



# Former Houston Wood Preserving Works

**COMMUNITY  
INVOLVEMENT PLAN**

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# Introduction

This Community Involvement Plan (CIP) for the Union Pacific Railroad (Union Pacific) Former Houston Wood Preserving Works site (HWPW; the Site) was developed to facilitate communication between Union Pacific and community stakeholders, as well as to encourage community involvement.

The CIP serves as a roadmap for Union Pacific in providing opportunities to share information on the environmental cleanup process for the Site with the public and to receive input during those activities.

The community can also use the CIP to share information with Union Pacific and obtain information about the HWPW project. The CIP is an evolving document and will be updated or revised, as needed, to ensure that opportunities for meaningful public participation continue throughout the remediation and testing process.



Soil cap at former HWPW Site, with pollinator plants.



This CIP contains the following five sections:

**1. Overview**

**2. Project  
Background**

**3. Community  
Involvement  
& Feedback**

**4. Community  
Profile**

**5. Community  
Involvement  
Action Plan**

The attached appendices are designed to serve as a resource guide for both Union Pacific and the community. The main text of the CIP and appendices may be read independently of each other. Acronyms are spelled out upon first reference, and a full list of acronyms and abbreviations is provided in **Appendix 1**. Other appendices include Environmental Protection Agency (EPA) and other federal and state agency contacts, local municipal contacts, where to find additional documents, a glossary of terms, and other relevant project background information. Bolded terms that appear in the CIP may appear in fact sheets or the Proposed Plan and are defined in a glossary in **Appendix 2**.

# 1. Overview

## 1.1 | Goals of the Community Involvement Plan

The CIP outlines Union Pacific’s goals and objectives specific to the Site, which aim for clarity and transparency.

The CIP’s goals include fostering open communication, sharing accurate information about testing and remediation efforts, and providing updates on the progress of the EPA’s Administrative Settlement Agreement and Order on Consent (ASAOC) process and the Texas Commission on Environmental Quality (TCEQ) Resource Conservation and Recovery Act (RCRA) permitting process. To effectively achieve these goals, the CIP establishes the following comprehensive strategies and tactical approaches that are aligned with Union Pacific’s objective:

### Transparent Communication:

Inform and seek feedback from community stakeholders about the environmental cleanup process of the Site, including details regarding the RCRA permit and ASAOC process, and other significant milestones. By providing accurate and accessible information, the plan aims to promote transparency about the Site activities and foster informed consent among stakeholders.

### Build & Maintain Trust:

By establishing, building and maintaining trust with stakeholders invested in the Site, the plan enables opportunities for meaningful engagement and the conversion of stakeholders into project advocates invested in the project’s success. It is also designed to assist the community and other stakeholders to become more informed and involved in the Site cleanup process.

### Develop Reputation as a Valued Community Partner:

The plan seeks to demonstrate Union Pacific’s ongoing commitment to addressing community concerns. Through the communication and engagement activities outlined in this plan, and as illustrated throughout its longstanding ties to the community and the positive impact it has had in the Fifth Ward, Union Pacific strives to be a good neighbor that supports and uplifts the communities it operates within.

Union Pacific will achieve these goals using a variety of tools and activities (described in **Section 5.2**). Not all of the tools and activities may necessarily be implemented. Rather, Union Pacific will periodically review, select, and prioritize which tools and activities to implement based on input from the community and in consideration of project management and community factors.



.....▶ The following section describes the purpose and scope of the CIP, as well as applicable legal authorities.

## 1.2 | Scope of the Community Involvement Plan

This plan, designed as a “living document,” offers options for community involvement and outreach, rather than a prescriptive approach.

The suggested outreach activities and tools in the following pages are flexible in nature and were designed to appeal to multiple audiences. Union Pacific recognizes that not all outreach activities and tools are suited for all groups, and Union Pacific knows that when it comes to community involvement, there is “no one size fits all.” To produce a CIP that is effective, a clear and sensitive profile of the community must be generated through stakeholder interviews and soliciting continuous feedback from the community ([Section 3.0](#)).

Where possible, the CIP lays out an anticipated schedule of remediation and permitting activities for the Site. However, the anticipated schedule is subject to change based on public feedback and regulatory approval of cleanup and permitting activities. Therefore, this CIP will remain a living document that will be reviewed and updated as needed. Specific timeline information on the major cleanup documents, decisions, and activities will be provided to the public through fact sheets, project website updates, social media, and electronic mailing lists.



Soil cap at former HWPW Site. Sidewalk concrete cap along Liberty Road and asphalt cap constructed in 2016.

## 1.3 | Agency Partnerships

Environmental remediation activities at the Site are conducted under the RCRA Industrial/Hazardous Waste Permit and Compliance Plan (post-closure care) administered by TCEQ.

The EPA has authorized the TCEQ to implement the corrective action program under RCRA, provided that the TCEQ's corrective action requirements are at least as stringent as the federal requirements. For RCRA-regulated sites in Texas, corrective action takes place under TCEQ-issued RCRA permits. In this regulatory setting, the EPA plays an oversight role. The Site was issued the initial RCRA post-closure care permit in 1994. The permit, which is required to be renewed every 10 years, was renewed in 2005. Union Pacific submitted the permit renewal application in 2014 and is currently awaiting final approval of the renewal application from the TCEQ.

In addition to the RCRA permit, EPA and Union Pacific voluntarily entered into the ASAOC in February 2023. The ASAOC, which is issued under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), provides for the performance of a removal action including additional environmental assessment and remediation activities at the Site.

EPA has notified the TCEQ of the provisions within the ASAOC. Under the ASAOC, EPA has the lead responsibility for implementing community involvement activities at the Site, including the preparation of a community involvement plan, in accordance with the National Contingency Plan (NCP) and EPA guidance. Union Pacific shall participate in community involvement activities, including participation in (a) the preparation of information regarding the remediation activities for dissemination to the public (including compliance schedules and progress reports), with consideration given to specific needs of the community, including translated materials and mass media and/or Internet notification, and (b) public meetings that may be held or sponsored by EPA to explain activities at, or relating to, the Site.

Overall, the EPA is working closely with Union Pacific and the TCEQ to ensure that entities with shared jurisdictions are kept informed of EPA activities.





## 2. Project Background

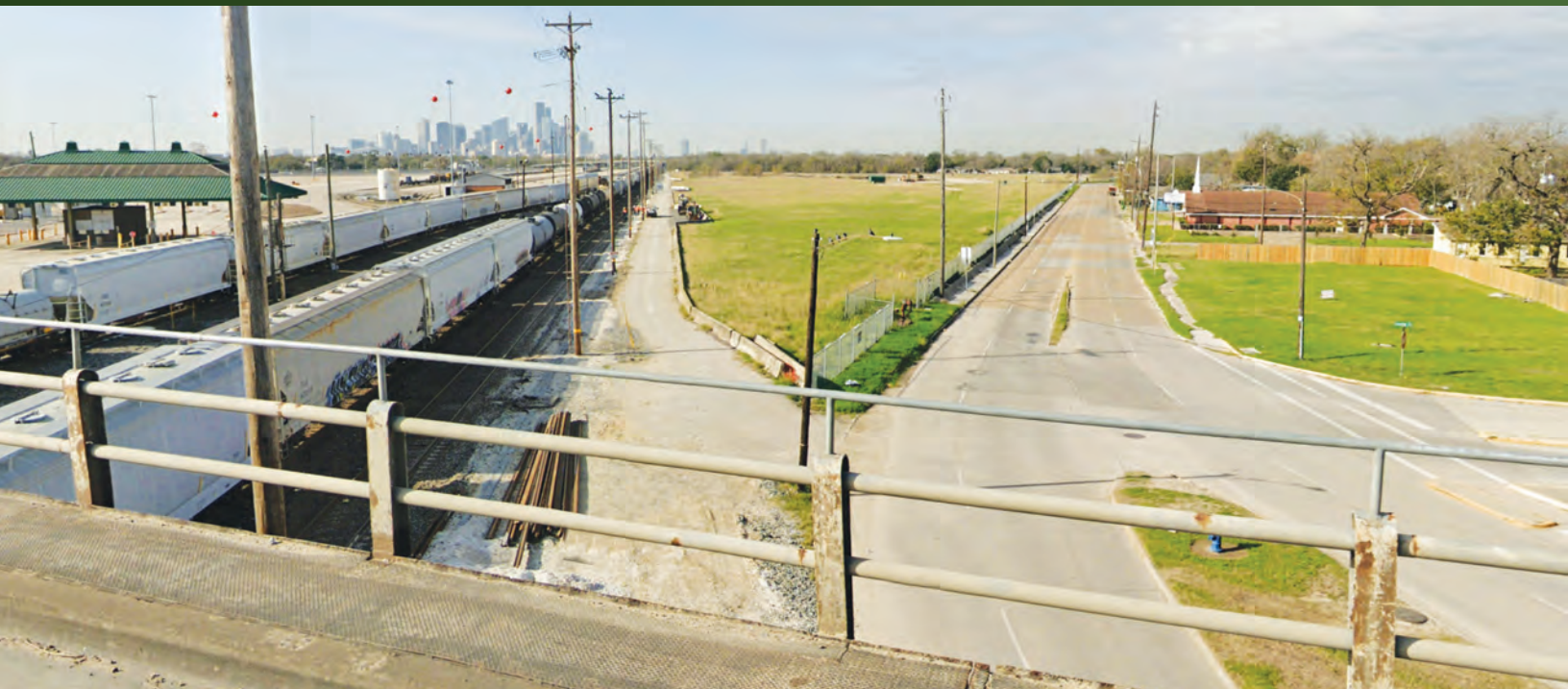
The following section describes the Site's history and provides a summary of activities conducted to date.

### 2.1 | Description of the HWPW Site

#### Physical Characteristics

The Site at 4910 Liberty Road in Houston, Harris County, Texas is approximately 125 acres located within industrial land that includes the former wood treating operations area, mainline rail lines, and the former Englewood Intermodal Yard, which is covered with concrete pavement and gravel. The Englewood Intermodal Yard was used for the transfer of containers from rail cars to truck trailers and vice-versa. Operations at the Englewood Intermodal Yard relocated to a nearby facility. Union Pacific tracks lie between the Site and the former Englewood Intermodal Yard. The Site will remain commercial/industrial for the foreseeable future.

**No active water wells have been identified near the Site.  
The City of Houston provides potable water to the site vicinity,  
and no public water supply wells are within 0.25 mile from the Site.**



Soil cap and rail at former HWPW Site seen from Lockwood Dr. | Google Earth



Soil cap at former HWPW Site. Sidewalk concrete cap along Liberty Road constructed in 2016.

## Land and Resource Use

The former HWPW Site, owned and operated by Southern Pacific Transportation Company, was a wood treatment facility in the Greater Fifth Ward from 1911 – 1984. While operational, the facility treated wooden railroad ties with creosote, which is a commonly used chemical preservative created from wood or coal tar. Over time, creosote and other wood-treating chemicals migrated through the soil to groundwater zones, with some chemicals dissolving into the groundwater and creating groundwater plumes.

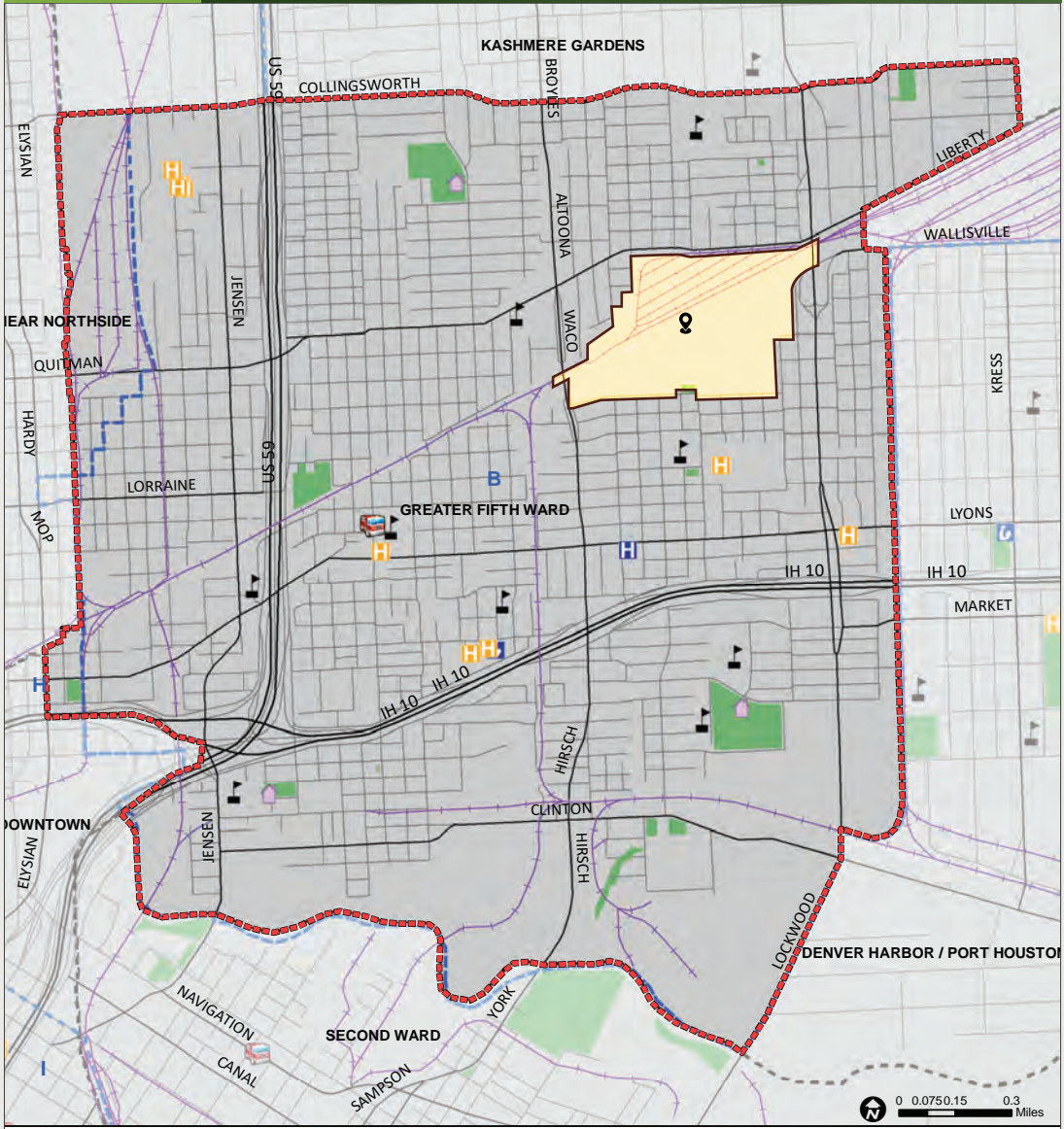
Currently, more than 11,000 tons or 22 million pounds of creosote-impacted soil have been consolidated onsite and an engineered cap was built to prevent exposure. Concrete and asphalt pavement at the neighboring former Englewood Intermodal Yard serves as a physical barrier to prevent exposure to underlying contaminated soil. Current railroad infrastructure located between the former facility and the Englewood Intermodal Yard serves as a cap, preventing exposure to underlying soil. The contaminated soils located between the Site's boundary and Liberty Road were addressed through a combination of soil excavation and concrete sidewalk construction.

A fence was installed to protect trespassers from entering the Site and could be considered a protection for the community. Union Pacific conducts weekly inspections of the container storage area and quarterly inspections of the caps.

For the long-term remedy, Union Pacific seeks approval to install a large underground physical barrier using a bentonite slurry cut-off wall that will be located on the Union Pacific property along Liberty Road. The wall is recommended by EPA as a best practice to contain the groundwater contamination and prevent future migration offsite. It will be approximately 50 feet deep on the east side and approximately 75 feet deep on the north.



**Fig. 1** Public Facilities in the Greater Fifth Ward of the City of Houston



**GREATER FIFTH WARD: PUBLIC FACILITIES**

- |                             |                         |                     |  |
|-----------------------------|-------------------------|---------------------|--|
| Super Neighborhood Boundary | Airports                | Rail Road           | HWPW Site  |
| Community Centers           | Harris County Hospitals | Metro Rail Stations | <p>This map is made available for reference purposes only and should not be substituted for a survey product. The City of Houston will not accept liability of any kind in conjunction with its use.</p> <p><b>PLANNING &amp; DEVELOPMENT DEPARTMENT</b></p> |
| Fire Station                | Private Hospitals       | Metro Rail Line     |  |
| Police Station              | Other Health Facilities | Parks               |  |
| School                      | Library                 | TIRZ                |  |

## 2.2 | Site History .....▶ In the early 20th century, wood treating operations began at the Site.

Creosoting operations at the Site consisted of raw untreated wood being transported and stored in the northwest portion of the Site. Following storage, the raw wood was cropped and sized in the adzing plant. The adzing plant trimmed and squared the ends of each railroad tie prior to treatment.

After sizing, the railroad ties were transported, via rail, to the on-site processing facility for treatment. Untreated ties were placed into one of five large, steel retort cylinders and treated with a drying agent (a process added in the late 1950s) and heated to extract the sap and moisture from the wood.

After the sap and water were removed, the cylinders were flooded with a combination of creosote and extender, and then the cylinders were pressurized for about 24 hours. The creosote and extender were subsequently pumped back into the working tanks for recycling and reuse.

After the ties were removed from the cylinders on carts, they were left to dry and cool in an area just west of the retort cylinders. After the treated ties were dried and cooled, they were stored in the northwest corner and central sections of the HWPW Site.

### 1911

Wood treating operations begin at the Houston Wood Preserving Works site.

### 1979

Southern Pacific Transportation Company (Southern Pacific) built a clay-lined surface impoundment located on the southwest end of the Site to store creosote-containing soil, tank bottoms, and debris from the inactive wastewater lagoon also located on the southwest end of the Site.

### 1983 – 1984

Southern Pacific elected to close the surface impoundment by submitting a Closure Plan to the Texas Department of Water Resources (TDWR, the predecessor agency to the TCEQ). Following approval of the Closure Plan, Southern Pacific removed the waste and contaminated soils from the impoundment, disposed of them offsite, and submitted a Final Report on the Closure Plan to the TDWR in April 1984. The TDWR issued a letter in August 1984 acknowledging the Final Report and withdrawing the hazardous waste permit requirement for the Site.

