PART II APPENDIX IIA LAND USE ANALYSIS

LAND USE ANALYSIS

Hawthorn Park Recycling and Disposal Facility Permit Amendment

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INTRODUCTION and DEFINITION OF TERMS

The Hawthorn Park Recycling and Disposal Facility consists of three landfill areas identified as East Block, Center Block and West Block. Each of these areas have been developed and have received waste. These areas were separated by road right of ways which were abandoned by the City of Houston in 2018. The Permit Amendment is for the horizontal and vertical expansion of the landfill which incorporates the previously developed areas, abandoned road right of ways, a closed landfill, and additional undeveloped property.

This land use analysis includes the following terms:

Area: Surrounding area within a one-mile radius of the total permit boundary

COH: City of Houston

COJV: City of Jersey Village

Region: Surrounding region within a five-mile radius of the total permit boundary

Site: Hawthorn Park RDF

ETJ: Extraterritorial jurisdiction of the COH beyond its corporate limit in accordance with Local Government Code of the State of Texas

Existing permit boundary: Perimeter of the current permitted area

Expansion area: Area of land to be added within the permit boundary

Expansion permit boundary: Perimeter of the expansion area

HCFCD: Harris County Flood Control District

RDF: Recycling and Disposal Facility

Total permit boundary: Perimeter of the entire facility for the permit amendment that includes the expansion area.

TxDOT: Texas Department of Transportation

This analysis focuses on land use outward from the total permit boundary with occasional reference to the expansion area or expansion permit boundary.

Surrounding land within one mile of the existing permit boundary, excluding the present facility, is approximately 3,631 acres, or 5.67 square miles. The 40-acre expansion area will extend the one-mile radius southward to add approximately 37.5 acres and northward to add approximately 17.1 acres. Surrounding land within one mile of the total proposed permit boundary, excluding the 40-acre Site expansion, is approximately 3,646 acres, or 5.70 square miles. Permit boundaries and one-mile radii are shown on *Drawing 1*.

ZONING

The Hawthorn Park RDF is located at a northwest edge of the COH in northwest Harris County. The total permit boundary is entirely within COH corporate limits. Most of the area within a two-mile radius of the total permit boundary is within COH corporate limits or within COH ETJ. All of the area within the two-mile radius of the total permit boundary is within Harris County. Neither COH nor Harris County have zoning regulations that control land use within each's respective jurisdiction. However, a southerly portion of the City of Jersey Village is within the northern limits of the two-mile radius of the total permit boundary. The COJV has zoning regulations.

Enclosed as *Drawing 2* is an exhibit that displays the zoned areas within a two-mile radius of the total permit boundary. Enclosed as *Drawing 3* is the current official zoning map obtained from the COJV on which the two-mile radius from the existing permit boundary and the two-mile radius from the total permit boundary have been added.

The zoned area within the two-mile radius of the total permit boundary is comprised of the following districts:

- 47% Zone "A" Single-Family Dwelling District (single-family, public recreation facility, municipal use, and water supply reservoir)
- 39% Zone "K" 5th Business District (service center and distribution warehouse)
- 7% Zone "G" 2nd Business District (light to medium commercial)
- 4% Zone "F" 1st Business / Townhouse District (light commercial and townhouse/patio home)
- 2% Zone "J-1" 4th Business District (office, medium commercial use, and pawnshop)
- 1% Zone "B" Single-Family & Patio Home District (single-family, townhouse/patio home, public recreation facility, municipal use, and water supply

Since the last permit amendment in 1994, growth in the southern part of Jersey Village has primarily included office, light commercial, and distribution warehouses.

SURROUNDING LAND USE

The character of surrounding land uses within a one-mile radius of the total permit boundary was investigated. Urban planners drove all streets and highways in the area and recorded the use of all properties utilizing a standard land use classification system. Fieldwork was completed in July 2020, using information from the county appraisal district in combination with recent aerial photography. The data collected were used to prepare the land use map required by 30 TAC sec. 330.61(g) and provided herein as **Drawing 4**.

The area immediately adjacent to the total permit boundary is mostly industrial or vacant. Between the Site and Tanner Road is a crushed concrete and asphalt recycling plant, a swimming pool fabrication facility, a Republic Services office and garbage truck parking lot, and a composting facility (the site of a closed landfill – TCEQ Permit #1135). There are five single-family homes between the crushed concrete and asphalt recycling facility, the total permit boundary, and Tanner Road. A sampling of the uses south of Tanner Road in the immediate proximity of the Site includes a CenterPoint electrical substation, a Lone Star Disposal office and waste container storage lot, a fireplace casting facility, and multiple vacant parcels. Due east of the total permit boundary is a storm water detention pond that serves the Hawthorn Park RDF. South and east of the detention pond are vacant tracts that front upon Tanner Road and Gessner Road respectively. North of the total permit boundary are industrial distribution warehouses. To the west toward Beltway 8 is a granite yard and a large commercial office building.

