



TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

Ready, Set, Permit!

Expanding Permit Search Portal Access and Capabilities

Award Category: Digital Experience: Agency/Program Solutions

State: Texas

Project Title: Expanding Permit Search Portal Access and Capabilities

Project Beginning Date: July 2024

Project End Date: March 2025

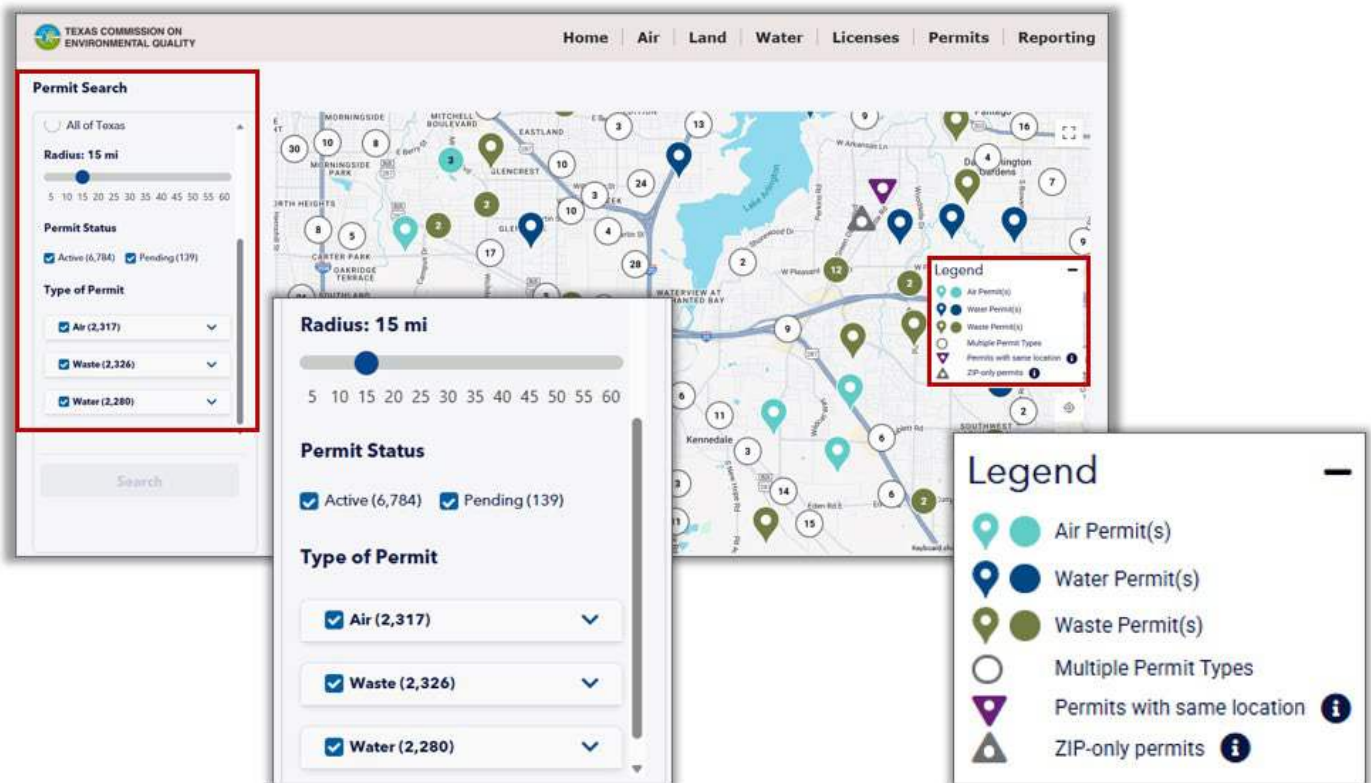
Contact: Patrick McSorley, Assistant Deputy Division Director, Information Resources, Texas Commission on Environmental Quality

EXECUTIVE SUMMARY

In March 2025, the Texas Commission on Environmental Quality (TCEQ) launched a map-based search portal to facilitate the public in finding regulated facilities and their related permits.

Through this portal, visitors can find basic information about what TCEQ-regulated activities are going on in their area—and then drill down to find even more detailed information. Search options include keywords, address, area and proximity, permit status, and type of permit. This portal is designed to enhance accessibility and functionality, allowing internal and public users to search for air, water, and waste permits in addition to relevant investigation history of permitted entities.