### 1990 to 1991

Following groundwater monitoring around the solid waste management unit (SWMU) 1, the Texas Water Commission (TWC) (formerly TDWR) in July 1990 requested Southern Pacific to submit a hazardous waste permit application. Southern Pacific submitted the RCRA permit application and groundwater compliance plan for post-closure care in 1991.

### 1993

EPA prepared the RCRA Facility Assessment Report for the Site.

### 1994

The Texas Natural Resource Conservation Commission (TNRCC) (formerly TWC) issued the initial RCRA permit and compliance plan for the Site to Southern Pacific. From 1994 through 1997, Southern Pacific began environmental investigations under the RCRA Facility Investigation (RFI).

### 1997

Union Pacific acquired Southern Pacific and assumed responsibility for cleanup assessment and remediation. Union Pacific conducted investigations in 1997 through 1999.

### 2000

Union Pacific submitted the Affected Property Assessment Report (APAR) – a report that documents the assessment of the impacted areas of the property, the source of contamination, the chemicals of concern (COCs) and possible exposure pathways.

### 2004

Union Pacific submits a revised APAR to the Texas Commission on Environmental Quality (TCEQ).

### 2006 to 2009

Union Pacific conducts additional TCEQ-approved investigation activities.

### 2009

Union Pacific submits an APAR Addendum to the TCEQ with data collected from 2006 through 2009.

### 2010

Union Pacific conducts a recovery pilot program to remove creosote, which is a dense nonaqueous phase liquid (DNAPL).

### 2010

Union Pacific tests wastewater samples for site-related chemicals from a city-owned sanitary sewer line, which runs through the Site to determine whether chemicals of concern were infiltrating the sewer line. Testing results indicated no chemicals of concern.

### 2010

Union Pacific submits the Updated APAR Addendum to the TCEQ with the additional data collected in 2009-2010. Union Pacific submits a Revised Updated APAR Addendum to the TCEQ in March 2011.

### 2011 to 2014

Union Pacific conducts site-wide groundwater sampling events twice per year (typically starting in January and July).

### 2013

Union Pacific proposes to conduct a 24-month DNAPL recovery pilot test, using 12 recovery wells to assess the feasibility of DNAPL recovery.

### 2014

Union Pacific submits the RCRA Permit Renewal Application with Response Action Plan (RAP) to the TCEQ.

### 2014

Union Pacific conducts a community awareness meeting to discuss restrictive covenants regarding groundwater usage at the True Vine Missionary Baptist Church.

### 2014 – present

A creosote monthly/bi-monthly recovery program was implemented to remove creosote from groundwater.

### 2015

Union Pacific submits the revised RCRA Permit Renewal Application with RAP (Revision No. 1) to the TCEQ.

### 2016

Union Pacific conducts TCEQ-approved soil remediation at the Site that was proposed in the RAP. (See [Figure 2](#).) Soil samples collected near residential properties showed contamination levels that were below TCEQ risk-based levels.

### 2016

Union Pacific submits the revised RCRA Permit Renewal Application with RAP (Revision No. 2) to the TCEQ.

### 2017

During an inspection of the concrete and asphalt capped areas in the Englewood Intermodal Yard, a tar-like substance was observed surfacing through the expansion joints and cracks. Union Pacific initiates weekly monitoring and removal activities, as needed.

### 2017

In response to flooding from Hurricane Harvey, Union Pacific conducts a post-storm inspection of the soil cap, which did not appear to have any significant erosion or damage.

### 2017

Union Pacific submits the revised RCRA Permit Renewal Application with RAP (Revision No. 3) to the TCEQ.

### 2018 – present

Union Pacific resumes groundwater monitoring, twice per year (See [Figure 3](#)).

### 2018

Union Pacific excavated test pits to evaluate the tar-like substance that was surfacing through joints and cracks in the concrete and asphalt caps in the Englewood Intermodal Yard to evaluate the best corrective action.

### 2019

Union Pacific initiates the interim remedial action through the construction of the NAPL Collection System in the Englewood Intermodal Yard.

### 2019

The City of Houston sampled the drinking water in the area and found no detected concentrations of chemicals of concern.

### 2019

Union Pacific submits the revised RCRA Permit Renewal Application with the Conceptual RAP (detailing proposed additional investigation activities) (Revision No. 4) to the TCEQ.

### 2020

Union Pacific conducts Vapor Intrusion Assessments. The final report concludes there is no complete vapor intrusion pathway off-site.

### 2020

Union Pacific submits the revised RCRA Permit Renewal Application with RAP (Revision No. 5) to the TCEQ.

### 2020

City of Houston Health Department conducted an independent soil gas sampling study.

### 2020

A combination of water-well surveys and public meetings have identified no groundwater wells for domestic use in the area. The City of Houston Health Department re-tested the drinking water in the area and notified the public that the drinking water is safe.

### 2022

The City of Houston, Harris County, and the Bayou City Initiative filed litigation regarding the RCRA permit renewal.

### 2020

Union Pacific conducts Vapor Intrusion Assessments.

### 2021

Union Pacific submits construction plans for the North By-Pass Project that will be partially conducted at the Site.

### 2021

Union Pacific develops a plan to evaluate a city storm water line to evaluate whether it is a potential exposure pathway. TCEQ provided comments on the work plan in August and Union Pacific submitted a revised work plan in September that TCEQ approved on September 29, 2021.

### 2021

The TCEQ issues a Final Draft Permit to Union Pacific.

### 2021

The Environmental Protection Agency (EPA) issues a letter of inquiry regarding the Site.

### 2021

TCEQ approves Union Pacific's proposed construction plans for the North By-Pass project.

### 2022

Union Pacific joined by the City of Houston, Harris County and Bayou City Initiative, requested additional time before the TCEQ takes further action on the RCRA permit renewal, allowing the parties to make adjustments that are designed to speed up remediation.

### 2022

TCEQ granted a 90-day permit extension, allowing continued collaboration on an extensive testing plan to guide future remediation for the former HWPW Site.

### 2022

Union Pacific, the City of Houston, Harris County and Bayou City Initiative submitted a joint status report to the TCEQ outlining discussions for additional dioxin and vapor intrusion testing.

### 2023:

In February, EPA approves Administrative Settlement Agreement and Order on Consent (ASAOC) for removal action Site evaluation.

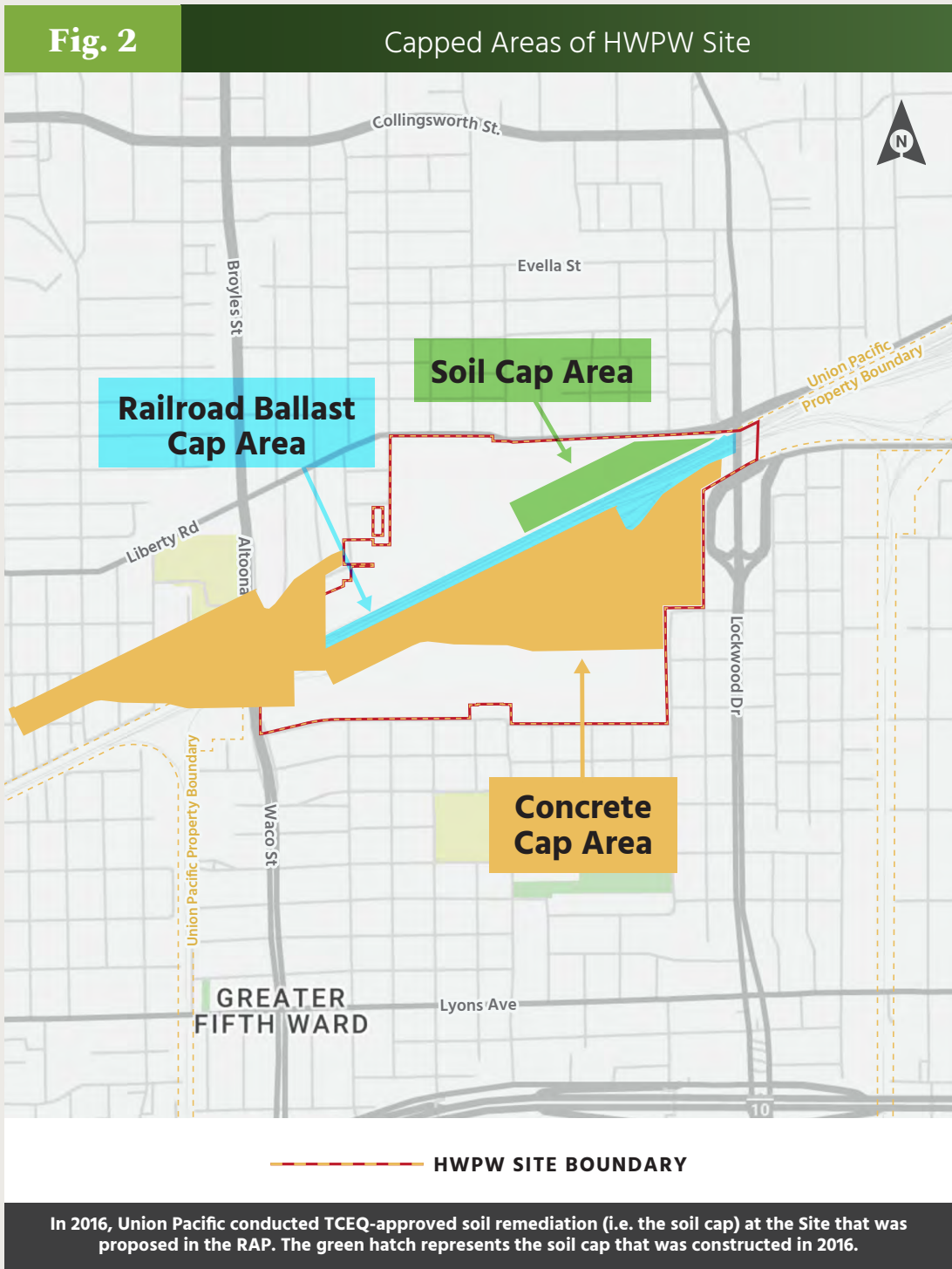
### 2023

In December, Union Pacific begins vapor testing in the neighborhood, as part of the EPA ASAOC order.

### 2024

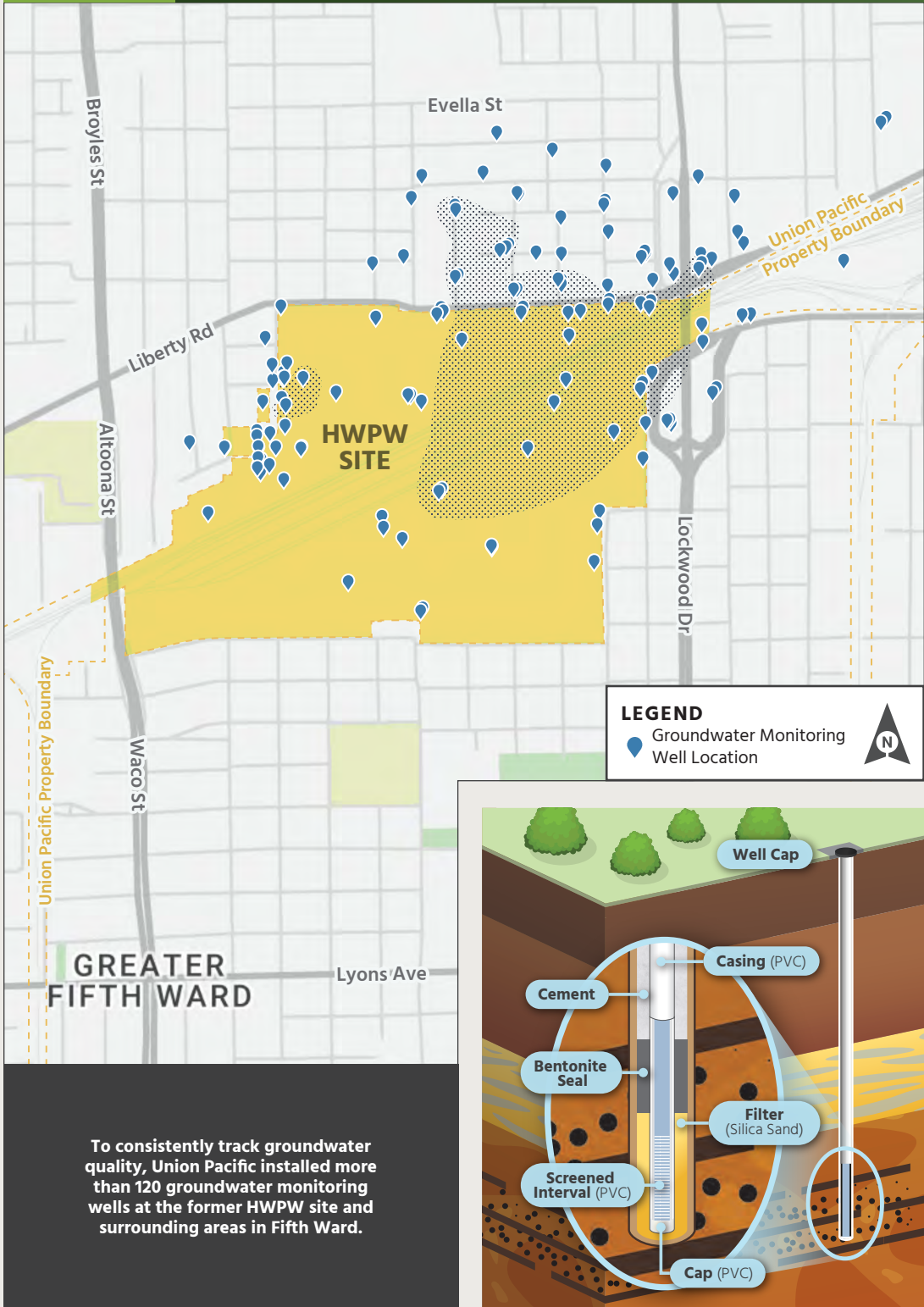
First phase of vapor testing is completed in February and soil testing begins in May.





**Fig. 3**

HWPW Site Response Action: Groundwater



To consistently track groundwater quality, Union Pacific installed more than 120 groundwater monitoring wells at the former HWPW site and surrounding areas in Fifth Ward.

## 3. Community Involvement & Feedback

The following section describes the community involvement at the Site.

### 3.1 | Ongoing Community Involvement & Outreach



Community involvement, remediation, and risk assessment can occur at any time in the RCRA permitting process.

The community involvement approach should be flexible and responsive to changing site conditions and to the needs of the surrounding community. Union Pacific will utilize several community involvement tools and activities (refer to Section 5) to notify the community of the remediation and testing progress and to relay important milestones and participation opportunities to the community.

Union Pacific will consult with the community to share the details of the cleanup activities and to explain how the work may impact residents. Aspects of the remedial cleanup work that are expected to be of interest to the community may include: trucking and transportation routes, work hours, environmental monitoring of air, soil and water quality, and potential job opportunities. Union Pacific remains committed to keeping the community informed and to providing opportunities for community members to become involved.



## 3.2 | Steps in the RCRA Permitting Process

The environmental assessment and remediation of the Site is governed by the Resource Conservation and Recovery Act (RCRA) permitting process, requiring renewal every 10 years. **Figure 4** describes the steps in the RCRA permitting process.

- **1994:**  
The TCEQ issued the initial RCRA Permit and Compliance Plan for the Site
- **2005:**  
The RCRA Permit is renewed
- **2014:**  
Renewal of the RCRA Permit process begins with the filing of the RCRA Permit Renewal Application with a Response Action Plan (RAP)
- **2021:**  
TCEQ issues a Final Draft Permit (FDP)
- **2021 - 2022:**  
TCEQ held public meetings on the FDP



## 3.3 | Community Involvement in the CERCLA Process

There are several specific community involvement activities that are legally mandated for the management of the Site under the Resource Conservation and Recovery Act (RCRA), and for the management of the off-site portion under the ASAOC.

These activities take place during specific points throughout the investigation and remediation phases, so that the community stays informed of project activities and can participate fully in the process, if they so choose.

As dictated by the CERCLA process, reports are available for public viewing at the Tuttle Library (702 Kress St, Houston, TX 77020) and on our website at [HoustonWoodPreservingWorks.com](http://HoustonWoodPreservingWorks.com). A brief summary of the activities conducted at the Site is presented to the right:

**Fig. 5**

CERCLA Community Involvement Process



## 3.4 | Previous Community Outreach

### 3.4.1 Public Involvement at the HWPW Site

Union Pacific’s filing of an Affected Property Assessment Report in 2000 spurred community involvement, especially among residents of the Greater Fifth Ward.

**The Site History Timeline (p. 12-13)**, provides a glimpse of the nature of past community involvement with Union Pacific and TCEQ at the Site. The public has also been involved in addressing environmental issues at a number of other area sites in proximity of the Houston Ship Channel. This CIP does not attempt to capture the complete history of community involvement at each site. In 2003 and 2004, Union Pacific and TCEQ officials met with residents at the Greater True Vine Missionary Baptist Church to inform the public about the EPA’s RCRA permit process, site remediation, and to answer any questions. This community input helped Union Pacific draft a revised Affected Property Assessment Report in 2004.

- **In 2014**, Union Pacific held a community awareness meeting, again at the True Vine Missionary Baptist Church, to discuss the restrictive covenants regarding groundwater usage.
- **In 2016**, Union Pacific attended a public meeting with Fifth Ward Super Neighborhood Council.
- **Between 2020 and 2021**, Union Pacific met with IMPACT Fifth Ward and conducted various engagements with Harris

County and the City of Houston to discuss public health concerns related to the Site and gather more insight about the community’s needs.

- **In 2023**, Union Pacific participated in two EPA-led public meetings. The first meeting was at the Carl Walker Jr. Multi-Purpose Center on April 20, the second was at the Fifth Ward Multi-Service Center on October 24.
- **In 2023**, the project website was updated to be more user friendly and accessible and created an 800# and email specific to the HWPW Site for residents to contact Union Pacific directly.
- **In 2024**, Union Pacific participated in an EPA-led public meeting at the Fifth Ward Multi-Service Center on April 30 to provide updates. A follow-up EPA-led Public Meeting was held on March 7 at the Carl Walker Jr. Multi-Purpose Center in Fifth Ward.
- **In 2024**, Union Pacific created HWPW-specific social channels on X, Facebook, and YouTube

Throughout the RCRA process, Union Pacific sent letters to property owners in the Greater Fifth Ward area to provide formal notification of available data that had been collected, the status of Site activities, and information on how to contact the appropriate TCEQ or Union Pacific representatives with any questions or concerns about the Site.