The prevailing land use in the Area is industrial. Many commercial tracts are also located throughout the Area, including both office parks and small businesses interspersed between residential and industrial uses. Additionally, there are a handful of older, single-family developments with a number of vacant lots. Two major highways traverse the area (Beltway 8 and US 290). The Area can be broken down into several subareas based on the major roadways surrounding the total permit boundary. Current land use within these subareas include the following:

- 1. To the north (south of Hempstead Road and east of Beltway 8), almost entirely industrial uses,
- 2. To the far northeast (northeast of Hempstead Road), a mixture of commercial, industrial, governmental, and educational uses,
- 3. To the west (west of Beltway 8), predominantly industrial uses, scattered commercial uses, three mobile home parks, and one large single-family development (Jersey Acres and Hilltop Acres adjoining subdivisions which function as one development),
- 4. To the south, (south of Tanner Road and east of Beltway 8), mainly single-family (Carverdale, Spring Branch Villa, Westbranch, and Westway Courtyard) and commercial uses, and several industrial, vacant, and church land uses,

5. To the east, (east of the Site up to the west side of Hempstead Road) a large open area with a detention pond, single-family use (Carverdale), many vacant parcels, and industrial uses.

The table below provides an approximate percentage breakdown, in descending order, of the existing land uses within one mile of the total permit boundary as shown on the land use map:

Land Use	Percent
Industrial	45.6%
Commercial	16.0%
Single-Family Residential	11.8%
Undeveloped/Vacant	8.1%
Highways, Streets, and Railroads	7.0%
Detention Ponds, Canals, and Creeks	4.9%
Government Facilities	1.9%
Electrical Substation/Utility Corridor	1.7%
Educational/Institutional	0.8%
Church and Cemetery	0.8%
Multifamily Residential	0.7%
Parks and Recreational Open Space	0.5%
Unbuilt Right-Of-Way	0.2%
·	100%

Of special note in the Area are the numerous properties that were damaged by a recent chemical explosion. On January 24, 2020, a 2,000-gallon propylene tank exploded at Watson Grinding & Manufacturing located near the southeast edge of the one-mile radius (noted on *Drawing 4* as "Site of Explosion"). The explosion caused extensive damage to the surrounding area including the total destruction of homes and several warehouses. The most affected areas were nearby industrial businesses and the Westway Courtyard residential subdivision. During the drive-by area analysis, roughly 50% of the homes within the subdivision were under repair or reconstruction.

As noted in the table above, over 45% of the land in the Area is industrial. The industrial land uses are wide ranging in nature – including distribution warehouses, manufacturing facilities, and metal/machinery fabrication facilities.

Commercial uses within the Area range from retail to office to hotel to auto service facilities. Many of the smaller commercial uses are interspersed between residential and industrial uses. Several large office parks are located throughout the Area.

Single-family residential includes 2,157 homes plus 48 additional homes presently under construction. Of those 48, 38 are a direct result of the chemical explosion noted above. Also, seven of the 2,157 total homes are duplexes. A majority of the homes are located within the following five subdivisions:

- Carverdale A suburban residential subdivision established in 1950, located 1/4 of a mile to the east and south.
- *Jersey Acres and Hilltop Acres* Two adjoining suburban residential subdivisions established in 1956 located 1/2 of a mile to the northwest.
- Spring Branch Villa A suburban residential subdivision established in 1954 located 1/2 of a mile to the southeast.
- Westbranch A suburban residential subdivision established in 1976 and developed through the mid 1980's, located 1/2 of a mile to the south.
- Westway Courtyard An unrecorded urban townhome subdivision established in in the 1960's, located one mile south of the Site.

Of the 2,157 total homes, 2,155 are within one mile of the existing permit boundary. Only two homes are added with the expansion permit boundary.

Four mobile home parks with a total of 257 mobile homes exist in the Area. Three of the four are on the west side. The Longhorn Mobile Park is 6/10 of a mile to the west and includes 113 mobile homes. The Brittmoore Mobile Home Park is 1/2 of a mile to the northwest and includes 53 mobile homes. An unnamed mobile home park on Tanner Road is 9/10 of a mile to the west and includes 84 mobile homes. A second unnamed mobile home park on Hempstead Road is 1/2 of a mile to the northeast and includes 7 mobile homes.

Three large multifamily uses are located in the Area. The Brittmoore is approximately 9/10 of a mile to the northwest and was developed in 2017 with 6 buildings housing 150 units. Stonehaven is 8/10 of a mile to the northeast and was developed in 2007 with 9 buildings housing 192 units. The Franklin is 1/2 of a mile due east and was developed in 2005 with 9 buildings housing 196 units. There are two additional small (one-lot) multifamily uses within the single-family developments that contain a total of 17 apartment units.