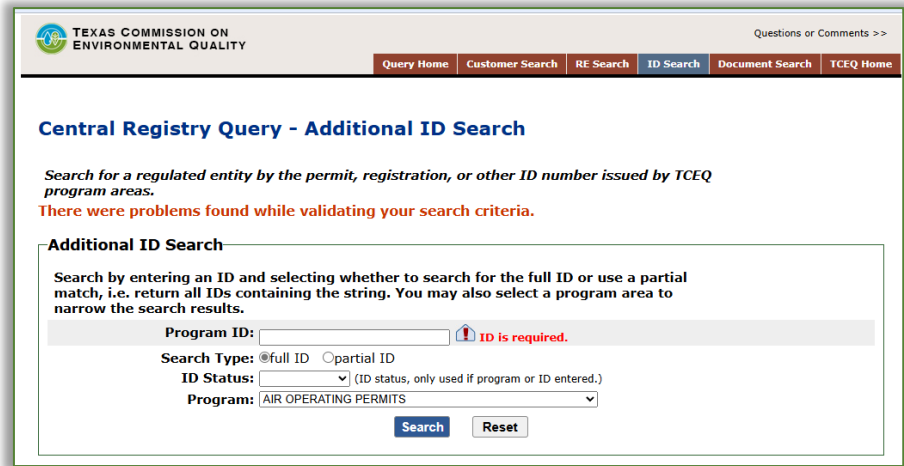
Since its launch, over 3,000 users have accessed the new permit search portal.



ISSUE

In 2023, a report issued by the Texas Sunset Commission, the Texas agency charged with evaluating the need for and value of state programs and services, found that TCEQ’s online permit search function was not intuitive for users and was in need of improvements for accessibility and functionality.

The legacy permit site required users to already have the Program ID, Regulated Entity Number, or Customer Number in order to execute their search, and did not account for users who were in their initial stages of research. Thus, the primary users of the permit portal were TCEQ staff and those familiar with systems and processes of the agency. Additionally, the search results of the legacy system do not provide information in a digestible manner and require users to navigate multiple pages to obtain the desired information.



To address the challenges of the legacy system, TCEQ developed and launched a new, modern permit search portal to provide:

- An intuitive user experience requiring no previous knowledge of permits.
- A modern, mobile-friendly search portal with map capabilities yielding fast results.
- Search results presenting relevant information in a digestible manner.
- An accessible site for the public to use and improve agency transparency.

WHY THE TCEQ PERMIT SEARCH PORTAL MATTERS

In order to make informed decisions regarding their residences and businesses, as well as local advocacy efforts, constituents require access to information regarding air, waste, and water permits. In the discovery phase of the project, three persona types were identified to guide the new portal goals.

<p>Public</p>	<ul style="list-style-type: none"> • Live near a site that suddenly has a lot of activity, but there is no visible information posted. • Notice a potential nuisance condition, such as odor, and suspect it’s coming from a specific site. • Want to be informed about regulated activities in an area as it may relate to any health concerns. • Want to oppose the granting of a permit to an applicant.
<p>Current Business Stakeholders</p>	<ul style="list-style-type: none"> • Want to track the status of their permits, investigation reports, and/or complaints received in one convenient online portal. • Learn of a new regulated entity opening in proximity and want to track

	permit progress.
Future Business Stakeholders	<ul style="list-style-type: none"> Want to research best business location by identifying existing permitted sites through permit information.

The new portal provides a modern user experience while improving transparency by making agency information readily available.

HOW THE TCEQ PERMIT SEARCH PORTAL IS DIFFERENT

The modernization project is mobile-friendly and incorporates enhanced capabilities that were previously not universal across Texas agency portals. The search capabilities incorporate Google Maps API integration and keyword search functionality previously not available. Today, users can search by location, company name, or general identifiers such as activity type.

The search results are displayed in similar search categories (violations, history, status), allowing the user to digest information more easily. Additionally, the permit search portal allows users to save and print information by permit in PDF.

HOW THE TCEQ PERMIT SEARCH PORTAL IS UNIVERSAL

The rise in technology access and innovation requires state agencies to meet the demands of their constituents quickly and efficiently. TCEQ's search portal modernization is an example of implementing a technology solution that helps state agencies increase transparency and accountability. The new capabilities of the portal integrate Google functionalities using existing data to display information in new formats.

The upgraded permit portal aligns with NASCIO CIO priorities of Legacy Modernization and Digital Government and Services. TCEQ aligned with these national goals of leveraging modern technology to accelerate process, improving transparency and eliminating unnecessary delays in the modernization of publicly available sites and portals.

IMPLEMENTATION

THE TCEQ PERMIT SEARCH PORTAL ROADMAP

Under the Texas Department of Information Resources (DIR) Shared Technology Services (STS) program, TCEQ partnered with Deloitte as part of the Technology Solution Services (TSS) to modernize its permit search function and incorporate new capabilities. Over the course of eight months, a new portal was built following an agile methodology.

The Deloitte – TSS team collaborated closely with TCEQ to develop the user interface and prioritize features during sprint planning sessions. This iterative process ensured that development aligned with TCEQ's requirements and expectations. During product demos, the team identified necessary changes and incorporated multiple communication checkpoints throughout the project to continuously address agency feedback.

The Deloitte – TSS team maintained open communication with TCEQ during the project, facilitating a collaborative environment. This included regular feedback sessions and checkpoints to discuss progress, address any issues, and make necessary adjustments.

The implementation of the TCEQ Permit Search Portal enables other agencies under the STS program to repurpose the Lightweight Integrated Framework and Tools (LIFT) framework to customize and innovate their applications as part of their modernization efforts. This framework serves as an accelerator for building modern web and mobile applications.