True Vine Missionary Baptist Church | Google Street View

This CIP does not attempt to capture the complete history of community involvement at each site.


Click here to visit the HWPW website to learn more.






## 3.5 | Community and Stakeholder Interviews


To produce a CIP that truly works for the affected community, a clear and sensitive profile of the community must be generated by using community interviews to speak with members of the public and solicit feedback from the community.




An in-depth examination is conducted into the neighborhood's history, population makeup, physical infrastructure, cultural assets, and how the area has transformed over time. This comprehensive research lays the groundwork for further investigating and understanding the current state of the community.



Union Pacific then works to identify the community's influential leaders, activists, and local organizations engaged in addressing neighborhood concerns. Through networking with these contacts, a list of potential candidates is assembled to serve as the core for subsequent community interviews.



Union Pacific will reach out to the identified interview candidates and conduct a series of inquiries. These dialogues will aim to elicit perspectives from the interviewees, helping to delineate the community's key issues and concerns. Furthermore, this process will guide Union Pacific toward optimal means of communication and engagement with the impacted public.



The responses and input gathered during the interviews are analyzed to identify recurring themes and issues that emerge across the information provided by community members (a process known as a "Common Threads Analysis"). These common threads will then help guide Union Pacific in developing preferred activities and communication approaches tailored to the community's expressed needs.



These activities and findings are detailed in the CIP.



The following discussion describes the community interviews conducted by Union Pacific to generate a community profile surrounding the Site.

### 3.5.1 Involvement as a Local Process

Union Pacific contacted approximately nine community stakeholders. Union Pacific and their consultant team contacted these stakeholders via email and phone, requesting interviews to represent a broad spectrum of the community from a diverse cross-section of the community across various categories. Those contacted included local residents, organizations, activists, groups working with immigrants, elected officials, and cultural, historic and civic associations. To date, that group of stakeholders has participated in interviews ranging from 45 minutes to one hour in duration, depending on the interviewees' interests, concerns, activities, and level of input provided.

The findings listed in the sections below represent the feelings, opinions, and interests of those who participated in the interviews; enumerate "common threads" expressed during the interviews; and present specific suggestions, needs, and concerns that came up during the interview process.

## 3.5.2 Key Community Concerns

The insights gathered from the stakeholder interviews provide valuable input for shaping communication strategies and addressing community concerns regarding the former Houston Wood Preserving Works (HWPW) site. The key themes include a need for transparency, increased community involvement, addressing environmental and health concerns, and utilizing diverse communication methods to reach different segments of the community.

Union Pacific's active engagement, partnership with local entities, and transparent communication will be critical in building trust and fostering a positive relationship with the community.

The stakeholder interviews revealed several key concerns from the community regarding the Site:

### Transparency & Honesty

Many interviewees emphasized the importance of honesty from community leaders and Union Pacific. There were concerns about conflicting information regarding the safety of the Site and its impact on the community. Clear and truthful communication was seen as crucial in alleviating community anxiety.

### Community Involvement in Planning

Stakeholders expressed a desire for increased community involvement in the planning and development of the HWPW Site. They sought information about what was deemed safe or dangerous and wanted a say in how Union Pacific could positively contribute to the neighborhood.

### Environmental & Health Concerns

Residents were worried about potential environmental hazards, particularly air and water quality, and the impacts on residents' health, especially concerning asthma rates in the community. There were also concerns about pollutants affecting vulnerable populations, such as children and seniors.

### Communication about Site History

There was a lack of awareness about the history of the HWPW Site. Some interviewees were not familiar with the past use of the Site, and there was a call for comprehensive and accessible information about its history and any associated health risks.

### Community Partnership

Interviewees suggested that Union Pacific should collaborate with churches, schools, and senior centers to reach out to the community, creating opportunities to distribute important information and materials. Additionally, they recommended that Union Pacific organize or sponsor community events, such as the annual Christmas in the Nickel celebration.

### Economic Development & Perception

Residents expressed the belief that enhancing economic development near the Site could be achieved through increased landscaping, specifically emphasizing the planting of trees to enhance the area's aesthetics and conceal unattractive elements such as gates and railways.

### Community Access to Information

There was a suggestion to distribute project fact sheets through various community hubs, including local governmental offices, schools, libraries, and businesses like barbershops, beauty and nail salons, and restaurants.



### 3.5.3 Key Communication Preferences

Understanding the communication preferences of the community is essential for fostering effective dialogue between Union Pacific and the public. The key communication preferences identified during the interviews include:

#### Electronic Communication

Stakeholders strongly supported electronic communication methods such as email, Internet, and social media. However, it was emphasized that a variety of platforms should be considered to accommodate different preferences.

#### Traditional Media

Traditional media outlets, including newspapers, both local and online, were mentioned as important sources of information. North Forest News was included as a trusted source that is available in community centers, barbershops, beauty shops, nail salons, and restaurants.

#### Public Meetings

Stakeholders suggested that a mix of virtual and in-person public meetings would offer multiple opportunities to establish a strong presence and connect with the community on a personal level. They also emphasized the importance of relatable speakers.

#### Personal Outreach

Stakeholders stressed the significance of personal outreach, highlighting the value of direct interaction between Union Pacific representatives and residents. Suggestions included community events, schools, churches, businesses, and restaurants.

#### Accessible Meeting Locations

Stakeholders advised that public meetings should be held in easily accessible locations within the community, such as the multipurpose center. The importance of locations reachable by walking or public transportation was emphasized.

# 4. Community Profile

The following section describes the historical and current physical, social, and economic conditions of the City of Houston and the community surrounding the Site.

## 4.1 | Historical Development

The Greater Fifth Ward has its origins on the north bank of Buffalo Bayou across from the original twin site for Houston. The area that would become the Fifth Ward was sparsely inhabited before the Civil War. After the Civil War, it was settled by free former slaves and became known as the Fifth Ward in 1866. At that time, half of the population was African American and half European American. Mount Vernon United Methodist Church, founded in 1865 by former slave Rev. Toby Gregg, is the oldest institution in the Fifth Ward. In the 1880s the Fifth Ward economically flourished following the construction of repair shops for the newly built Southern Pacific Railroad, but growth was stunted by two devastating fires in 1891 and 1912.

As time passed, Fifth Ward's population became majority African American. Black-owned businesses, such as pharmacies, theaters, barber shops, printing plants, and night clubs began to flourish in the 1920s. Many working-class African Americans worked for the Southern Pacific Railroad or at the Houston Ship Channel. In the 1990s and 2000s, the Fifth Ward experienced greater housing and commercial growth through the work of the Fifth Ward Community Redevelopment Corporation.

**Fig. 6**

Houston Metro Timeline

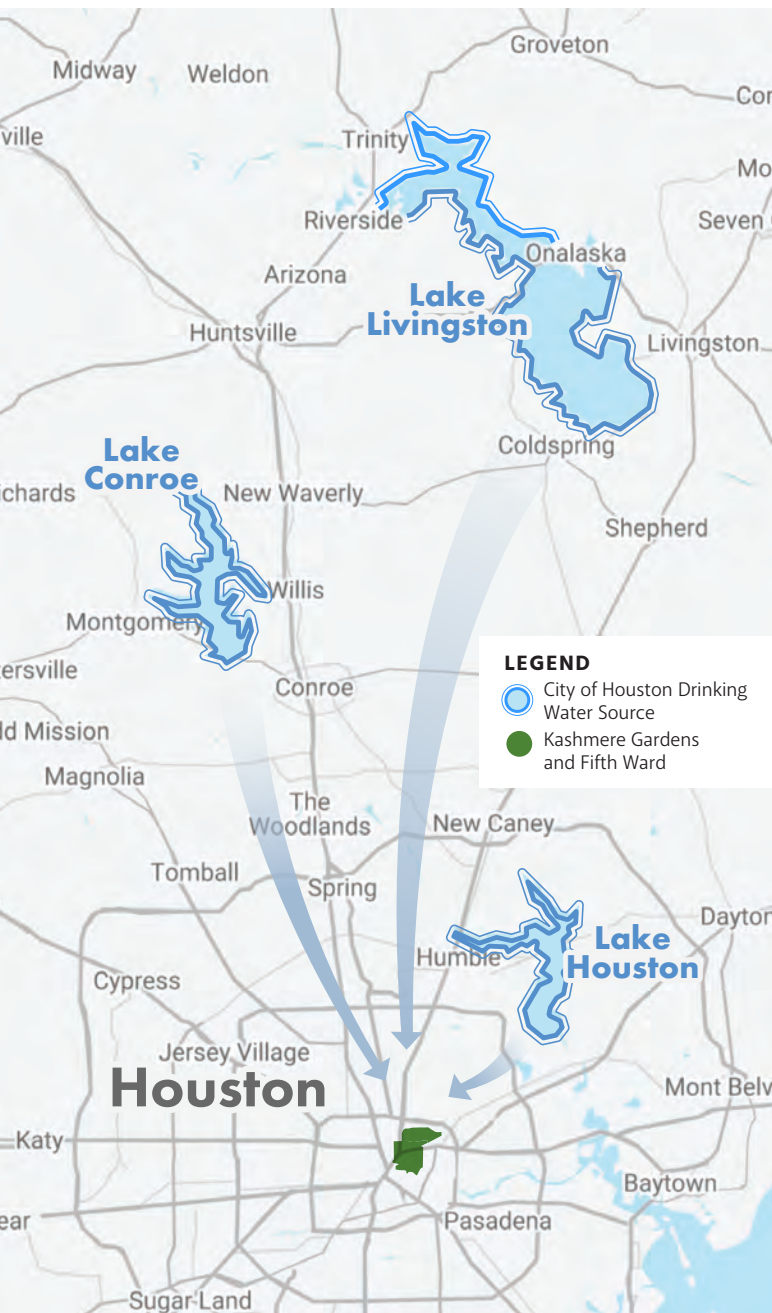




Information presented in this section was retrieved from the United States Census Bureau, geographical information system databases, and county and municipal websites, among other sources.

Some topics are presented at a city-specific level of detail while other topics, such as population and demographics, are discussed in finer detail.

## 4.2 | Land Use and Infrastructure



When the City of Houston was founded, its founders divided it into political/geographic districts called “wards.” The ward system was abolished in the 1900s and was the precursor to today’s city council districts. Though the wards no longer exist as legal entities, they still represent cultural, historic, and geographic significance for the City of Houston. Today, Houston is divided into 88 super neighborhoods, and residents are encouraged to work together to identify, plan and set priorities to address the concerns of the community, including safe and reliable access to drinking water, sewage, power, and more.

States may exercise primary enforcement responsibility for drinking water supply programs if certain conditions are met (i.e., the state has adopted drinking water regulations that are no less stringent than the federal regulations, and it has adopted and is implementing adequate procedures for the enforcement of the state regulations). In the State of Texas, the Texas Water Development Board and the TCEQ monitor water systems. Drinking water in the City of Houston is supplied by Houston Public Works.

The Houston Public Works is also responsible for the collection and delivery of sewage generated in the City of Houston to the designated sewage treatment facilities, and the collection and handling of stormwater and combined sewage.

The regional electric utility company that serves the City of Houston is CenterPoint Energy. Houston Public Works is responsible for the maintenance, operation, and repair of all the City’s infrastructure systems.

As of May 2024, there are 10 parks, three community centers, and one library located in the Greater Fifth Ward.

## 4.3 | Population and Demographics

Data from the City of Houston and the Greater Fifth Ward and the surrounding region were used to create the community profile for the Site.

Data was obtained from the 2015-2019 American Community Survey (ACS) (refer to **Table 1** for summary statistics).

The ACS provides cross-sectional data on social, economic, demographic, and housing characteristics of the United States population at various geographic levels (nation, region, state, congressional district, and census tract). In general, ACS estimates are period estimates that describe the average characteristics of population and housing over a period of data collection. The 2015-2019 ACS five-year estimates represent the period from January 1, 2015, through December 31, 2019. Multiyear estimates are not specific to any particular year within the period, only what the average value is over the full period.

### 4.3.1 Population

The City of Houston is located within Harris County. According to ACS estimates, the population for the City of Houston was approximately 2,310,432 based on ACS five-year estimates for the period of 2015-2019. The population for the Greater Fifth Ward during that same time was approximately 19,391.

The Site is in the in the Greater Fifth Ward neighborhood of Houston. The Greater Fifth Ward is a neighborhood of approximately 20,000 residents and is located just northeast of downtown Houston.

**Table 1**

Greater Fifth Ward and Houston's Population and Demographics Summary Statistics (as of 2019)

	Greater Fifth Ward	City Of Houston
Total Population	19,391	2,310,432
Persons per sq. mile	3,887	4,443
<b>Age of Population</b>		
Under 5 years	7%	8%
5 – 17 years	18%	17%
18 – 64 years	64%	65%
65 and over	11%	10%
<b>Ethnicity</b>		
Non-Hispanic Whites	4%	24%
Non-Hispanic Blacks	43%	22%
Hispanics	51%	45%
Non-Hispanic Asians	1%	7%
Non-Hispanic Others	1%	2%
<b>Income</b>		
Under \$25,000	44%	24%
\$25,000 to \$49,999	29%	24%
\$50,000 to \$99,999	19%	27%
Over \$100,000	8%	25%
<b>Median Household Income</b>	<b>\$27,668</b>	<b>\$52,338</b>
<b>Educational Status</b>		
No Diploma	32%	21%
High School Diploma	34%	23%
Some College	22%	23%
Bachelor's or Higher	12%	33%
<b>Housing and Households</b>		
Total housing units	8,376	968,704
Occupied	84%	89%
Vacant	16%	11%
Total households	7,060	858,374
Family households	4,048	521,891
Median Housing Value	\$90,165	\$171,800





Community mural in Fifth Ward neighborhood | 2C2K Photography, CC by 2.0

### 4.3.2 Household Income

Median income is the value that divides the income distribution of a population into two equal groups, half having income above that median value and half having income below that median value. The median household income of residents in the City of Houston was \$52,338 based on ACS five-year estimates for the period of 2015-2019. In comparison, the median household income for residents of the Greater Fifth Ward during that same period was \$27,668.

### 4.3.3 Race & Ethnicity

Within the City of Houston, 22 percent of residents self-identified as Black or African American; 45 percent self-identified as Hispanic; 24 percent self-identified as white; 7 percent self-identified as Asian; and 2 percent self-identified as Other. Within the Greater Fifth Ward, 43 percent of residents self-identified as Black or African American; 51 percent self-identified as Hispanic; 4 percent self-identified as white; 1% self-identified as Asian; and 1% self-identified as Other. Refer to **Table 1** for summary statistics of the surrounding community.

The U.S. Office of Management and Budget (OMB) defines "Hispanic or Latino" as a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race. The United States Census Bureau defines "Hispanic origin" as "the heritage, nationality, lineage, or country of birth of the person or the person's parents or ancestors before arriving in the United States." Since Hispanic or Latino can be of any race, the United States Census Bureau adopted an approach taken by the Department of Health, Education, and Welfare, Office of Education that clarifies the "White" and "Black" categories with the definition "not of Hispanic origin."

Tuffly Park Community Center | Google Street View





## 4.3.4 Environmental Justice

On February 11, 1994, President Clinton issued Executive Order 12898. This order directs agencies to address environmental and human health conditions in minority and low-income communities to avoid the disproportionate placement of any adverse effects from federal policies and actions on these populations. In January 2021, President Biden's Executive Order 14008 – Tackling the Climate Crisis at Home and Abroad announced Justice40, which mandates that at least 40% of the benefits of certain federal programs must flow to disadvantaged communities.

EPA defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Conditions giving rise to environmental justice concerns are specific to individual communities and their histories.

Environmental justice considerations are determined by comparing demographic and economic characteristics (minority population composition and poverty rates) within specific geographic areas to the same characteristics in the surrounding region. Typically, census data are used to identify communities that are disproportionately either young or elderly, low-income, and whose residents are more likely than residents of surrounding areas to lack a high school education.

[Click here to learn more about EPA's EJSCREEN.](#)



To further enhance clear understanding of communities affected by environmental justice issues, EPA uses EJSCREEN. EJSCREEN is an environmental justice mapping and screening tool. It

uses environmental indicators of a community to show potential exposures and demographic factors to show potential susceptibility.

EPA's EJSCREEN tool was used to conduct an environmental justice screening for the communities in proximity of HWPW. For this Community Involvement Plan, Union Pacific used this tool to assess a one-mile radius around 4190 Liberty Rd. with the purpose of identifying areas within that might require additional outreach efforts to address existing potential environmental justice impacts.

The EJSCREEN report can be found in [Appendix 6](#). It compares the relevant statistics for the chosen area with those for the state of Texas, and the nation overall. EPA has determined that all municipalities have communities with environmental justice concerns.



### Environmental Indicators

Indicators of environmental justice concern that are elevated in comparison to national data are poor air quality, cancer risk, traffic density, lead paint prevalence, proximity to sites with chemical management plans and to hazardous waste facilities, and occurrence of wastewater discharges. Particularly elevated environmental indicators were found in the Site and the surrounding area.



### Demographic Indicators

The demographic index and statistical averages for people of color, low-income residents, population with less than high school education, levels of linguistic isolation, and population with ages over 64 or under 5 years of age, which are indicators of environmental justice concern, were elevated in the Site and the surrounding area in comparison to national data.

## 5. Community Involvement Action Plan



Inspecting a  
groundwater  
monitoring well.

Union Pacific is committed to building and maintaining trust with the community and impacted stakeholders, maintaining transparent communication, and being responsive to community questions and concerns about the HWPW project.

The following section discusses specific community outreach tools and activities that Union Pacific has and will continue to implement. Not all tools listed will necessarily be used at the Site; outreach method and activities will be tailored to the specific needs and requests of the community affected by remediation and interested in the project.

## 5.1 | Communication Goals

Union Pacific is committed to providing opportunities for public participation so that residents living close to the Site have a voice and say in what happens in their community. In accordance with this goal, EPA has established the following four major goals to guide the community involvement and outreach process:



### Be Appropriate:

Being mindful of the fact that one size does not fit all, use the most appropriate communication methods and tools for the specific community involved.



### Be Understandable:

Always use clear and consistent language when communicating with the public. Community materials will be translated into the prominent languages of the community (e.g., Spanish). Respect and consider community input.