Approximately 8% of the Area is undeveloped or vacant. Undeveloped land also includes vacant lots within the older residential areas where the original homes have been razed. One former single-family area north of US 290 and west of Windfern Road (the Cole Creek Woods subdivision) has been made vacant through an HCFCD floodplain buyout program. A little over 95% of the subdivision is now green space owned by HCFCD.

Government uses in the Area include a fire station, a fire station training facility, a police substation, water treatment plants, TxDOT maintenance facilities, the Sommermeyer Northwest Transfer Station (TCEQ Permit #1092), and the Sommermeyer Neighborhood Depository (a solid waste facility). Several unnamed private and HCFCD detention ponds, canals, and ditches are within one mile of the total permit boundary. Cole Creek and the South Fork of Cole Creek are northeast of the Site and generally flow to the east.

GROWTH TRENDS, POPULATION PROJECTIONS, and DIRECTIONS OF MAJOR DEVELOPMENT

Northwest Harris County has experienced substantial suburban development in the past decade. However, most of this growth has been far beyond the five-mile radius of the Hawthorn Park RDF. Currently, the most significant growth in the region is occurring along the State Highway 99 (Grand Parkway) corridor, between US 290 and Interstate10 which was completed in 2013. Since then, several master planned communities have been developed on both the east and west sides of this highway. These communities are more than 10 miles from the Site. Most growth within five miles of the Site have been distribution warehouses along nearby Beltway 8 to the west and residential urban infill development within the Spring Branch area, approximately three to four miles to the southeast.

Based on historic aerial photography and government records, much of the Area was developed between the 1950's and the 1990's. Today, most large tracts have already been developed. No large-scale residential development has occurred in this Area within the past decade; however, several industrial and commercial land use projects have been completed, including office complexes and distribution warehouses.

Growth trends and directions of major development for northwest Harris County can be identified by reviewing recent subdivision platting within COH and its ETJ as shown on *Drawing 5*. Other smaller municipalities in the Region (Jersey Village, Hedwig Village, Spring Valley Village, and Hillshire Village) do not have recent platting information available in map form. In summary, the direction of growth and major development is outwards from the center of Houston to the west. Much of the recent large-scale platting activity has been west of State Highway 6, which is the approximate western limit of the Region. As previously mentioned, completion of State Highway 99 between US 290 and Interstate 10 in 2013 has generated substantial growth along and near this corridor far to the west. Primary growth within the Region is smaller urban infill and commercial/industrial projects due to the lack of large undeveloped tracts. Between 2015 and 2018, 242 subdivision plat applications were filed with COH for tracts within the five-mile radius. Of those 242 plats, 39% (95) were for single-family developments, comprised mostly of smaller infill/redevelopment projects.

Despite the near impossibility of large-scale residential development near the Site, population growth is still expected to increase in the foreseeable future according to area growth projection data prepared by the Houston-Galveston Area Council (HGAC). HGAC is an intergovernmental planning agency for the Houston metropolitan area that serves a thirteen-county region including Harris County. The agency's Data Services Department prepares and updates projections on regional population and employment growth. Current 27-year projections, available on HGAC's website, are provided for population, households, and employment from year 2018 through 2045. Projections are made per census tracts. (Please note that census tracts solely regard demographic information. They do not regard land use regulations such as zoning.) Census tracts

across and within one mile of the Site are shown on *Drawing 6* and listed in the table below.

Census Tracts	Population 2018	Population 2045	Households 2018	Households 2045	Employment 2018	Employment 2045
*5218	5,545	6,815	1,817	2,503	18,363	21,440
5216	3,918	33,426	1,211	13,657	12,679	23,711
5217	7,886	29,041	3,033	12,197	17,458	41,008
5342.03	1,972	11,120	665	3,741	6,627	13,198
5401	10,025	13,862	3,595	5,588	32,515	152,797
Totals	29,346	94,264	10,321	37,686	87,642	252,154

Source: Houston-Galveston Area Council, Data Services Department (www.h-gac.com/rds/forecasts)

For the 27-year period from 2018 to 2045, total population, households and employment within the referenced census tracts are projected to significantly increase. However, as evidenced by the figures above, the Area has and will continue to have substantially more employment than resident population. In 2018, the Area had more employees than residents by an approximate multiplier of 3. By 2045, the multiplier will slightly decrease to 2.67.

Harris County's population is expected to increase from 4,680,045 in 2018 to 6,434,397 in 2045 with an annual growth rate of approximately 1.2%. In 2018, the total referenced census tracts population of 29,346 approximated 0.6% of the total County population. In 2045, the total projected referenced census population of 94,264 would comprise 1.5% of the total County population.

