak trees will be preserved and new trees planted to mitigate off-site visual impacts. A rendering of the proposed 10' security/retaining wall and proposed landscaping is included for reference. A concurrent ARB application has been submitted.

D. Encourages Multiple Transportation Modes. In order to better serve all segments of the population, public benefit uses should be designed and located to provide the greatest possible choice of transportation modes. Conditional use permit applications for public benefit uses shall be evaluated on a case-by-case basis using information about the populations they are intended to serve, including the anticipated ages, mobility, and general geographic location of the target population. Conditions including but not limited to additional bicycle storage facilities, transit stops, sidewalk connections, mid-block crossings, and multiple pedestrian access points to the site (whether or not adjacent to a vehicular access point) may be required to meet the intent of this subsection.

Response: The subject site is bordered by Highland Avenue to the east, Weber Street to the south, and N. Magnolia Avenue to the west, all of which have sidewalk access. The site is adjacent to a shared-use bicycle/pedestrian trail to the north, which provides multi-modal transportation options.

9. Construction Overview and Impacts

The following summarizes anticipated construction-related impacts based on current project planning information. Details may be refined as construction phasing and logistics are finalized.

Impacts on Traffic and Businesses

What streets will be impacted throughout the course of the construction?

Trucks will be entering the site from Magnolia Avenue and Highland Avenue. Weber Street will also have some impact when the underground lines are installed to connect the Lake Highland Substation to the existing Weber Substation.

Will there be road closures?

Intermittent closure of Weber Street may be required toward the end of construction but nothing long term is anticipated.

Will there be new routes / roads / entrances created?

Both Highland Avenue and Magnolia Avenue have existing driveways/entrances to the site. Modifications will be needed for construction access to the new substation and for heavy-haul transporters.