### Be Responsive:

Respond to community questions and concerns, encouraging feedback and input throughout the remediation and testing process. Get answers and information to the community in as timely a manner as possible.



### Be Accurate:

Provide the public with accurate, timely, and understandable information or provide access to the information needed to understand the project. When new information is available, share it with the community using the most appropriate and timely methods.



**To meet these goals, Union Pacific will reach out to and seek to involve a broad spectrum of the public such as:**

- Community members
- Interested community organizations (including groups that specialize in addressing community needs)
- Environmental organizations
- Businesses and economic development groups
- Civic associations
- Local chambers of commerce
- Elected officials
- Educational institutions
- Recreational and sports organizations
- Religious institutions
- Local, state, and federal agencies
- Local media

Union Pacific will seek to partner with local officials, community organizations, neighborhood schools, and faith-based organizations to assist in community outreach. These additional “community connectors” provide one more avenue of communication; assisting in the effort to ensure that all members of the community have information about the Site and the remediation and testing process.


Union Pacific will also coordinate with and brief local officials, keeping them informed of major project milestones and providing opportunities for input into decision-making.



## 5.2 | Community Involvement Toolbox

The Toolbox lists key tools that Union Pacific may use to communicate with stakeholders. Union Pacific will use these tools to keep the public informed, to maintain awareness of community concerns regarding local issues that may affect the project activities, to respond to questions or concerns from the community, and to encourage public participation in the decision-making process. The following sections discuss these tools and their potential outreach application.

**Table 2** lists tools in alphabetical order, with no preference or priority.

Table 2		Community Involvement Toolbox 	
<b>Community Advisory Group</b>	EPA led initiative. Receive community input on the remediation and testing process.	<b>Newsletter (Electronic)</b>	Keep the public informed on project status.
<b>Community Events</b>	Attend community events such as fairs, festivals, and cultural festivities to have an ongoing community presence, distribute information, and answer questions.	<b>Project Roadmap</b>	Communicate to the community on major project activities completed and upcoming events.
<b>Elected Official and Agency Stakeholder Engagement</b>	Coordinate with local government and other state and federal agencies to keep them informed about project activities and schedule briefing meetings as needed to discuss the progress of remediation.	<b>Project Website</b>	Post relevant project documents to the website, including new fact sheets, final technical documents, and meeting announcements, etc.
<b>Fact Sheets</b>	Produce fact sheets throughout the life of the project to educate the public and keep them informed, including decision-making processes. Dissemination to the public through web postings, social media, printed materials, and at public forums.	<b>Public Comment Period</b>	Solicit public comments at key milestones, when appropriate, and as required by law.
<b>Field Notifications and Health and Safety Notifications</b>	Keep the community informed of project field activities and maintain public safety via posted advisories, restrictions, and explanatory signs. Dissemination to the public through public meetings, local businesses and organizations, and other community gathering locations.	<b>Public Input</b>	Accept informal public input throughout the remediation process.
<b>Information Repositories</b>	Update information repositories with copies (either electronic or paper) of major Site documents, fact sheets, and other relevant items as they become available.	<b>Public Meetings</b>	EPA will announce public meetings via a variety of methods such as: newspapers, the project website, town websites, and the email list. Union Pacific will support these meetings by attending, distributing materials, demonstrating visual aids, and answering questions.
<b>Local Stakeholder Interviews</b>	Elicit feedback from community organizations and leaders through a series of questions to help define the issues and concerns of the community and identify the best means of communication and dialogue with the affected public.	<b>Public Notices</b>	EPA will announce public comment periods and public meetings via formal public notices in local publications, via the project website, and through dissemination to local businesses and organizations, and other community gathering locations.
<b>Mailing List Updates and Maintenance</b>	Continue to maintain an email group list to quickly provide the public with timely information on project developments and news.	<b>School/Education Outreach</b>	Provide project information to local schools and academic institutions and work with existing educational programs to “piggyback” project information and identify additional opportunities for environmental education.
<b>Maps and Visual Aids</b>	Include maps, photographs, and other visual aids in documents and fact sheets, at public sessions, and on the website.	<b>Social Media</b>	Post public announcements, meeting reminders, and other relevant information to the HWPW project social media accounts, including X, formerly Twitter, and Facebook.
<b>Media Notifications/Media Events</b>	Provide updates and information to local newspapers, radio, and television outlets.	<b>Technical Assistance Services</b>	Respond to community requests for technical assistance to understand the remediation and testing process.
		<b>YouTube Channel</b>	Post project updates and information about the former HWPW site.



### 5.2.1 Community Advisory Group (CAG)

Union Pacific recognizes the importance of the EPA-led CAG in facilitating open dialogue and meaningful engagement with the community.

By actively participating in the CAG, Union Pacific aims to build strong relationships with community leaders and stakeholders, fostering equity, understanding, support, and cooperation for successful implementation of the CIP.

The CAG plays a crucial role in facilitating communication and meaningful engagement between the local community, EPA, the State regulatory agencies, and other relevant federal agencies involved in the HWPW project.

The CAG represents diverse community interests and serves as a public forum where community members can express needs and concerns regarding their decision-making process. While the CAG does not have decision-making authority, its insights assist the EPA in making informed decisions regarding the Site. As opportunities allow, Union Pacific will take an active role in supporting the CAG.



### 5.2.2 Community Events

Union Pacific will participate in community events, such as local fairs, festivals, and cultural festivities to distribute information, answer questions, and interact with members of the local community.

Community events provide Union Pacific with the opportunity to build and maintain positive relationships within the community and to better understand the culture of those living there. These events also provide a more casual atmosphere for agency representatives to engage with the public. Community events may also serve to enhance awareness about environmental justice issues and allow Union Pacific to interact directly with community members who might not typically attend public meetings or information sessions.

To the extent feasible, Union Pacific may supply and staff an information booth at appropriate events to distribute information and engage in conversation with community attendees.



### 5.2.3 Coordination with Local Government & Other Agencies

Union Pacific will coordinate with local government, and other state and federal agencies to keep them informed of project activities that may impact their constituencies and build positive working relationships.

Engaging in dialogue and coordination with these entities will help to address community concerns associated with the project. Coordination will assist in encouraging consistency among local health advisories and clarifying the roles and jurisdictions of the various agencies involved. Communication with these representatives will continue throughout the life of the project.



## 5.2.4 Electronic Mail (Email)

Email can be used to contact Union Pacific’s team below.



### Public & Community Affairs:

Richard Zientek  
281-350-7178  
richardzientek@up.com

### Media Inquiries:

Robynn Tysver  
402-544-6037  
rmtysver@up.com

### General Information

To ask questions about the project:  
hwpwforward@up.com

Email provides another method to assist the public in providing input or requesting information. The goal of email is to circulate information as quickly and effectively as possible (refer to [Appendix 3](#) for EPA’s contact information).



## 5.2.5 Fact Sheets

Fact sheets will continue to be produced and distributed throughout the life of the project to keep the public informed on remediation progress and the decision-making process.

Fact sheets will be developed in English and in prominent languages of the community (e.g., Spanish). Dissemination will be via email, postings on HWPW’s website, and public forums. Fact sheets are also placed in the information repository. Refer to [Appendix 5](#) for current and previous fact sheets developed for the HWPW project and refer to [Appendix 4](#) for a listing of information repositories.



Fact sheets, also called community updates, are brief documents written in “everyday language” in an easy-to-understand format with user-friendly graphics to help the public understand highly technical reports, concepts, and information.



## 5.2.6 Information Repositories

Information repositories are in local public buildings, such as libraries, universities, and government offices, where site-related and supporting documents are available for public review.

An information repository (called the Administrative Record) is also available at EPA’s Record Center (refer to [Appendix 6](#) for contact information on the information repositories). Information repositories provide residents with accessible locations where they may read and copy official documents.

The repositories provide electronic copies of documents, so that residents and other stakeholders can download and read documents.

Union Pacific will continue to maintain the information repositories, adding documents and information as they become available. In addition to the Information Repository at EPA’s Record Center, Union Pacific will locate an Information Repository at a local library, Town Hall, or other locations convenient to the community.





## 5.2.7 Maps and Visual Aids

Maps and visual aids help people understand where the Site is in the community, so that the community can understand the relation between the Site and where they live, work, and attend school. Maps, infographics, and other visual aids can communicate complex issues simply and effectively. Visuals, including maps in outreach material (such as fact sheets and poster boards), can increase an individual's ability to understand and recall messages and information. Photographs or electronic copies of poster boards displayed at public meetings will be posted to the HWPW project website.



## 5.2.8 Media Notifications and Media Events

Union Pacific will continue to provide updates and information to local newspapers, radio, and television outlets to reach a large audience quickly and reinforce important messages and information related to the project. Union Pacific will continue to coordinate with key stakeholders to ascertain the best media outlets to reach the target audience, ensuring that the entire community is covered by those media outlets and that the information presented is concise and understandable.



## 5.2.9 Public Comment Period

Public input is welcome at any time during the Site remediation process.

There are several defined points, or public comment periods, in the process where more formal public input is solicited. The public comment period is a formal opportunity for community members to review and comment on various agency documents or actions.

Commenting is an important way for the community voice to be heard. Public comments can strengthen an environmental decision by providing the regulatory agency with facts or perspectives that were lacking in the original draft.

Union Pacific will announce each future comment period through one or more of the following methods: public notices in local newspapers, email notifications, and on social media. Fact sheets and other materials will be provided so that the public has sufficient opportunity to understand what is being presented, when comments will be accepted, how long the comment period will be open, and how to submit comments. Comment periods will be announced on the HWPW project website and through public notification. Comments may be submitted to Union Pacific via regular mail or email within the public comment period time frame.

Here are some tips on making public comments:

- Prepare for commenting by familiarizing yourself with the scope of the issue and relevant laws.
- Identify your key issues and concerns.
- Identify allies who can help with the document review and understanding of the report and coordinate your comments with them to strengthen your message.
- Be specific with your comments, including what you think could improve the document, what you think is missing from the document, what you like about the document, and what parts you want to remain in the document.



## 5.2.10 Public Input

Written communications and informal discussions with company staff are just some of the ways that Union Pacific can be reached to communicate project-related information.

This open line of communication is important to gain better understanding of the public's concerns and needs, so that they can be addressed efficiently and effectively.

Verbal comments and letters provide continued opportunity for the public to give input and allow Union Pacific to recognize trends in issues of public concern and identify areas that require information and clarification.

Informal comments can be offered at any time, such as during public meetings, availability sessions, open houses, community visits, and workshops (refer to [Appendix 3](#) for Union Pacific contact information). Written comments may be submitted via mail or email.



Union Pacific Houston Wood Preserving Works  
Site Community Meeting | October 2023.



## 5.2.11 Public Meetings

Public meetings are currently led by the EPA, with Union Pacific in attendance.

They are structured, formal meetings which are open to the general public, featuring a presentation and interaction with the public. They provide personal contact with Union Pacific representatives and an opportunity to update the community on project developments and address community concerns, ideas, questions and comments. Public meetings may feature the use of a court reporter and the issuance of meeting transcripts. Other types of meetings are less formal and may be held in a variety of formats, including small group discussions, informal open-house style information sessions, poster presentations, and virtual meetings.

At various stages throughout the project, the EPA will hold meetings to keep the public informed, answer questions, and further explain the remediation process. Each meeting will be structured to fit its purpose by using different formats (e.g., open houses, informal discussions, or PowerPoint presentations). The EPA and Union Pacific encourage the community to ask questions and provide comments. Public meetings will be held at a convenient location and time (either in person or as an online virtual meeting), so that most interested parties are able to attend. The EPA will also provide translators for non-English speaking community members.



Union Pacific Houston Wood Preserving Works Site Community Meeting | October 2023.



## 5.2.12 Community and Stakeholder Interviews

Engaging with community leaders, activists, and local organizations plays a crucial role in understanding the concerns and needs of the neighborhood surrounding the HWPW Site. Through a series of structured interviews, Union Pacific aims to identify key issues and common themes that emerge from the feedback provided by stakeholders. This process, known as a "Common Threads Analysis," helps Union Pacific tailor its communication and engagement strategies to align with community preferences.

The insights gathered from these interviews inform Union Pacific's approach to community involvement throughout the remediation process. By analyzing the responses, Union Pacific gains valuable feedback on the relationship between the community and the agency. Additionally, these interviews provide Union Pacific with valuable guidance on the most effective methods for fostering meaningful dialogue and collaboration with stakeholders.



## 5.2.13 Public Notices

The EPA and Union Pacific may use public notices to widely distribute announcements of public comment periods, public meetings, and major project milestones. Public notices may use a wide variety of media and methods, such as email notices, the project's website, EPA's website announcements, press releases, and newspaper display advertisements.

Union Pacific has also reached out to stakeholders and community groups to request their assistance in disseminating information. Public notices will be released at least two weeks (whenever possible) before scheduled public meetings.





## Union Pacific is committed to the safety and sustainability of Fifth Ward.

Since acquiring the former Houston Wood Preserving Works (HWPW) site in 1997, Union Pacific remains dedicated to maintaining cleanup and site remediation of the site and surrounding Fifth Ward areas. We're focused on the safety of the Fifth Ward community and are committed to finishing the job.

We created this website to share key facts and updates related to our ongoing site work. Here, you can access scientific studies and learn more about the site's history and our plans for additional monitoring and remediation work. Transparency and open communication mean a lot to us at Union Pacific – everyone deserves access to complete and accurate information.

HISTORY OF THE SITE

Our actions will be thorough, transparent and effective. We're focused on getting the job done and doing it right.



## Remediation and Cleanup



In 1997 Union Pacific acquired the site when it merged with Southern Pacific — 13 years after the facility closed.

When operational, the site treated railroad ties using creosote, a liquid derived from the distillation of tar from wood or coal.

Since assuming ownership, Union Pacific conducts work at the site under federal and state oversight and in accordance with its cleanup permit issued by the Texas Commission on Environmental Quality (TCEQ) and in accordance with the federal Resource Conservation and Recovery Act (RCRA). Union Pacific conducted extensive cleanup efforts and collected significant data to fully understand the impact on soil and groundwater. Our work has always focused on determining whether people living near the site could be exposed to creosote. All investigations and testing results demonstrate the same result: there is not a complete exposure pathway either from vapor intrusion or groundwater.

In December 2014, Union Pacific applied for a permit renewal, so that our work at the site can continue.

For more information about the site remediation and cleanup, view the fact sheet below:  
Taking Action for Environmental Renewal & Community Wellness  
Tomando Acción para la Renovación Ambiental y el Bienestar Comunitario

### Summary of Site Remediation and Cleanup Activities

Union Pacific has accomplished the following cleanup and remediation activities to date, approved by and under the supervision of, the TCEQ:



More than 11,000 tons or 22 million pounds of creosote-impacted soil was consolidated onsite and an engineered cap was built to prevent exposure.



Concrete and asphalt pavement at the neighboring Englewood Intermodal Yard serve as a physical barrier to prevent exposure to contaminated soil.



Union Pacific continues to conduct significant and widespread sampling of over 120 groundwater monitoring wells within the site and outside the



Current railroad infrastructure located between the former facility and the Englewood Yard serves as a cap, preventing exposure to underlying soil.



## 5.2.14 Project Website

Project websites provide key resources for accessing both general and specific information about environmental restoration projects, the roles of government agencies, and public outreach activities. Electronic versions of technical reports, progress reports, and updates on remediation are available at <https://www.houstonwoodpreservingworks.com/>. Access to the current website is unrestricted. The website can also be accessed at [www.hwpwinfo.com](http://www.hwpwinfo.com).

Union Pacific will continue to post project updates, notices, and technical documents in a timely manner. The project website is regularly updated and enhanced. Moving forward, Union Pacific may periodically solicit input from the public at public forums and workgroup meetings on how to make the website more user-friendly. Feedback on <https://www.houstonwoodpreservingworks.com> is encouraged (refer to **Appendix 3** for EPA contact information).

## History of The Site

Union Pacific inherited the site in 1997 after its merger with Southern Pacific Transportation Company (Southern Pacific Railroad)



Since then and over the past 30 years, Union Pacific has conducted investigative and cleanup work under the oversight and approval of the Texas Commission on Environmental Quality (TCEQ) to address the historic groundwater and soil contamination and to prevent exposure pathways including:

- More than 11,000 tons or 22 million pounds of creosote-impacted soil was consolidated onsite and an engineered cap was built to prevent exposure.
- Capping additional areas of creosote-impacted soils with an engineered barrier consisting of concrete, asphalt, and other materials to prevent exposure to the creosote-impacted soil.
- Conducted significant and widespread sampling of over 120 groundwater monitoring wells within the site and outside the property beneath the Greater Fifth Ward area.
- Implemented a removal program to pump creosote from monitoring wells where it is encountered.

Union Pacific recognizes the importance of continuing our monitoring and remediation efforts at the site to protect residents from potential exposure or environmental impacts in the future. Soil samples collected near the residential properties in the vicinity did not identify contamination above state standards. Since the City of Houston provides residential water to the area, impacted groundwater does not pose a risk to residents. Following EPA guidance, Union Pacific also conducted extensive soil gas and groundwater sampling off-site that demonstrated there is no vapor intrusion risk.

Union Pacific recognizes the importance of our monitoring and remediation efforts and is requesting permit renewal from the TCEQ to continue our work.



### No Creosote Exposure Pathways

Union Pacific retained scientists, engineers and environmental experts to regularly conduct environmental studies and risk assessments following Texas Commission on Environmental Quality (TCEQ) and EPA guidance since inheriting the location. These rigorous investigations, and the ongoing monitoring and testing demonstrate there is no environmental risk to the public from the impacted soil or groundwater. Click here to review the studies and investigative findings.



### 5.2.15 School & Educational Outreach

Educational outreach helps bring project awareness to new audiences and builds bridges between Union Pacific and various constituencies within the community. Engaging students and teachers will assist in addressing a number of community concerns such as: sharing important information about the nature and extent of remediation at the Site, explaining the potential risks to human and ecological health that require action, raising awareness of environmental justice issues, and encouraging environmental stewardship.

Union Pacific will provide project information to local schools and academic institutions and will work with existing educational programs to “piggyback” project information and identify additional opportunities for environmental education. Educators and students may request Union Pacific staff to visit their school. Union Pacific staff will also maintain an open line of communication with groups that provide environmental education to local schools and partner with them when appropriate.



### 5.2.16 Social Media

Union Pacific may use social media (such as X, formerly known as Twitter, Facebook and YouTube) to post updates about the Site and announce major project milestones.