Drawing 6 shows the projected household population growth for the Region by 2045. The most significant population growth is forecast as high-density residential development along the US 290 corridor, within Census Tracts 5205, 5216, 5217, and 5323. None of these census tracts are immediately adjacent to the Site. Three of those four tracts are partially within one mile of the Site, and the other is more than a mile from the Site. The general lack of large undeveloped tracts in the Area means that significant urban densification, land consolidation, and redevelopment would need to occur for the projected increase in population to occur.

In summary, the subdivision platting information on *Drawing 5* shows that the direction of major development in northwest Harris County is westward and far away from the Site. As shown on *Drawing 6*, the projected population growth within the five-mile

^{*} Census tract 5218 entirely contains the Hawthorn Park RDF.

radius will be concentrated along the US 290 corridor, also away from the Site. Urban infill development is expected within the five-mile radius but will be substantially more commercial and industrial than residential, according to HGAC projections.

Given the proximity to US 290 and completion of Beltway 8 in the early 1990's, the Area has become a regional hub for commercial and industrial development. Further enhancing its hub status is a nearby Union Pacific railroad to the north and Interstate 10 to the south via the Beltway. As the Region becomes more urbanized, more commercial and industrial growth is expected within the Area, especially for inner-city distribution centers that still seek convenient regional access.

PROXIMITY TO RESIDENCES and OTHER USES

As of July 2020, 2,109 single-family homes (permanent or manufactured), 7 duplex houses, 257 mobile homes, and 555 apartments are within one mile of the Site, for a total of 2,928 households. An additional 48 homes are under construction.

The closest residences to the Site are nearer to the existing permit boundary than to the expansion permit boundary. Five older single-family homes are adjacent to the concrete and asphalt recycling plant along the north side of Tanner Road. On the south side of Tanner Road are two single-family homes that face the eastern portion of the Site. There are two newer single-family houses approximately 1,400' from the central-southern boundary of the total permit boundary along Clara Street. Lastly, 19 older single-family homes exist along Mary Jan Road and Triway Lane. These homes are approximately 200-500' south of the far eastern portion of the Site.

A total of 331 commercial and 552 industrial buildings are located within one mile of the Site.

Regarding educational facilities, one public K-12 school is within a mile of the total permit boundary. YES Prep School Northwest is a charter school for 6th, 7th, and 8th grade students, located 1/2 mile east of the Site. There are three colleges within a mile of the total permit boundary. Lonestar College Westway Park Technology Center is 1/2 a mile to the south, Lonestar College Fairbanks Center is 7/10 of a mile to the west on US 290, and Chamberlain College of Nursing is approximately 8/10 of a mile to the south.

COH, Harris County, TxDOT, Metropolitan Transit Authority of Harris County (METRO), and various municipal utility district facilities within the Area include the following:

- CenterPoint Energy Substation directly south of the total permit boundary on Tanner Road
- COH municipal complex east of the Carverdale neighborhood just south of Hempstead Road (approximately 1/2 mile away) including:
 - o Sommermeyer Neighborhood Depository (a solid waste facility)
 - o Sommermeyer Northwest Transfer Station (TCEQ Permit #1135)
 - o Police Department Northwest Substation
 - o Fire Department Number 66
 - Northwest Water Services Center
- COH Fire Department Life Safety Bureau about 6/10 of a mile to the north along West Little York Road
- COH Police Department/Army Corps of Engineers facility about 6/10 of a mile to the north just north of the COH Fire Department Life Safety Bureau

- METRO Park and Ride facility about 7/10 of a mile to the north also located on West Little York Road
- Harris County Household Hazardous Waste Collection Facility on Hahl Road about 9/10 of mile to the northwest located just north of US 290
- TxDOT West Central Harris Area Engineer and Maintenance Facility on Hahl Road about 9/10 of mile to the northwest located just north of US 290
- COH Westway Wastewater Treatment Plant (WWTP) about 6/10 of a mile away to the southeast, northeast of the Westbranch neighborhood
- COH Windfern Road WWTP, 8/10 of a mile to the northeast
- Harcourt Farms WWTP, 4/10 of a mile of mile to the west, at the east terminus of the Brittmoore Mobile Home Park
- Brittmore-Tanner Business Park Water Plant (WP), 9/10 of a mile to the southwest on Tacoma Street
- Jersey Acres WP, 9/10 of a mile to the west on Overlook Drive
- COH Hempstead #2 Lift Station, 6/10 of a mile to the north on Hempstead Road
- COH Water Well Facility, 7/10 of a mile to the south, north of Heatherford Drive
- Harris County Toll Road Authority (HCTRA) Tolling Facility within Beltway 8 right-of-way approximately 3/10 of a mile to the west

Public parks within the Area include the following:

- R.L. and Cora Johnson Park, located 6/10 of a mile to the southeast (a COH park)
- Independence Park, located about 1/4 of a mile to the south, along Clara Street (a Harris County park)
- W.L. Bill Bane Park, located 1-mile northwest (a Harris County park)

The following is a list of the churches located within the Area:

- Carverdale Church of Christ, 1/10 of a mile to the south
- Mountain of Faith Christian Center Church, 3/10 of a mile to the east
- Macedonia Baptist Church, 3/10 of a mile to the south
- First Pentecostal Church of Spring Branch, 3/10 of a mile to the southeast
- Riverdale Baptist Church, 4/10 of a mile to the southeast
- Mission of Yahweh, 4/10 of a mile to the southeast
- Mount Zion Missionary Baptist Church, 4/10 of a mile to the southeast
- Carverdale Community Fellowship, 5/10 of a mile to the southeast
- Holy Temple of Jesus Christ, 5/10 of a mile to the east
- Sobre La Roca Iglesia Cristiana, 6/10 of a mile to the west
- Christian Family Church, 6/10 of a mile to the east
- Templo Nazaret del Cladic, 8/10 of a mile to the northwest
- The Church of Jesus Christ of Latter-day Saints, 9/10 of a mile to the south
- Texas General Assembly of the Church of God, 1 mile to the northeast
- Fairbanks Methodist Church, 1 mile to the east

Two small cemeteries are located within one mile of the Site. One is 3/10 of a mile to the south along Dancy Road next to the Macedonia Missionary Baptist Church. The other is the Fairbanks Cemetery located just west of the Fairbanks Methodist Church, 9/10 of a mile to the west, north of Hempstead Road.

One day care center, the Precious Jewels Childcare Center, is located within the Area. It is within the Carverdale neighborhood, approximately 6/10 of a mile to the southeast.

No historic structures, archeologically significant sites, or sites having exceptional aesthetic quality are located within the Area.

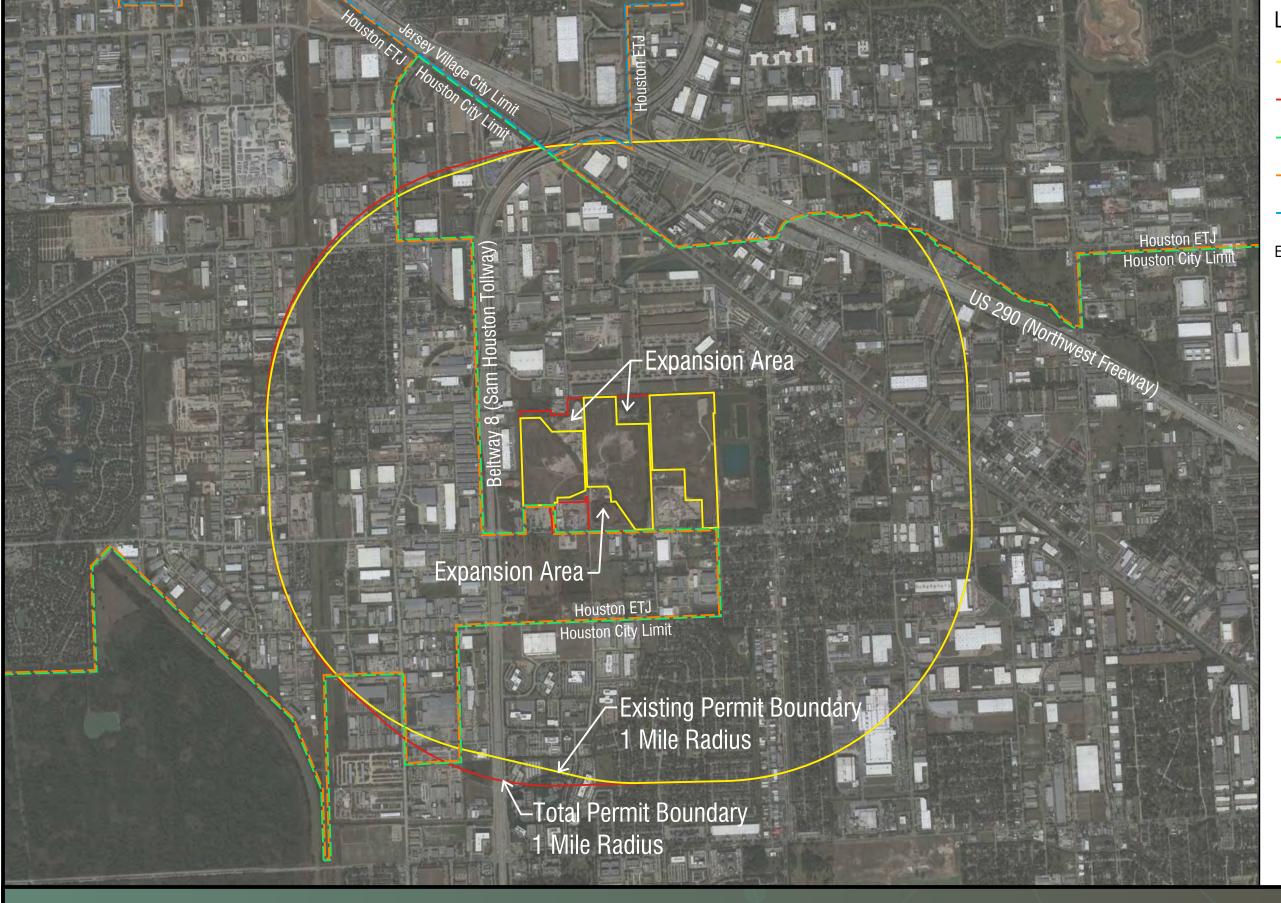
The water well information is located in the "Geology Report, Attachment 4, Section 3.2 of the Permit Amendment Application".