On other sites, EPA has employed X and Facebook to share press releases, send out meeting reminders, and write and post social media content regarding announcements and major project milestones.



## 5.3 | Evaluation of Outreach

**To assess the effectiveness of the community involvement and outreach efforts, Union Pacific may employ several tools to periodically evaluate messages, modes of communication, tools, and outreach activities.**

Evaluations allow understanding of successes and weaknesses, and it will enable Union Pacific to retool strategies, as appropriate, to better educate and inform the public. This CIP will be reviewed and revised, as necessary, to reflect project progress and changes to community needs, concerns, issues, and contacts.

Following interactive activities, such as public meetings, Union Pacific may conduct a basic internal analysis, which involves assessing the ease of logistics, the number and representation of attendees, and the appropriateness of information (i.e., was it sufficient to answer questions). Union Pacific may also employ surveys and interviews to gauge public perceptions at various stages of remediation and testing. These may be conducted in person, via the Internet, or over the phone.

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# Appendix 1 | Abbreviations and Acronyms

<b>ACS</b>	American Community Survey
<b>APAR</b>	Affected Property Assessment Report
<b>CAG</b>	Community Advisory Group
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation, and Liability Act
<b>CIP</b>	Community Involvement Plan
<b>COC</b>	Chemicals Of Concern
<b>DNAPL</b>	Dense Nonaqueous Phase Liquid
<b>EPA</b>	Environmental Protection Agency
<b>FDP</b>	Final Draft Permit
<b>FS</b>	Feasibility Study
<b>HWPW</b>	Houston Wood Preserving Works site
<b>NPL</b>	National Priorities List
<b>OMB</b>	Office of Management and Budget
<b>PA</b>	Preliminary Assessment
<b>PRP</b>	Potentially Responsible Parties
<b>RA</b>	Remedial Action
<b>RAP</b>	Response Action Plan

<b>TAG</b>	Technical Assistance Grant
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>RD</b>	Remedial Design
<b>RFA</b>	RCRA Facility Assessment Report
<b>RI</b>	Remedial Investigation
<b>ROD</b>	Record of Decision
<b>SI</b>	Site Investigation
<b>SuperJTI</b>	Superfund Jobs Training Initiative
<b>TAG</b>	Technical Assistance Grant
<b>TASC</b>	Technical Assistance Services for Communities
<b>TCEQ</b>	Texas Commission on Environmental Quality
<b>TNRCC</b>	Texas Natural Resource Conservation Commission
<b>USACE</b>	United States Army Corps. Of Engineers

## Appendix 2 | Glossary

<b>Administrative Record</b>	The body of documents that “forms the basis” for the selection of a particular response at the Site. For example, the Administrative Record for remedy selection includes all documents that were “considered or relied upon” to select the remedy through the Record of Decision. Administrative Settlement Agreement and Order on Consent (ASAOC) An agreement issued under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), which provides for the performance of a removal action and additional environmental assessment and cleanup activities at a site.
<b>Remediation</b>	Actions taken to deal with the release or threat of release of a hazardous substance that could affect humans and/or the environment. The term “remediation” is sometimes used interchangeably with the terms “remedial action,” “cleanup,” “removal action,” “response action,” or “corrective action.”
<b>Community</b>	An interacting population of various types of individuals (or species) in a common location; a neighborhood or specific area where people live.
<b>Community Advisory Group (CAG)</b>	A committee, task force or board made up of residents affected by the Site. A CAG provides a way for representatives of diverse community interests to present and discuss their needs and concerns related to the Site and the site remediation process. CAGs are a community initiative and responsibility. They function independently of the EPA and the other partner agencies.
<b>Community Involvement and Outreach</b>	The term used to identify the process for engaging in dialogue and collaboration with communities. Community involvement is founded on the belief that people have a right to know what the government is doing in their community and to have a say in it. Its purpose is to give people the opportunity to become involved in the government’s activities and to help shape the decisions that are made.
<b>Community Relations</b>	The EPA effort to establish two-way communication with the public to create understanding of EPA programs and related actions, to assure public input into decision-making processes related to affected communities, and to make certain that the Agency is aware of and responsive to public concerns. Specific community relations activities are required in relation to site remediation.
<b>Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)</b>	Commonly known as Superfund, CERCLA is intended to protect human health and the environment by investigating and cleaning up abandoned or uncontrolled hazardous waste sites. Under the program, the EPA either can pay for a site remediation when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work, or take legal action to force parties responsible for site contamination to remediate the site or repay the federal government for the remediation cost.
<b>Consent Decree</b>	A legal document, approved by a judge, that formalizes an agreement reached between parties. For example, the EPA and potentially responsible parties (PRPs) may sign a consent decree through which PRPs will conduct all or part of a site remediation action at the Site; cease or correct actions or processes that are polluting the environment; reimburse the EPA for monies expended in the course of an EPA-performed site remediation or otherwise comply with EPA-initiated regulatory enforcement actions to resolve the contamination at the Site. The trustees may sign a consent decree with the PRPs regarding natural resource damages at a site. Alternatively, the trustees and the EPA may sign one consent decree with the PRPs to resolve all the issues at the site. The consent decree describes the actions PRPs will take, is subject to a public comment period prior to its approval by a judge and is enforceable as a final judgment by a court.
<b>Contamination</b>	Introduction into water, air and soil of microorganisms, chemicals, toxic substances, wastes or wastewater in a concentration that makes the medium unfit for its next intended use. Also applies to surfaces of objects, buildings and various household use products.
<b>Ecosystem</b>	The complex of a community and its environment functioning as an ecological unit in nature.
<b>Enforcement</b>	EPA, state, or local legal actions to obtain compliance with environmental laws, rules, regulations, or agreements and/or obtain penalties or criminal sanctions for violations. Enforcement procedures may vary, depending on the requirements of different environmental laws and related implementing regulations. Under CERCLA, for example, EPA will seek to require potentially responsible parties to remediate a site, or pay for the remediation and testing, whereas under the Clean Air Act the agency may invoke sanctions against cities failing to meet ambient air quality standards that could prevent certain types of construction or federal funding. In other situations, if investigations by EPA and state agencies uncover willful violations, criminal trials and penalties are sought.
<b>Environment</b>	The sum of all external conditions affecting the life, development and survival of an organism.
<b>Environmental Justice</b>	The fair treatment and meaningful involvement of all people regardless of race, color, national origin, culture, education or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Implies that no population of people should be forced to shoulder a disproportionate share of negative environmental impacts of pollution or environmental hazard due to a lack of political or economic strength levels.

\*Indicates that the term does not appear in the main document, but may be included in Fact Sheets or the Proposed Plan.

<b>Fact Sheet</b>	(1) A document prepared by EPA to inform the public about its permitting process and EPA's tentative decision with regard to a permit application. (2) Document distributed with newly promulgated rules and/or newly enacted laws to summarize the relevant facts for interested parties and the public.
<b>Feasibility Study (FS)</b>	Evaluation of alternatives for site remediation and restoration, including overall protection of human health and the environment, ability to be implemented, and cost effectiveness, among others. The feasibility study is usually associated with the remedial investigation. Together, they are usually referred to as the "RI/FS."
<b>Groundwater</b>	The supply of fresh water found beneath the Earth's surface, usually in aquifers, which supply wells and springs. Because groundwater is a major source of drinking water, there is growing concern over contamination from leaching agricultural or industrial pollutants or leaking underground storage tanks.
<b>Hazardous Substance</b>	(1) Any material that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive or chemically reactive. (2) Any substance designated by the EPA to be reported if a designated quantity of the substance is spilled into the waters of the United States or is otherwise released into the environment.
<b>Hazardous Waste</b>	By-products of society that can pose a substantial or potential hazard to human health or the environment when improperly handled. These wastes possess at least one of the following characteristics: toxicity, corrosivity, ignitability, or reactivity.
<b>Indoor Air</b>	The breathing air inside a habitable structure or conveyance.
<b>Information Repository</b>	A file containing current information, technical reports and reference documents regarding a site. The information repository usually is located in a public building convenient for local residents such as a public school, town hall or library. See <b>Appendix 6</b> for locations.
<b>Information Session</b>	Informal public sessions that often use poster displays and fact sheets and that include EPA personnel and contractors who are available to discuss issues and answer questions. Information sessions offer the public the opportunity to learn about project-related issues and to interact with EPA on a one-to-one basis. Information sessions do not require the use of court reporters and transcripts, although EPA may issue meeting summaries through newsletters and progress reports.
<b>*Injection Well</b>	A well into which fluids are injected for purposes such as waste disposal, improving the recovery of crude oil, or solution mining.
<b>Monitoring</b>	Periodic or continuous surveillance or testing to determine the level of compliance with statutory requirements and/or pollutant levels in various media or in humans, plants, and animals.
<b>*Monitoring Well</b>	1. A well used to obtain water quality samples or measure groundwater levels. 2. Well drilled at a hazardous waste management facility/the Site to collect ground water samples for the purpose of physical, chemical, or biological analysis to determine the amounts, types, and distribution of contaminants in the ground water beneath the Site.
<b>National Priorities List (NPL)</b>	EPA's list of serious uncontrolled or abandoned hazardous waste sites identified for possible long-term site remediation under the CERCLA process. The list is based primarily on the score a site receives from the Hazard Ranking System. The EPA is required to update the NPL at least once a year.
<b>National Contingency Plan (NCP)</b>	The federal government's blueprint for responding to both oil spills and hazardous substance releases. First developed and published in 1968, the NCP is the result of efforts to develop a national response capability and promote coordination among the hierarchy of responders and contingency plans.
<b>* Off-Site Facility</b>	A hazardous waste treatment, storage or disposal area that is located away from the generating site.
<b>Parties</b>	Companies, organizations, or agencies active in and around the Site.
<b>*Pollution</b>	Generally, the presence of matter or energy whose nature, location or quantity produces undesired environmental effects that adversely affect the usefulness of a resource or the health of humans, animals, or ecosystems.
<b>Potentially Responsible Party (PRP)</b>	An individual, company or other entity (i.e., owners, operators, transporters or generators of hazardous waste) potentially responsible for, or contributing to, the contamination problems at a Superfund site. When possible, the EPA requires a PRP, through administrative and legal actions, to remediate hazardous waste sites that it has contaminated.
<b>Proposed Plan</b>	The proposed plan for the Site remediation that is available to the public for comment.
<b>Public Comment Period</b>	A formal opportunity for community members to review and contribute written comments on various documents or actions.
<b>Public Meeting</b>	Formal public sessions characterized by a presentation to the public followed by a question-and-answer session. Formal public meetings may involve the use of a court reporter and the issuance of transcripts. Formal public meetings are required only for the Proposed Plan and ROD amendments for a site.
<b>Record of Decision (ROD)</b>	A decision document through which a site remediation process is selected. It is often referred to in the context of sites under the CERCLA process, however, RODs are also used at restoration sites under the Water Resources Development Act.

\*Indicates that the term does not appear in the main document, but may be included in Fact Sheets or the Proposed Plan.



<b>Remedial Action (RA)</b>	The actual construction or implementation phase that follows the remedial design of the Site. Remedial action or remediation is also referred to as site cleanup.
<b>Remedial Design (RD)</b>	The phase that follows the remedial investigation/feasibility study and the Record of Decision and includes development of engineering drawings and specifications for the Site remediation.
<b>Remedial Investigation (RI)</b>	An in-depth study designed to gather data needed to determine the nature and extent of contamination at a Superfund site, identify human health and ecological risks, and establish preliminary site remediation criteria. The remedial investigation is usually associated with the feasibility study. Together, they are usually referred to as the "RI/FS."
<b>Remediation</b>	Cleanup or other methods used to remove or contain a toxic spill or hazardous materials from a site.
<b>Response Action</b>	(1) Generic term for actions taken in response to actual or potential health-threatening environmental events such as spills, sudden releases, and asbestos abatement/management problems; (2) A CERCLA-authorized action involving either a short-term removal action or a long-term removal response. This may include but is not limited to: removing hazardous materials from a site to an EPA-approved hazardous waste facility for treatment, containment or treating the waste on-site, identifying and removing the sources of ground water contamination and halting further migration of contaminants; (3) Any of the following actions taken in school buildings in response to the Asbestos Hazard Emergency Response Act (AHERA) to reduce the risk of exposure to asbestos: removal, encapsulation, enclosure, repair, and operations and maintenance. (See: remedial action)
<b>Responsiveness Summary</b>	A summary of oral and/or written public comments received by EPA during a comment period on key EPA documents, and EPA's response to those comments.
<b>Restoration</b>	Actions undertaken to return an injured resource to its baseline condition, that is the condition of the resource had the release of hazardous substances not occurred. Restoration consists of two types of activities: primary and compensatory. Primary restoration encompasses actions taken by trustees to accelerate the recovery of an injured resource to its baseline. Natural recovery is considered in the analysis of options for primary restoration. Compensatory restoration compensates for the interim loss of resources from the time the injury occurs until restoration is complete.
<b>Risk</b>	A measure of the probability that damage to life, health, property, and/or the environment will occur as a result of a given hazard.
<b>*Saturated Zone</b>	A subsurface area in which all pores and cracks are filled with water under pressure equal to or greater than that of the atmosphere.
<b>*Solidification and Stabilization</b>	Removal of wastewater from a waste or changing it chemically to make it less permeable and susceptible to transport by water.
<b>*Source Reduction</b>	Reducing the amount of materials entering the waste stream by redesigning products or patterns of production or consumption (e.g., using returnable beverage containers). Synonymous with waste reduction.
<b>Stakeholder</b>	People, interest groups and other organizations or institutions that live in the project areas or closely identify with the issues associated with the project.
<b>Superfund:</b>	The program operated under the legislative authority of CERCLA that funds, oversees and carries out EPA solid waste emergency and long-term remediation activities. These activities include establishing the National Priorities List, investigating sites for inclusion on the list, determining their priority for evaluation, and conducting and/or supervising a remedial investigation/feasibility study, remediation, testing, and other remedial actions.
<b>Technical Assistance Grant (TAG)</b>	A TAG provides money for activities that help communities participate in decision-making at eligible Superfund sites. An initial grant up to \$50,000 is available for any Superfund site that is on the EPA's NPL or proposed for listing on the NPL and where a response action has begun. Additional funding may be provided by the EPA at complex sites.
<b>Technical Assistance Services for Communities (TASC)</b>	The national TASC program provides independent assistance through an EPA contract to help communities better understand the science, regulations, and policies of environmental issues and EPA actions. Under the TASC contract, a contractor provides scientists, engineers and other professionals to review and explain information to communities.
<b>Toxicity</b>	A relative property of a chemical that refers to its potential to have a harmful effect on a living organism. It is a function of the concentration of the chemical and the duration of exposure.
<b>*Treatment, Storage and Disposal Facility</b>	Site where a hazardous substance is treated, stored, or disposed of. TSD facilities are regulated by EPA and states under RCRA.
<b>*Treatment</b>	(1) Any method, technique, or process designed to remove solids and/or pollutants from solid waste, wastestreams, effluents, and air emissions. (2) Methods used to change the biological character or composition of any regulated medical waste so as to substantially reduce or eliminate its potential for causing disease.
<b>Underground Storage Tank</b>	A tank located at least partially underground and designed to hold gasoline or other petroleum products or chemicals.
<b>*Water Table</b>	The level of groundwater.

\*Indicates that the term does not appear in the main document, but may be included in Fact Sheets or the Proposed Plan.

## Appendix 3 | Agency Contacts

### **U.S. Environmental Protection Agency – Region VI**

Earthea Nance, Regional Administrator  
Mailing Address: 1201 Elm Street  
Dallas, TX 75270  
Office Phone: 214-665-2211  
Email: Nance.Earthea@epa.gov

### **Texas Commission on Environmental Quality, Region 12**

Regional Director  
Nicole Bealle

Assistant Regional Director  
Andy Goodridge

Special Assistant  
Jason Ybarra

Executive Assistant  
La'Trenda McClellan

5425 Polk St, Ste H  
Houston, TX 77023-1452  
Main Line: 713-767-3500

## Appendix 4 | Information Repositories

### **Tuttle Library**

702 Kress Street,  
Houston, TX 77020

### **Regional Freedom of Information Officer**

#### **U.S. EPA, Region 6**

1445 Ross Avenue (ORC-DF)  
Dallas, TX 75202-2733  
(214) 665-7302



# Appendix 5 | Fact Sheets

## Taking Action for Environmental Renewal & Community Wellness

Former Houston Wood Preserving Works

### SITE HISTORY

The former Houston Wood Preserving Works (HWPW) site, once owned and operated by Southern Pacific, was a wood treatment facility in Fifth Ward from 1911-1984. While operational, the facility treated wooden railroad ties (the rectangular "support beams" of the track) with creosote, a commonly-used chemical preservative of the time, created from wood or coal tar.

Over time, creosote and other wood-treating chemicals migrated through the soil to groundwater zones, with some chemicals dissolving into the groundwater and creating groundwater plumes. No water from the site plume is consumed or used in any manner.

### CLEANUP EFFORTS & REGULATORY AGENCIES

Since taking over the former HWPW site in 1997, Union Pacific Railroad has maintained cleanup of the site in accordance with federal and state regulations issued by the U.S. Environmental Protection Agency (EPA) and Texas Commission on Environmental Quality (TCEQ).

More than 11,000 tons of creosote-impacted soil was consolidated onsite and covered with a soil cap in 2016 to prevent exposure to the community. Union Pacific conducted over 110 quarterly site inspections since 1994, when the initial permit was effective.

### FAST FACTS

25+

Years of continuous cleanup efforts in coordination with regulatory agencies and the community.



2

Regulatory agencies with unique testing and evaluation criteria that Union Pacific is responsible for meeting.

120+

Groundwater monitoring wells installed by Union Pacific within the site and surrounding areas.

OVER 3,000

Groundwater samples tested as a part of cleanup efforts.

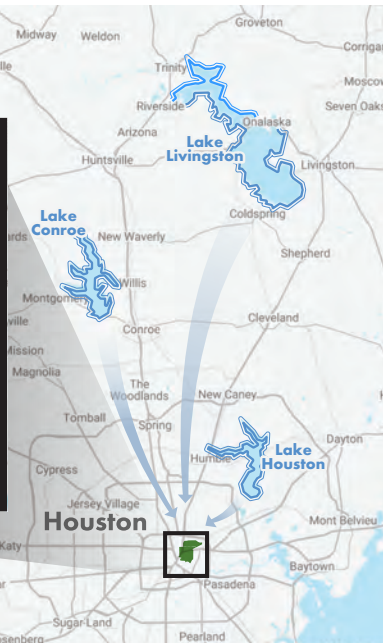
### SITE LOCATION

- Kashmere Gardens/Fifth Ward
- HWPW Site



### REGIONAL DRINKING WATER SOURCES

- City of Houston Drinking Water Source



### AREA DRINKING WATER

Union Pacific is committed to protecting the community from environmental hazards. Studies have not revealed a significant pathway for the contamination to reach any residents living near the former HWPW site, and drinking water has been deemed safe by the City of Houston and EPA.

## Taking Action for Environmental Renewal & Community Wellness

### CURRENT CONDITIONS

Union Pacific has accomplished the following clean up and remediation activities to date, approved and under TCEQ supervision:

#### Site Inspections

Union Pacific conducts weekly inspections of the site and quarterly inspections and maintenance of the engineered cap areas. Since 2016, Union Pacific has conducted over 25 quarterly site inspections. Cap inspection reports are submitted annually to the TCEQ. Reports are also posted on [HoustonWoodPreservingWorks.com](http://HoustonWoodPreservingWorks.com) and physical copies can be viewed at the Tuttle Neighborhood Library on Kress St.

#### Groundwater

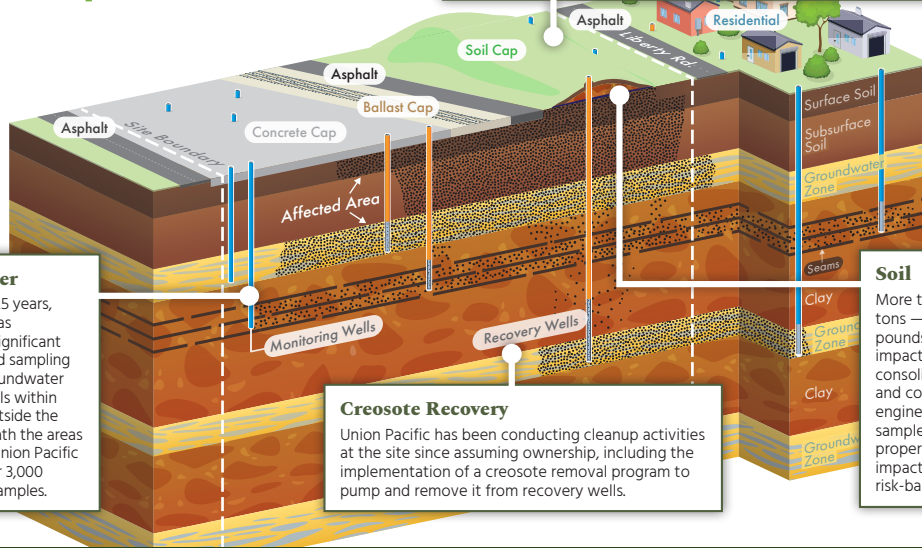
Over the past 25 years, Union Pacific has implemented significant and widespread sampling of over 120 groundwater monitoring wells within the site and outside the property beneath the areas in Fifth Ward. Union Pacific has tested over 3,000 groundwater samples.

#### Creosote Recovery

Union Pacific has been conducting cleanup activities at the site since assuming ownership, including the implementation of a creosote removal program to pump and remove it from recovery wells.

#### Soil

More than 11,000 tons — or 22 million pounds — of creosote-impacted soil was consolidated onsite and covered with an engineered cap. Soil samples near residential properties do not show impacts above TCEQ risk-based levels.



### FUTURE PLANS

A revised Remedial Action Plan (RAP) was submitted to the TCEQ in August 2020 detailing the proposed response actions for the onsite and off-site groundwater plume. The revised RAP is available for review at [HoustonWoodPreservingWorks.com](http://HoustonWoodPreservingWorks.com). Ongoing and planned environmental efforts include:

#### Groundwater

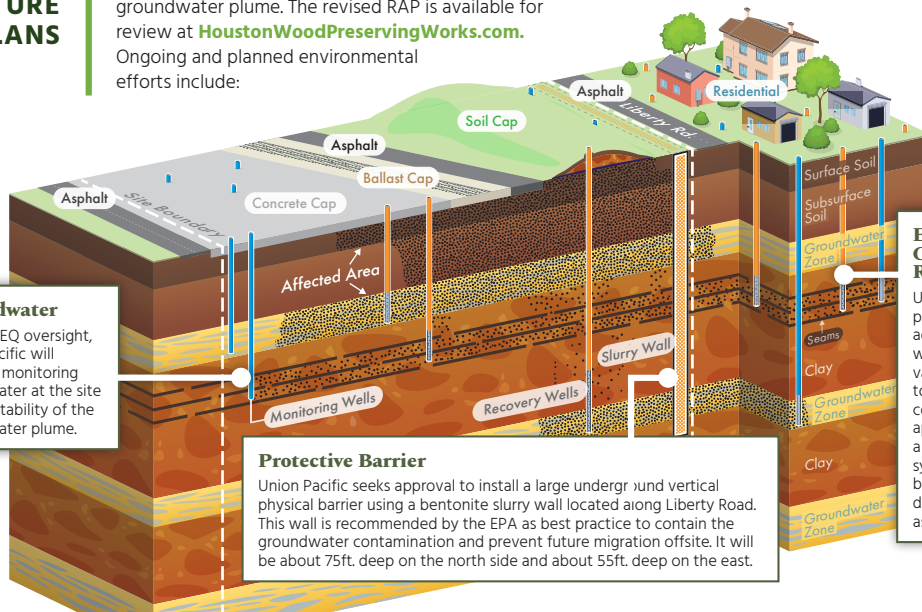
Under TCEQ oversight, Union Pacific will continue monitoring groundwater at the site and the stability of the groundwater plume.

#### Protective Barrier

Union Pacific seeks approval to install a large underground vertical physical barrier using a bentonite slurry wall located along Liberty Road. This wall is recommended by the EPA as best practice to contain the groundwater contamination and prevent future migration offsite. It will be about 75ft. deep on the north side and about 55ft. deep on the east.

#### Expanded Creosote Recovery

Union Pacific proposes installing additional recovery wells and using a vacuum process to remove contaminants. This approach will use a trailer-mounted system that can be moved to different locations as necessary.



# Tomando Acción para la Renovación Ambiental y el Bienestar Comunitario

Former Houston  
Wood Preserving  
Works\*

## HISTORIA DEL SITIO

El antiguo sitio de Houston Wood Preserving Works (HWPW), una vez propiedad y operado por Southern Pacific, fue una instalación de tratamiento de madera en Fifth Ward desde 1911 hasta 1984. Mientras estuvo en funcionamiento, la instalación trató traviesas de ferrocarril de madera (las "vigas de soporte" rectangulares de la vía) con creosota, un conservante químico comúnmente utilizado en ese momento, creado a partir de alquitrán de madera o carbón.

Con el tiempo, la creosota y otros productos químicos para el tratamiento de la madera migraron a través del suelo hacia las zonas de aguas subterráneas, con algunos productos químicos disolviéndose en las aguas subterráneas y creando plumas de aguas subterráneas. No hay agua de la pluma del sitio que se consuma o se utilice de alguna manera.

## ESFUERZOS DE LIMPIEZA Y AGENCIAS REGULADORAS

Desde que asumió el control del antiguo sitio de HWPW en 1997, Union Pacific Railroad ha mantenido la limpieza del sitio de acuerdo con las regulaciones federales y estatales emitidas por la Agencia de Protección Ambiental de los Estados Unidos (EPA) y la Comisión de Calidad Ambiental de Texas (TCEQ).

Más de 11,000 toneladas de suelo afectado por creosota fueron consolidadas en el sitio y cubiertas con una capa de suelo en 2016 para prevenir la exposición a la comunidad. Union Pacific realizó más de 110 inspecciones trimestrales del sitio desde 1994, cuando entró en vigor el permiso inicial.

## DATOS RÁPIDOS

25+

Años de esfuerzos continuos de limpieza en coordinación con agencias reguladoras y la comunidad.



2

Agencias reguladoras con criterios de prueba y evaluación únicos que Union Pacific debe cumplir.

120+

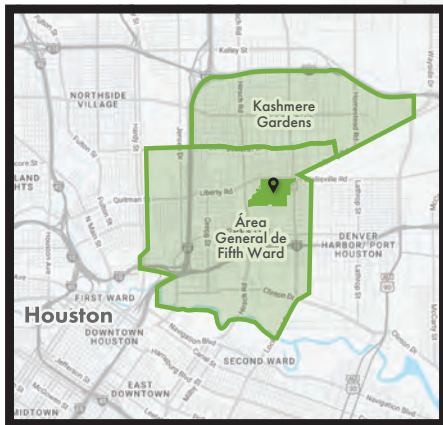
Pozos de monitoreo de aguas subterráneas dentro del sitio y áreas circundantes instalados por Union Pacific.

MÁS DE 3,000

Muestras de agua subterránea analizadas como parte de los esfuerzos de limpieza.

### UBICACIÓN DEL SITIO

- Kashmere Gardens/Fifth Ward
- HWPW Site



### FUENTES REGIONALES DE AGUA POTABLE

- Fuente de Agua Potable de la Ciudad de Houston

### AGUA POTABLE DEL ÁREA

Union Pacific está comprometido a proteger a la comunidad de peligros ambientales. Los estudios no han revelado una vía significativa para que la contaminación alcance a los residentes que viven cerca del antiguo sitio de HWPW, y el agua potable ha sido considerada segura por la Ciudad de Houston y la EPA.

\*Antiguo sitio de Houston Wood Preserving Works



# Tomando Acción para la Renovación Ambiental y el Bienestar Comunitario

## CONDICIONES ACTUALES

Union Pacific ha llevado a cabo las siguientes actividades de limpieza y remediación hasta la fecha, aprobadas y bajo supervisión de la TCEQ:

### Inspecciones del Sitio

Union Pacific lleva a cabo inspecciones semanales del sitio y inspecciones trimestrales y mantenimiento de las áreas con cubierta técnica. Desde 2016, Union Pacific ha realizado más de 25 inspecciones trimestrales del sitio. Los informes de inspección de la cubierta se envían anualmente a la TCEQ. Los informes también se publican en [HoustonWoodPreservingWorks.com](http://HoustonWoodPreservingWorks.com) y las copias físicas se pueden ver en la Biblioteca del Vecindario Tuttle ubicada en la calle Kress.

### Aguas Subterráneas

Durante los últimos 25 años, Union Pacific ha implementado un muestreo significativo y extenso de más de 120 pozos de monitoreo de aguas subterráneas dentro del sitio y fuera de la propiedad, debajo de las áreas en Fifth Ward. Union Pacific ha hecho pruebas a más de 3,000 muestras de agua subterránea.

### Recuperación de Creosota

Union Pacific ha estado llevando a cabo actividades de limpieza en el sitio desde que asumió la propiedad, incluida la implementación de un programa de remoción de creosota para bombear y eliminarla de los pozos de recuperación.

### Suelo

Más de 11,000 toneladas, o 22 millones de libras, de suelo afectado por creosota fueron consolidadas en el sitio y cubiertas con una tapa técnica. Las muestras de suelo cerca de propiedades residenciales no muestran impactos por encima de los niveles de riesgo de la TCEQ.

## PLANES A FUTURO

Un Plan de Acción Remedial (RAP, por sus siglas en inglés) revisado fue presentado a la TCEQ en agosto de 2020 detallando las acciones de respuesta propuestas para la pluma de aguas subterráneas en el sitio y fuera del sitio. El RAP actualizado está disponible para su revisión en [HoustonWoodPreservingWorks.com](http://HoustonWoodPreservingWorks.com). Los esfuerzos ambientales en curso y planificados incluyen:

### Aguas Subterráneas

Bajo la supervisión de la TCEQ, Union Pacific continuará monitoreando las aguas subterráneas en el sitio y la estabilidad de la pluma de aguas subterráneas.

### Barrera Protectora

Union Pacific busca tener la aprobación para instalar una barrera física grande de manera vertical y subterránea utilizando una pared de lodo de bentonita ubicada a lo largo de Liberty Road. Esta pared es recomendada por la EPA como la mejor práctica para contener la contaminación de las aguas subterráneas y prevenir futuras migraciones fuera del sitio. Tendrá aproximadamente 75 pies de profundidad en el lado norte y aproximadamente 55 pies de profundidad en el este.

### Recuperación Ampliada de Creosota

Union Pacific propone la instalación de pozos de recuperación adicionales y el uso de un proceso de vacío para eliminar contaminantes. Este enfoque utilizará un sistema montado en remolque que puede ser trasladado a diferentes ubicaciones según sea necesario.



# Safe Drinking Water in the Fifth Ward

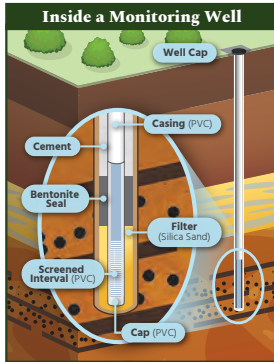
## 120+ GROUNDWATER WELLS MONITOR THE AREA

# Former Houston Wood Preserving Works

For over 25 years, Union Pacific Railroad has worked to clean up and monitor groundwater within the former Houston Wood Preserving Works (HWPW) site and surrounding areas in the Fifth Ward.

The former HWPW site was a wood treatment facility owned and operated by Southern Pacific from 1911-1984. While operational, the facility treated wooden railroad ties (the rectangular "support beams" of the track) with creosote, a commonly-used chemical preservative of the time, created from wood or coal tar.

Union Pacific continues to manage cleanup at the site with federal and state oversight to determine the extent and stability of the groundwater plume.



**Groundwater Plume**  
Over the 70+ years of operation under Southern Pacific, railroad ties at the site were treated using creosote. Creosote and other wood treating chemicals migrated through the soil, reaching the groundwater and creating the plume. The groundwater plume is at least 24 feet below the surface onsite, and **no water from the site plume is consumed or used in any manner.**

**Area Drinking Water**  
Union Pacific is committed to protecting the community from any environmental hazards. Studies have not revealed a significant pathway for the contamination to reach any residents living near the former HWPW site, and drinking water has been deemed safe by the City of Houston and EPA. The City of Houston provides drinking water to all of Fifth Ward and Kashmere Gardens. Water is predominantly sourced from Lake Livingston, Lake Conroe, Lake Houston, and Gulf Coast Aquifer wells. All residential water in the Fifth Ward and Kashmere Gardens is filtered through purification plants before reaching homesites.

**Monitoring Wells**  
To maintain a consistent pulse on groundwater quality, Union Pacific installed more than 120 groundwater monitoring wells at the former HWPW site and surrounding areas in Fifth Ward. Union Pacific collects samples from the monitoring wells twice a year. Monitoring wells are located within and outside of the plume to monitor for any plume migration. Wells range from 19 ft. to 118 ft. deep, with an average around 43 ft.



HoustonWoodPreservingWorks.com  
Contact: HWPWForward@up.com

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# Agua Potable Segura en Fifth Ward

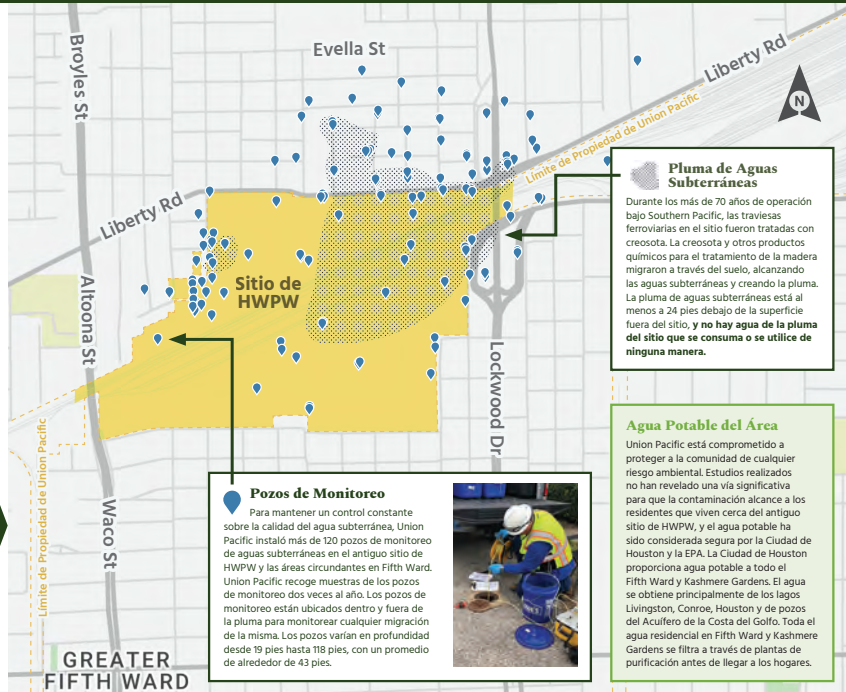
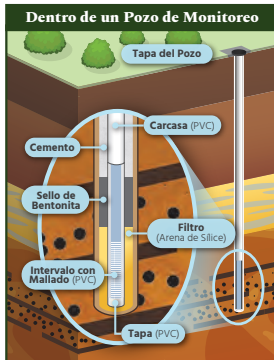
## MÁS DE 120 POZOS DE AGUA SUBTERRÁNEA MONITOREAN EL ÁREA

# Former Houston Wood Preserving Works\*

Durante más de 25 años, Union Pacific Railroad ha trabajado en la limpieza y el monitoreo de las aguas subterráneas dentro del antiguo sitio de Houston Wood Preserving Works (HWPW) y las áreas circundantes en el Fifth Ward.

El antiguo sitio de HWPW era una instalación de tratamiento de madera que era propiedad de y operada por Southern Pacific desde 1911 hasta 1984. Mientras estuvo en funcionamiento, la instalación trató traviesas de ferrocarril de madera (las "vigas de soporte" rectangulares de la vía) con creosoto, un conservante químico comúnmente utilizado en ese momento, creado a partir de alquitrán de madera o carbón.

Union Pacific continúa gestionando la limpieza en el sitio con supervisión federal y estatal para determinar la extensión y estabilidad de la pluma de aguas subterráneas.