All residences, businesses, schools, government facilities, parks, churches, cemeteries, and the childcare facility as noted above are shown on the Land Use Map, *Drawing 4*.

CONCLUSIONS

Continued use and expansion of the Hawthorn Park RDF represents a compatible land use for the following reasons:

- 1. At 45.6%, nearly half of the land within a mile of the Site is industrial.
- 2. The direction of major development and residential growth in northwest Harris County is further to the west and trending away from the Site.
- 3. Most of the recent growth within the Area has been non-residential (i.e. commercial and industrial), and that trend is expected to continue.
- 4. The consolidation of abandoned street rights-of-way into the Site will allow for more efficient use of the landfill without significantly expanding the total permit boundary and impacting surrounding land use.



Legend:

- Existing Permit Boundary & 1 Mile Offset
- Total Permit Boundary & 1 Mile Offset
- — Houston City Limit
- — Houston ETJ
- — Jersey Village City Limit

ETJ indicates "Extraterritorial Jurisdiction."

Drawing 1 - Expansion Exhibit

Hawthorn Park RDF: Drawing 1 - Expansion Exhibit

August 2020

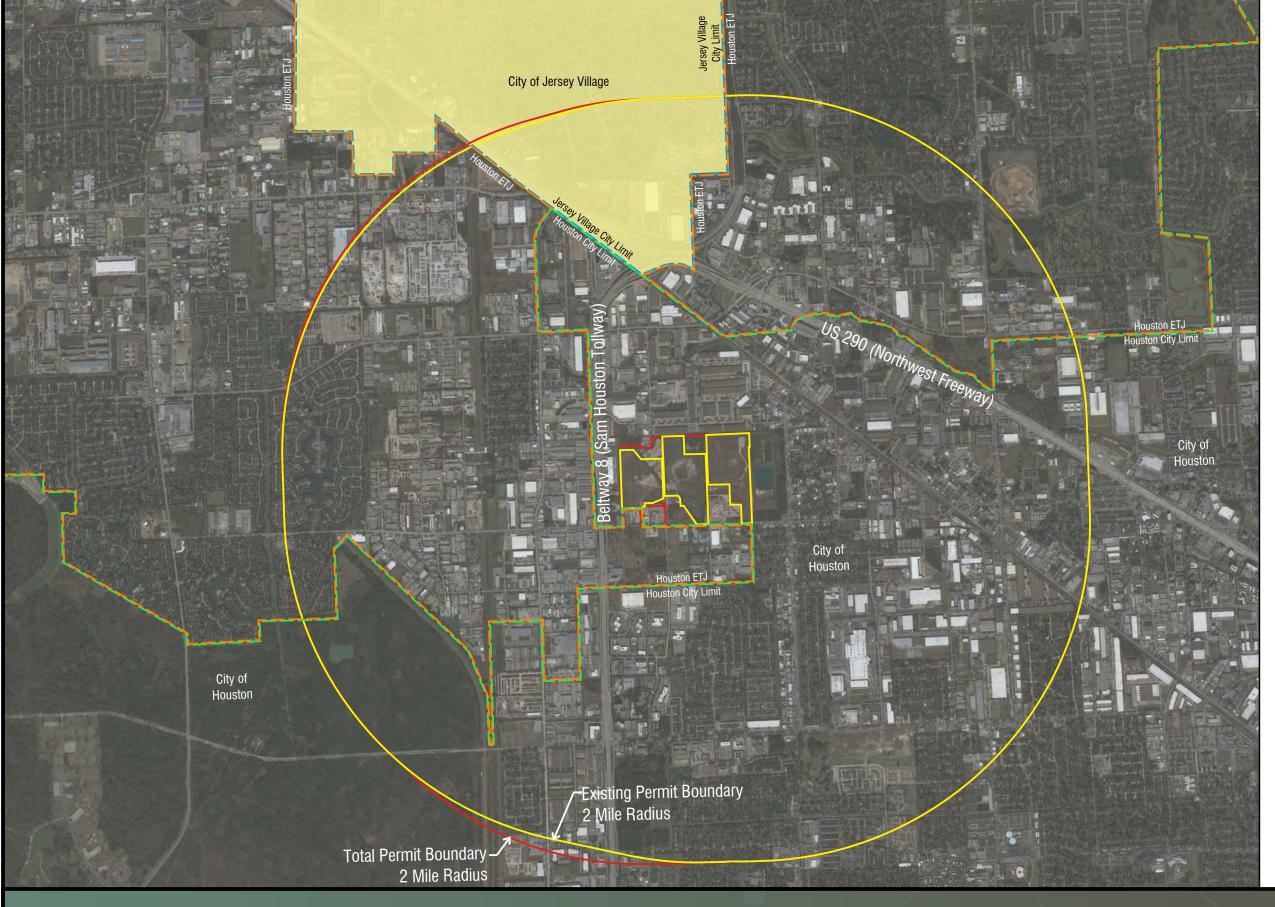
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No warranty or representation of intended use, design or proposed improvements are made herein. All Plans for land or facilities are subject to change without notice.