**Pluma de Aguas Subterráneas**  
Durante los más de 70 años de operación bajo Southern Pacific, las traviesas ferroviarias en el sitio fueron tratadas con creosoto. La creosoto y otros productos químicos para el tratamiento de la madera migraron a través del suelo, alcanzando las aguas subterráneas y creando la pluma. La pluma de aguas subterráneas está al menos a 24 pies debajo de la superficie fuera del sitio, y **no hay agua de la pluma del sitio que se consuma o se utilice de ninguna manera.**

**Agua Potable del Área**  
Union Pacific está comprometido a proteger a la comunidad de cualquier riesgo ambiental. Estudios realizados no han revelado una vía significativa para que la contaminación alcance a los residentes que viven cerca del antiguo sitio de HWPW, y el agua potable ha sido considerada segura por la Ciudad de Houston y la EPA. La Ciudad de Houston proporciona agua potable a todo el Fifth Ward y Kashmere Gardens. El agua se obtiene principalmente de los lagos Livingston, Conroe, Houston y de pozos del Acuífero de la Costa del Golfo. Toda el agua residencial en Fifth Ward y Kashmere Gardens se filtra a través de plantas de purificación antes de llegar a los hogares.

**Pozos de Monitoreo**  
Para mantener un control constante sobre la calidad del agua subterránea, Union Pacific instaló más de 120 pozos de monitoreo de aguas subterráneas en el antiguo sitio de HWPW y las áreas circundantes en Fifth Ward. Union Pacific recoge muestras de los pozos de monitoreo dos veces al año. Los pozos de monitoreo están ubicados dentro y fuera de la pluma para monitorear cualquier migración de la misma. Los pozos varían en profundidad desde 19 pies hasta 118 pies, con un promedio de alrededor de 43 pies.



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\*Antiguo sitio de Houston Wood Preserving Works

# Conducting Vapor Testing

Former Houston Wood Preserving Works

## Your Safety Matters

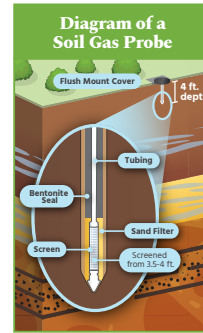
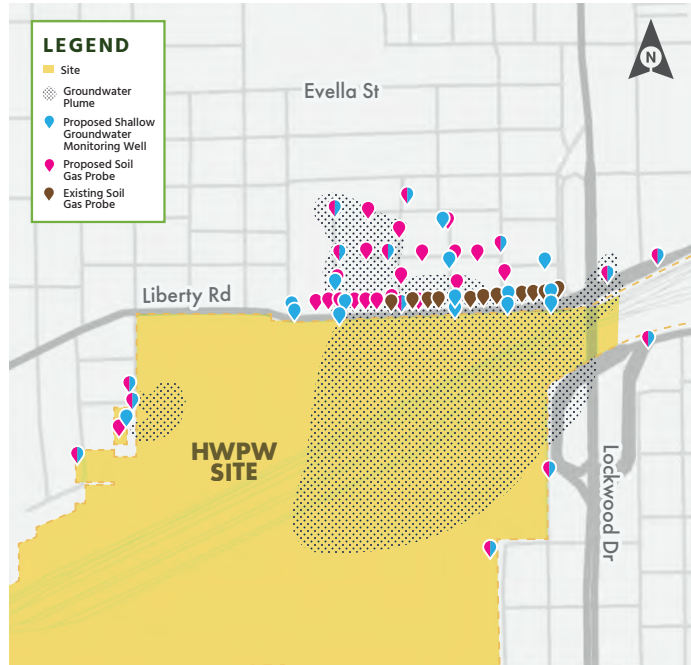
Your safety and well-being are important to us at Union Pacific, and we will continue taking action to safeguard the Fifth Ward community. In partnership with the U.S. Environmental Protection Agency (EPA), Union Pacific is completing tests to evaluate potential threats to indoor air quality near the former Houston Wood Preserving Works (HWPW) site.

## Using a Phased Testing Approach

Union Pacific is working to understand if any chemicals from the historically contaminated HWPW site can migrate into the indoor air of homes and buildings. EPA has approved a phased approach to assess potential risks by collecting samples from:

- ▶ Sanitary sewer and storm drain (vapor and liquid)
- ▶ Soil gas and outdoor air
- ▶ Shallow groundwater

This testing is similar to what Union Pacific did in 2020.



## BY THE NUMBERS

As proposed in the EPA-approved work plan:

- 45** Soil Gas Samples
- 20** Outdoor Air Samples
- 32** Shallow Groundwater Samples
- 34** Sanitary Sewer Samples (17 air/17 liquid)
- 46** Storm Drain Samples (23 air/23 liquid)

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# Conducting Vapor Testing

Former Houston Wood Preserving Works

## What are we trying to find with vapor testing?

Vapor testing is integral and just one part of Union Pacific's long-term commitment to the safety of Fifth Ward. While previous testing has shown no risk to residents, we're aiming for thoroughness for the safety of the community. Union Pacific is working with the EPA on testing to re-check vapor movement and guide next actions.

### Storm Drain

Storm drains can act as pathways for water and vapor to migrate underground. Union Pacific will collect samples from the storm drains to assess if chemicals are present and whether they could affect indoor air quality.

### Sanitary Sewer Lines

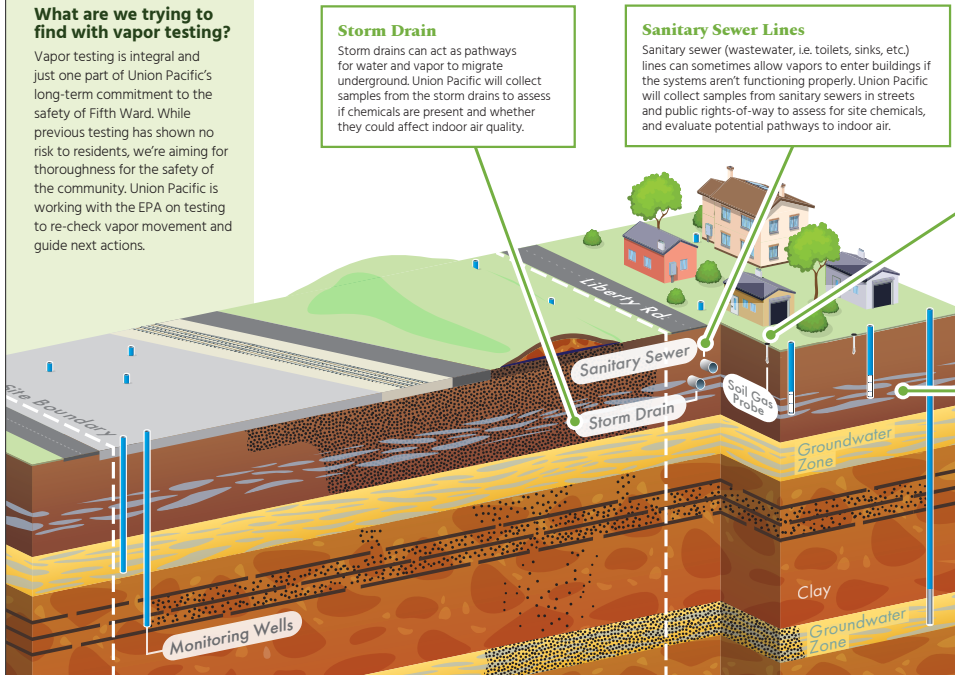
Sanitary sewer (wastewater, i.e. toilets, sinks, etc.) lines can sometimes allow vapors to enter buildings if the systems aren't functioning properly. Union Pacific will collect samples from sanitary sewers in streets and public rights-of-way to assess for site chemicals, and evaluate potential pathways to indoor air.

### Soil Gas & Outdoor Air

Union Pacific will collect soil gas samples to determine if there are any potentially harmful chemicals from groundwater and soil in the area. Outdoor samples are being collected at the same time to assess any impact from external sources like car exhaust, industrial emissions, and combustion.

### Shallow Groundwater

Union Pacific will collect shallow groundwater samples from monitoring wells positioned near the former HWPW site, allowing us to evaluate the presence and levels of chemicals.



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# Realizando Pruebas de Vapor

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## Su Seguridad Es Importante

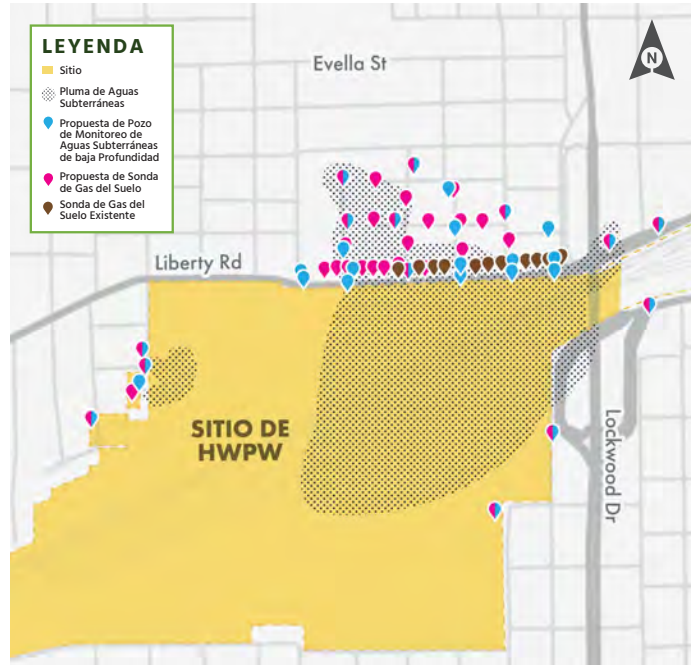
Su seguridad y bienestar son importantes para nosotros en Union Pacific, y continuaremos tomando medidas para salvaguardar a la comunidad de Fifth Ward. En colaboración con la Agencia de Protección Ambiental de los Estados Unidos (EPA, por sus siglas en inglés), Union Pacific está llevando a cabo pruebas para evaluar posibles riesgos a la calidad del aire interior cerca del antiguo sitio de Houston Wood Preserving Works (HWPW).

## Llevando A Cabo Pruebas de Manera Progresiva Por Fases

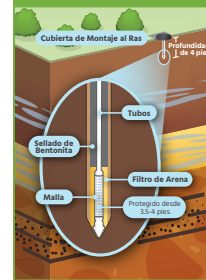
Union Pacific está trabajando para entender si algún químico del sitio HWPW históricamente contaminado puede migrar al aire interior de viviendas y edificios. La EPA ha aprobado un enfoque por fases para evaluar posibles riesgos mediante la recolección de muestras de:

- ▶ Alcantarillado sanitario y desagüe pluvial (vapor y líquido)
- ▶ Agua subterránea de baja profundidad
- ▶ Gas del suelo y aire del exterior

Esta serie de pruebas realizadas es similar a la que Union Pacific realizó en 2020.



## Diagrama de una Sonda de Gas del Suelo



## NÚMEROS RELEVANTES

Según lo propuesto en el plan de trabajo aprobado por la EPA:

- 45** Muestras de Gas del Suelo
- 20** Muestras de Aire Exterior
- 32** Muestras de Agua Subterránea de baja profundidad
- 34** Muestras de Alcantarillado Sanitario (17 de aire/17 líquidas)
- 46** Muestras de Desagüe de Tormenta (23 de aire/23 líquidas)

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\*Antiguo sitio de Houston Wood Preserving Works

# Realizando Pruebas de Vapor

Former Houston  
Wood Preserving  
Works\*

## ¿Qué estamos tratando de encontrar con las pruebas de vapor?

Las pruebas de vapor son integrales y solo una parte del compromiso a largo plazo de Union Pacific con la seguridad de Fifth Ward. Aunque las pruebas anteriores no han mostrado que existen riesgos para los residentes, buscamos proceder de manera exhaustiva para cerciorar la seguridad de la comunidad. Union Pacific está trabajando con la Agencia de Protección Ambiental (EPA, por sus siglas en inglés) en hacer pruebas para volver a verificar el movimiento de vapor y guiar las acciones a futuro.

### Desagüe Pluvial

Los desagües pluviales pueden actuar como vías para que el agua y el vapor migren bajo tierra. Union Pacific recolectará muestras de los desagües pluviales para evaluar si hay presencia de productos químicos y si podrían afectar la calidad del aire interior.

### Líneas de Alcantarillado Sanitario

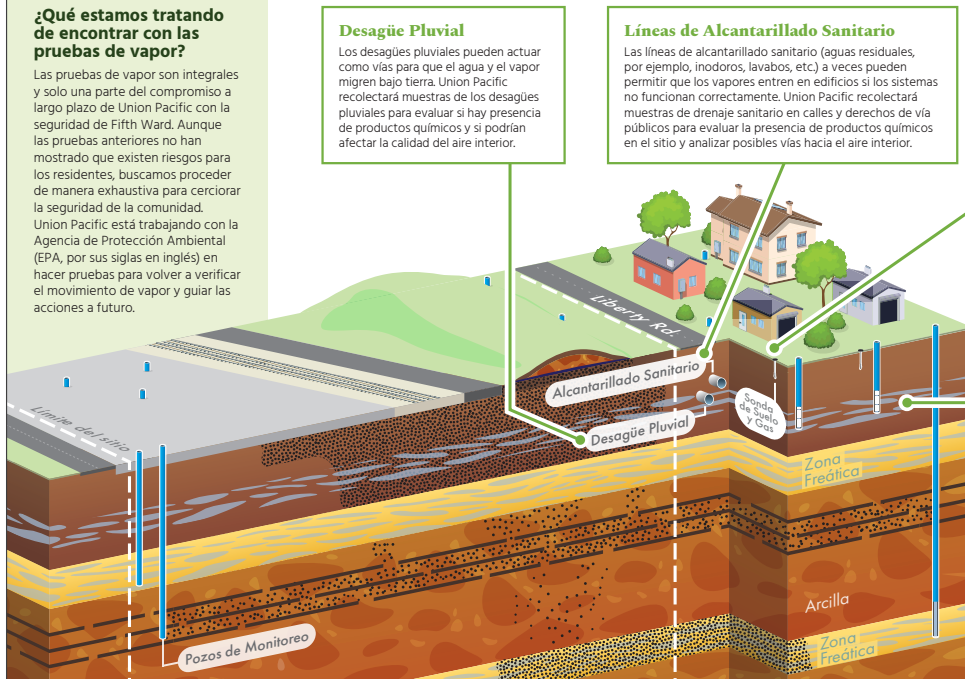
Las líneas de alcantarillado sanitario (aguas residuales, por ejemplo, inodoros, lavabos, etc.) a veces pueden permitir que los vapores entren en edificios si los sistemas no funcionan correctamente. Union Pacific recolectará muestras de drenaje sanitario en calles y derechos de vía públicos para evaluar la presencia de productos químicos en el sitio y analizar posibles vías hacia el aire interior.

### Gas del Suelo y Aire Exterior

Union Pacific tomará muestras de gas del suelo para determinar la presencia de posibles productos químicos dañinos provenientes del agua subterránea y el suelo en la zona. Al mismo tiempo, se están tomando muestras al aire libre para evaluar cualquier impacto de fuentes externas como escape de automóviles, emisiones industriales y combustión.

### Aguas Subterráneas Superficiales de Baja profundidad

Union Pacific tomará muestras de aguas subterráneas superficiales de pozos de monitoreo ubicados cerca del antiguo sitio de HWPW, lo que nos permitirá evaluar la presencia y niveles de productos químicos.



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\*Antigua Planta de Tratamiento de Madera de Houston

# Soil Testing in Your Community: What to Expect

## Former Houston Wood Preserving Works

### Your Safety Matters

Your safety and well-being are important to us at Union Pacific. We will continue taking action to safeguard the Fifth Ward community.

**WHAT:** Union Pacific is conducting surface and shallow soil sampling around the former Houston Wood Preserving Works (HWPW) site.

**WHY:** Sampling is essential to identify the presence of dioxins, furans, volatile organic compounds, and semi-volatile organic compounds, both related and unrelated to the former HWPW site.

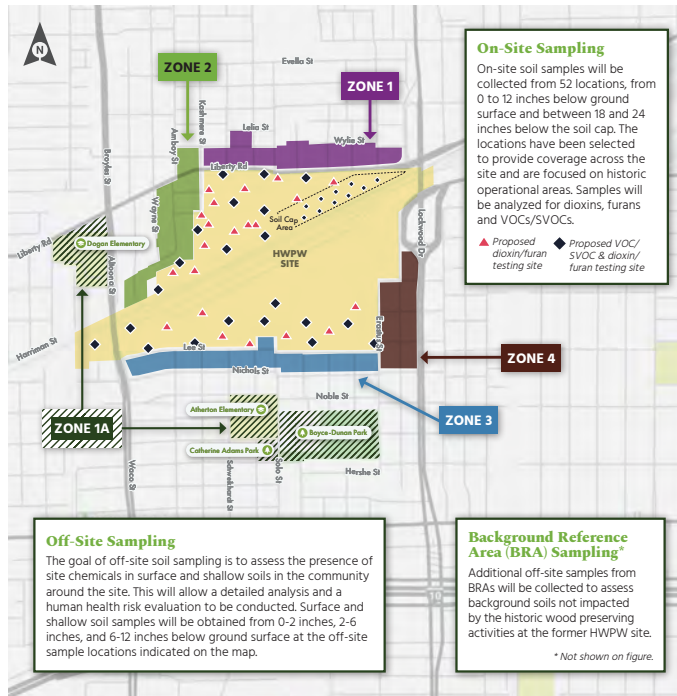
**HOW:** Workers will utilize hand augers, shovels, and spoons to collect surface and shallow soil samples from between 0 and 24 inches below ground level.

**WHERE:** Sampling will take place at various depths across five zones identified on the map, including neighborhoods, schools, parks, and recreation centers.

- Samples from the five zones will be compared to background samples obtained from off-site locations not affected by past activities at the former HWPW site.

- The selection of background sample locations involved collaboration between the U.S. Environmental Protection Agency (EPA), Texas Commission on Environmental Quality, City of Houston, Harris County, and Union Pacific.

**WHEN:** Background sampling began in March 2024. The surface and shallow soil sampling plan was approved by the EPA in April 2024. Neighborhood soil sampling and on-site sampling are scheduled to begin in May 2024.



**On-Site Sampling**  
On-site soil samples will be collected from 52 locations, from 0 to 12 inches below ground surface and between 18 and 24 inches below the soil cap. The locations have been selected to provide coverage across the site and are focused on historic operational areas. Samples will be analyzed for dioxins, furans and VOCs/SVOCs.

**Off-Site Sampling**  
The goal of off-site soil sampling is to assess the presence of site chemicals in surface and shallow soils in the community around the site. This will allow a detailed analysis and a human health risk evaluation to be conducted. Surface and shallow soil samples will be obtained from 0-2 inches, 2-6 inches, and 6-12 inches below ground surface at the off-site sample locations indicated on the map.

**Background Reference Area (BRA) Sampling\***  
Additional off-site samples from BRAs will be collected to assess background soils not impacted by the historic wood preserving activities at the former HWPW site.  
\* Not shown on figure.

### KEY TERMS

**Dioxins**  
A group of chlorinated chemical compounds that are produced unintentionally as byproducts of combustion, incineration, and other industrial processes.  
Dioxins are common environmental pollutants found almost everywhere. More than 90% of typical human exposure is estimated by EPA to be through consuming animal fats, mainly meat, dairy products, fish, and shellfish.

**Volatile Organic Compounds (VOCs)**  
A group of chemicals that can easily turn into a gas at low temperatures. Some common products that include VOCs are paints, paint strippers, cleaning supplies, pesticides, copiers and printers, gasoline, glues and adhesives, and permanent markers.

**Semi-Volatile Organic Compounds (SVOCs)**  
A group of chemicals that usually remain as liquids or solids at lower temperatures and can settle on outdoor surfaces. Common products that include SVOCs are pesticides, oil-based products, and fire retardants.

Source: EPA.gov

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# Qué Esperar de las Pruebas de Suelo en su Comunidad

## Former Houston Wood Preserving Works\*

### Su Seguridad es Importante

Su seguridad y bienestar son importantes para nosotros en Union Pacific. Seguiremos tomando medidas para proteger a la comunidad de Fifth Ward.

**QUÉ:** Union Pacific está llevando a cabo pruebas de muestreo de superficie y suelo poco profundo alrededor del antiguo sitio de Houston Wood Preserving Works (HWPW).

**POR QUÉ:** El muestreo es esencial para identificar la presencia de dioxinas, furanos, compuestos orgánicos volátiles y compuestos orgánicos semivolátiles, tanto relacionados como no relacionados con el antiguo sitio de HWPW.

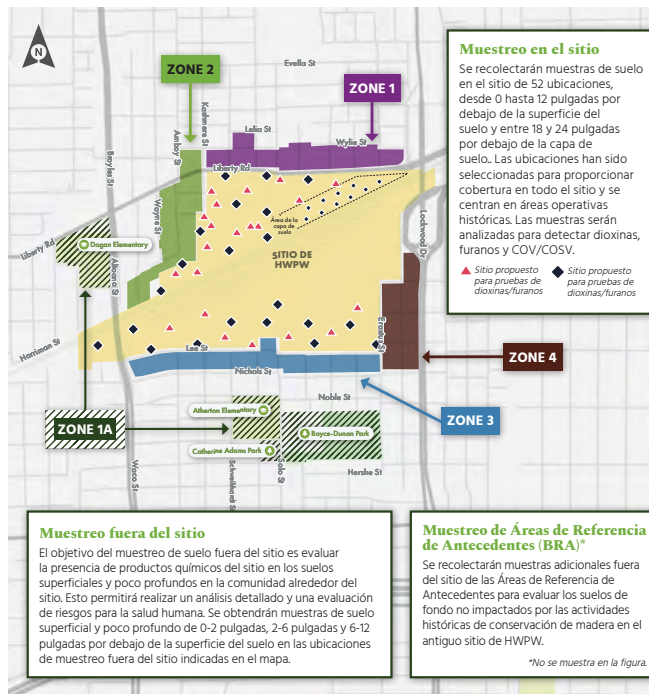
**CÓMO:** Los trabajadores utilizarán barrenas manuales, palas y cucharas para recolectar muestras de suelo superficial y poco profundo de entre 0 y 24 pulgadas por debajo del nivel del suelo.

**DÓNDE:** El muestreo se llevará a cabo a varias profundidades en cinco zonas identificadas en el mapa, incluidas vecindarios, escuelas, parques y centros recreativos.

- Las muestras de las cinco zonas se compararán con muestras de referencia obtenidas de ubicaciones fuera del sitio no afectadas por actividades pasadas en el antiguo sitio de HWPW.

- La selección de las ubicaciones de muestras de referencia implicó la colaboración entre la Agencia de Protección Ambiental de los Estados Unidos (EPA), la Comisión de Calidad Ambiental de Texas (TCEQ), la Ciudad de Houston, el Condado de Harris y Union Pacific.

**CUÁNDO:** El muestreo de referencia comenzó en marzo de 2024. El plan de muestreo de superficie y suelo poco profundo fue aprobado por la EPA en abril de 2024. El muestreo de suelo en los vecindarios y en el sitio está programado para comenzar en mayo de 2024.



**Muestreo en el sitio**  
Se recolectarán muestras de suelo en el sitio de 52 ubicaciones, desde 0 hasta 12 pulgadas por debajo de la superficie del suelo y entre 18 y 24 pulgadas por debajo de la capa de suelo. Las ubicaciones han sido seleccionadas para proporcionar cobertura en todo el sitio y se centran en áreas operativas históricas. Las muestras serán analizadas para detectar dioxinas, furanos y COV/COSV.

**Muestreo fuera del sitio**  
El objetivo del muestreo de suelo fuera del sitio es evaluar la presencia de productos químicos del sitio en los suelos superficiales y poco profundos en la comunidad alrededor del sitio. Esto permitirá realizar un análisis detallado y una evaluación de riesgos para la salud humana. Se obtendrán muestras de suelo superficial y poco profundo de 0-2 pulgadas, 2-6 pulgadas y 6-12 pulgadas por debajo de la superficie del suelo en las ubicaciones de muestreo fuera del sitio indicadas en el mapa.

**Muestreo de Áreas de Referencia de Antecedentes (BRA)\***  
Se recolectarán muestras adicionales fuera del sitio de las Áreas de Referencia de Antecedentes para evaluar los suelos de fondo no impactados por las actividades históricas de conservación de madera en el antiguo sitio de HWPW.  
\*No se muestra en la figura.

### TÉRMINOS IMPORTANTES

**Dioxinas**  
Un grupo de compuestos químicos clorados que se producen de manera no intencionada como subproductos de la combustión, la incineración y otros procesos industriales.  
Las dioxinas son contaminantes ambientales comunes que se encuentran casi en todas partes. Se estima que más del 90% de la exposición humana típica es a través de la ingesta de grasas animales, principalmente carne, productos lácteos, pescado y mariscos, según la EPA.

**Compuestos Orgánicos Volátiles (COV)**  
Un grupo de productos químicos que pueden convertirse fácilmente en gas a bajas temperaturas. Algunos productos comunes que contienen COV son pinturas, decapantes de pintura, productos de limpieza, pesticidas, fotocopiadoras e impresoras, gasolina, pegamentos y adhesivos, y marcadores permanentes.

**Compuestos Orgánicos Semivolátiles (COSV)**  
Un grupo de productos químicos que generalmente permanecen como líquidos o sólidos a bajas temperaturas y pueden asentarse en superficies al aire libre. Algunos productos comunes que contienen COSV son pesticidas, productos a base de aceite y retardantes de fuego.

Source: EPA.gov

\*Antiguo sitio de Houston Wood Preserving Works

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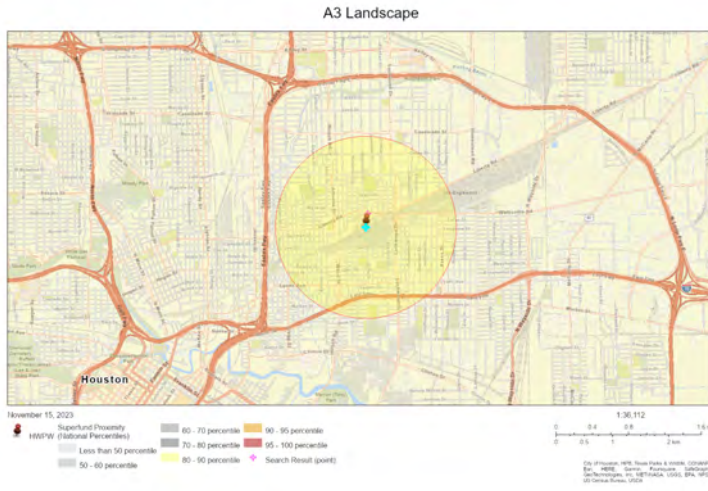
# Appendix 6 | EJSCREEN Report

## EJScreen Community Report

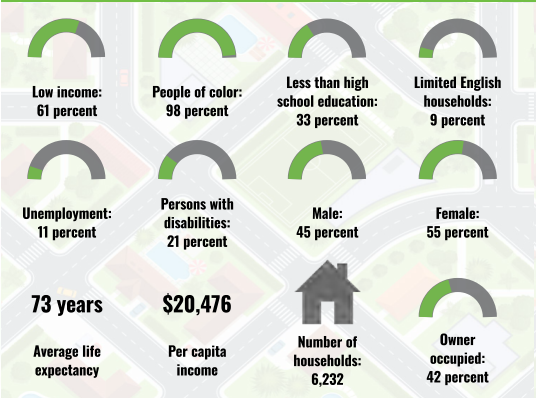
This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

## Houston, TX

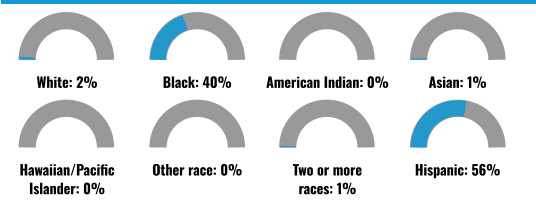
1 mile Ring Centered at 29.785255,-95.321478  
Population: 16,782  
Area in square miles: 3.14



### COMMUNITY INFORMATION



### BREAKDOWN BY RACE



### BREAKDOWN BY AGE



### LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	47%
Spanish	51%
Other and Unspecified	1%
<b>Total Non-English</b>	<b>53%</b>

### LIMITED ENGLISH SPEAKING BREAKDOWN



Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race. Source: U.S. Census Bureau, American Community Survey (ACS) 2017-2021. Life expectancy data comes from the Centers for Disease Control.



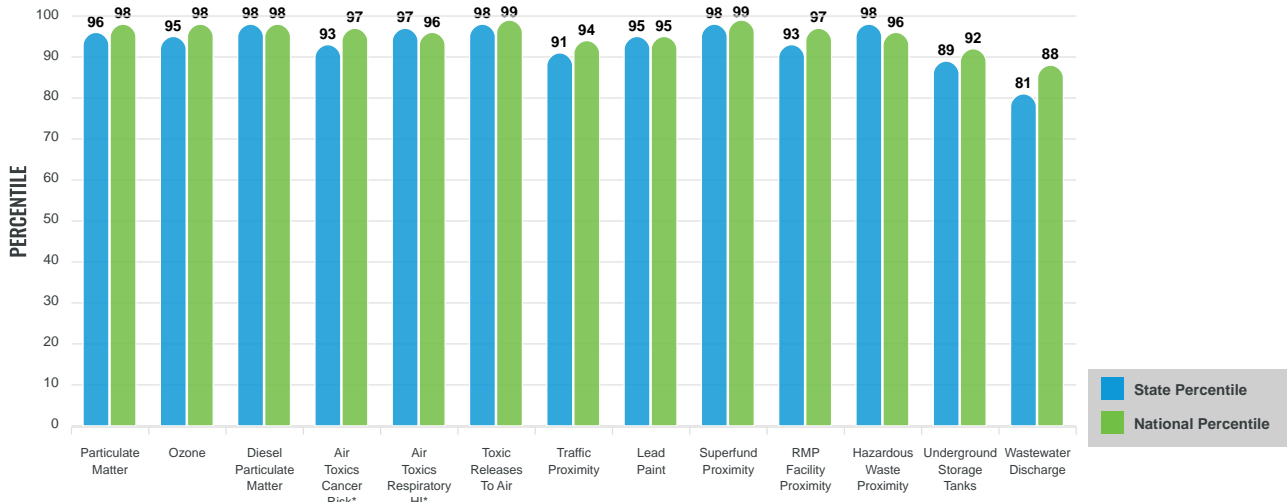
## Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the [EJScreen website](#).

### EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

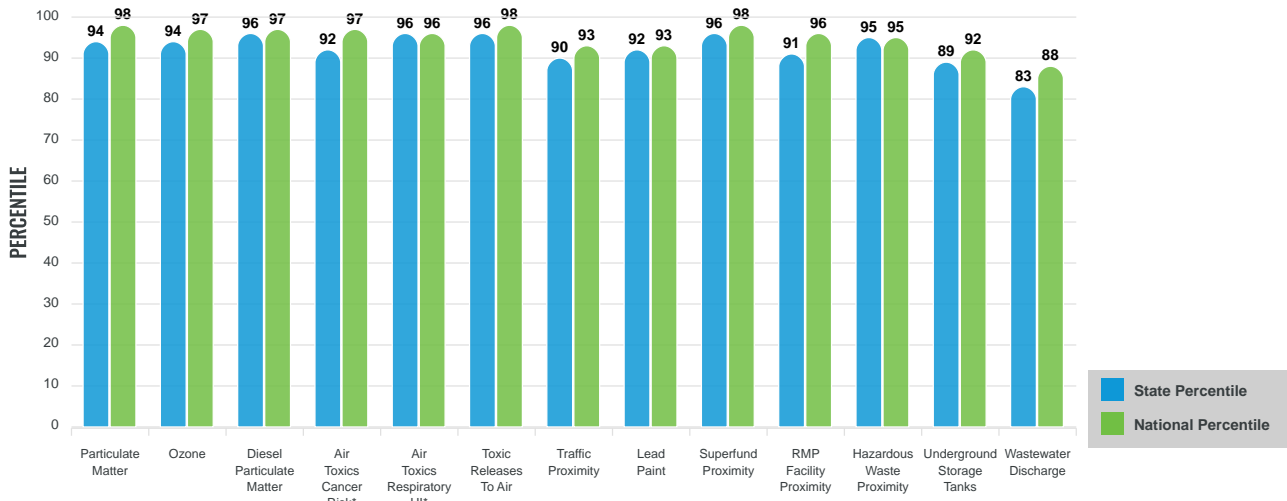
EJ INDEXES FOR THE SELECTED LOCATION



### SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for 1 mile Ring Centered at 29.785255,-95.321478

## EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
<b>POLLUTION AND SOURCES</b>					
Particulate Matter ( $\mu\text{g}/\text{m}^3$ )	10.4	9.11	92	8.08	96
Ozone (ppb)	68.9	64.6	79	61.6	91
Diesel Particulate Matter ( $\mu\text{g}/\text{m}^3$ )	0.569	0.218	99	0.261	93
Air Toxics Cancer Risk* (lifetime risk per million)	34	28	44	25	52
Air Toxics Respiratory HI*	0.41	0.3	80	0.31	70
Toxic Releases to Air	50,000	12,000	93	4,600	98
Traffic Proximity (daily traffic count/distance to road)	340	150	90	210	85
Lead Paint (% Pre-1960 Housing)	0.49	0.17	88	0.3	73
Superfund Proximity (site count/km distance)	1.2	0.085	99	0.13	98
RMP Facility Proximity (facility count/km distance)	1.1	0.63	82	0.43	89
Hazardous Waste Proximity (facility count/km distance)	3	0.75	95	1.9	81
Underground Storage Tanks (count/km <sup>2</sup> )	3.8	2.3	78	3.9	72
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.012	0.91	73	22	69
<b>SOCIOECONOMIC INDICATORS</b>					
Demographic Index	80%	46%	91	35%	95
Supplemental Demographic Index	28%	17%	87	14%	93
People of Color	98%	58%	92	39%	95
Low Income	61%	34%	85	31%	89
Unemployment Rate	11%	5%	85	6%	84
Limited English Speaking Households	9%	8%	71	5%	84
Less Than High School Education	33%	16%	83	12%	93
Under Age 5	6%	6%	53	6%	60
Over Age 64	13%	14%	53	17%	39
Low Life Expectancy	25%	20%	94	20%	91

\*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/haps/air-toxics-data-update>.

### Sites reporting to EPA within defined area:

Superfund .....	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities .....	1
Water Dischargers .....	9
Air Pollution .....	2
Brownfields .....	6
Toxic Release Inventory .....	1

### Other community features within defined area:

Schools .....	8
Hospitals .....	1
Places of Worship .....	47

### Other environmental data:

Air Non-attainment .....	Yes
Impaired Waters .....	Yes

Selected location contains American Indian Reservation Lands* .....	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community .....	Yes
Selected location contains an EPA IRA disadvantaged community .....	Yes

## EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS					
INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	25%	20%	94	20%	91
Heart Disease	8.1	5.9	86	6.1	85
Asthma	10.8	9.2	93	10	75
Cancer	4.7	5.2	41	6.1	21
Persons with Disabilities	20.4%	12.3%	90	13.4%	87

CLIMATE INDICATORS					
INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	8%	10%	66	12%	56
Wildfire Risk	0%	30%	0	14%	0

CRITICAL SERVICE GAPS					
INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	28%	15%	82	14%	87
Lack of Health Insurance	32%	18%	88	9%	98
Housing Burden	Yes	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

Footnotes

Report for 1 mile Ring Centered at 29.785255,-95.321478



## Appendix 7 | EPA Kashmere Gardens CIP

In March 2023, the EPA released the Fifth Ward/Kashmere Gardens UPRR Site Community Involvement Plan (CIP). The CIP is designed to meet the legal requirements established by Congress through the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA). The primary goals of the CIP are to ensure that community members in the Fifth Ward and Kashmere Gardens near the former HWPW Site are informed about EPA's activities, provided opportunities to influence site investigations and decisions, and assured that their concerns are considered throughout the decision-making process. The CIP aims to facilitate active community engagement throughout the process, emphasizing the importance of public involvement for the success of the project.

The document acknowledges the dynamic nature of community involvement, presenting the CIP as a "living document" that can be updated to adapt to evolving conditions and community needs. Guidelines stress the importance of EPA's objectivity, collaboration with partners, and clarity in communication. The document outlines the role of Union Pacific in supporting EPA's community involvement objectives.

The EPA Fifth Ward/Kashmere Gardens UPRR Site CIP can be found [here](#), in the documents section of the [EPA project website](#).