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Legend:

- Existing Permit Boundary & 2 Mile Offset
- Total Permit Boundary & 2 Mile Offset
- — Houston City Limit
- —— Houston ETJ
- Jersey Village City Limit
- Zoned Areas

The City of Houston and Harris County do not have a comprehensive zoning ordinance.

ETJ indicates "Extraterritorial Jurisdiction."

Drawing 2 - Two Mile Radius with Zoned Areas

Hawthorn Park RDF: Drawing 2 - Two Mile Radius with Zoned Areas

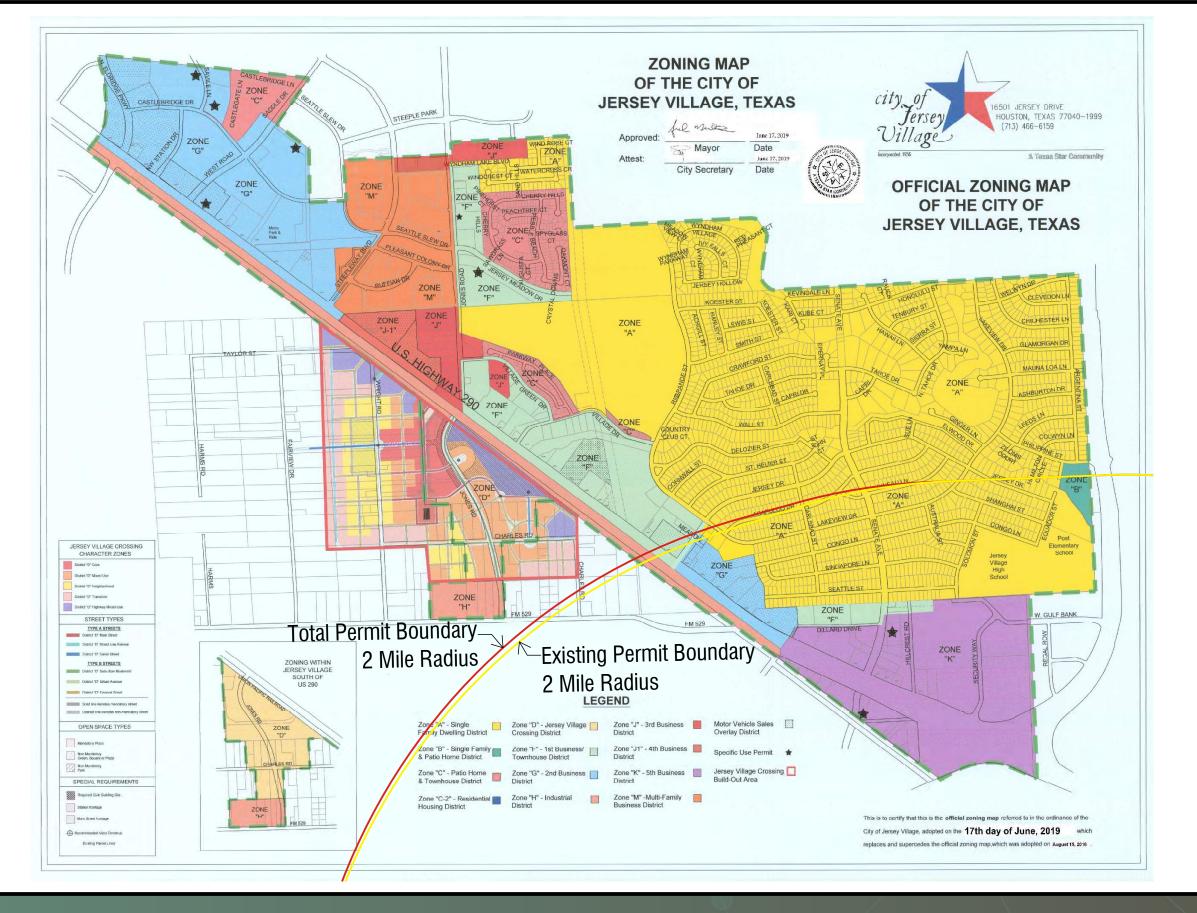
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Legend:

- 2 Mile Offset of Existing Permit Boundary
- 2 Mile Offset of Total Permit Boundary

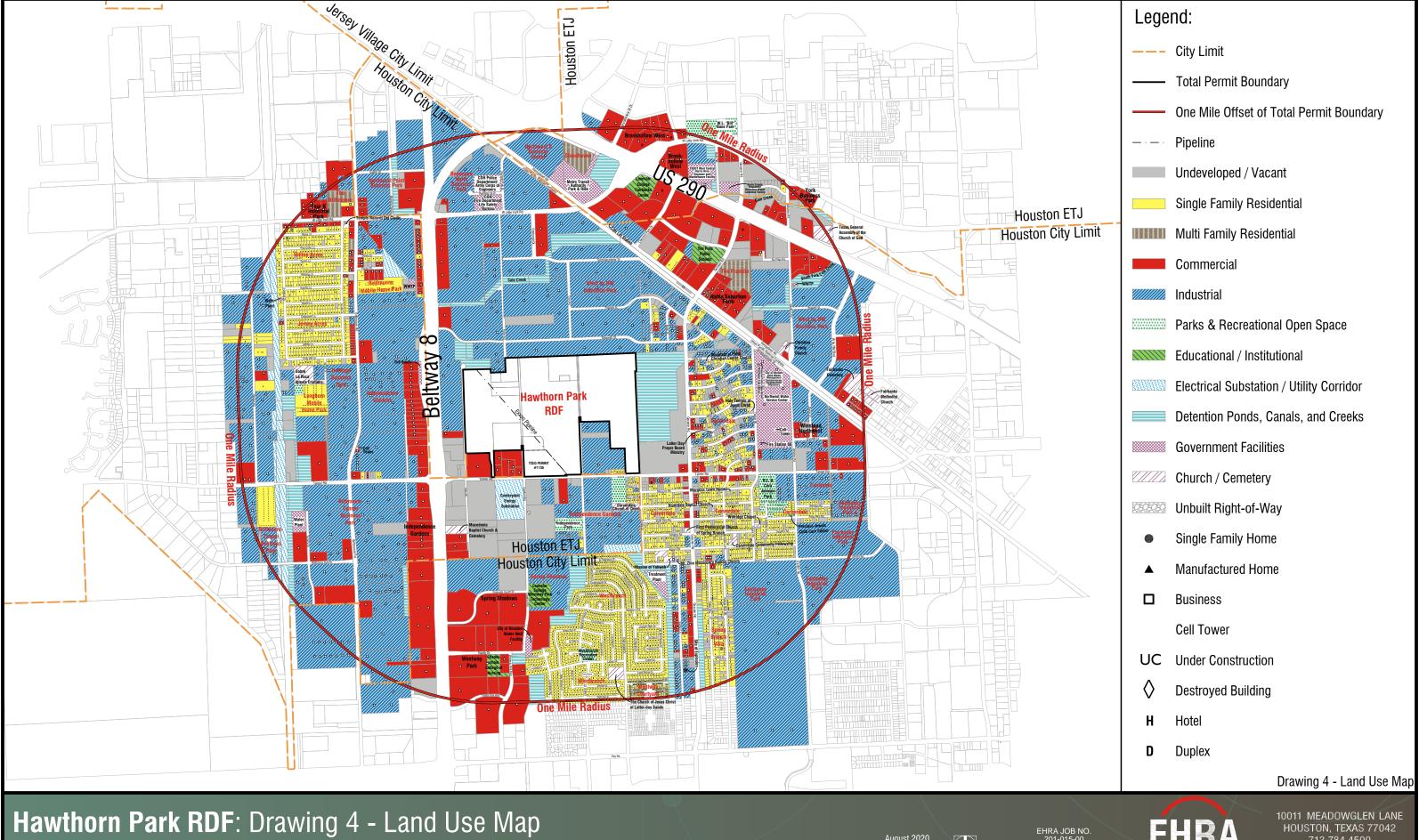
Drawing 3 - 2019 City of Jersey Village Zoning Map

Hawthorn Park RDF: Drawing 3 - 2019 City of Jersey Village Zoning Map













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