By the end of the project, TCEQ had a robust, user-friendly permit search portal that is scalable, is incorporated into the latest technological advancements, and provides enhanced customer satisfaction.

INVOLVED STAKEHOLDERS

The participation of key stakeholders was instrumental throughout the project to ensure a comprehensive solution.

Close collaboration between the Deloitte – TSS Application Development team, TCEQ External Relations Division (ERD) Web Usability Team, TCEQ Information Resources Division (IRD), and TCEQ Sunset Division was essential to validate the key items affecting each stakeholder. This collaborative approach ensured that the diverse needs and requirements of these divisions were addressed, resulting in a well-rounded and effective solution.

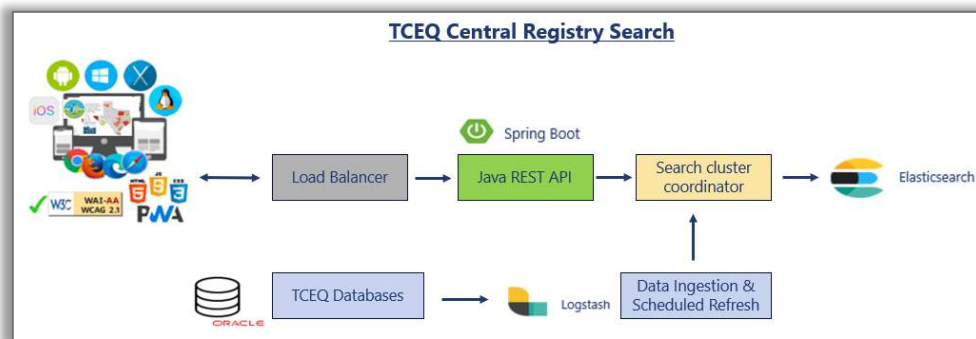
During Usability Testing, Deloitte – TSS worked closely with ERD’s Web Usability Team to solicit feedback from public users. This feedback was instrumental in identifying areas for improvement and implementing key features related to navigation and design. The insights gained from public users helped refine the user interface, making it more intuitive and user-friendly.

Lastly, during User Acceptance Testing and Integration Testing, Deloitte – TSS collaborated with TCEQ to validate the system's functionality and performance end-to-end. This phase involved rigorous testing to validate that all components of the system worked seamlessly together and met the specified requirements. A soft launch was performed involving TCEQ’s employees, allowing for a controlled rollout and the opportunity to address any final issues before the full public launch.

TCEQ PERMIT SEARCH PORTAL SOLUTION

Deloitte – TSS optimized the user experience through enhanced search functionality, modern visual design, and an intuitive user interface. The modernization of the Permit Search Portal was achieved over the span of eight months, focusing on three primary areas: Modern and Scalable Architecture, Interactive Application Solution, and Advanced Search Portal Capabilities.

Modern and Scalable Architecture: To provide a visually appealing search experience, the Google Maps API integration was utilized to provide dynamic geospatial searches. Elasticsearch enables fast, real-time filtering across large datasets, powering advanced search functionality for users, both internal and external. The Spring Boot (Java) backend provides a scalable and secure application infrastructure. Lastly, the LIFT Framework, a framework that facilitates faster UI development, provides a responsive and accessible user experience.

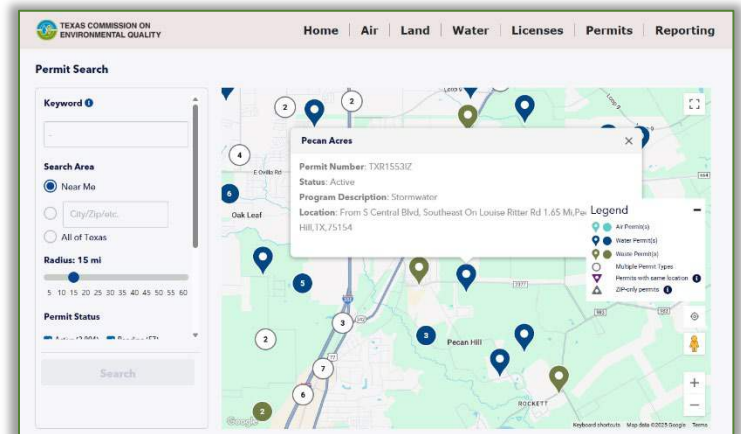


Interactive Application Solution: A customized application solution transformed the Permit Search functionality. The Permit Search function enables all-in-one queries controlling for attributes such as permit type and status. Additionally, a keyword search function was integrated, using seven different categories of information, including permit, entity name and permit keywords to provide comprehensive search results.

Advanced Search Portal Capabilities: TCEQ modernized the Permit Search Portal by incorporating new functionalities that previously were not available, improving the user experience. As part of the search results, an automated custom

TCEQ PERMIT SEARCH PORTAL SOLUTION

clustering of map pins according to media types (air, water and waste) provides users with a visual representation of their search results. The portal is mobile-compatible, providing a comfortable and accessible experience for “on the go” users. To improve information access, the search portal provides a customized PDF report that is easily downloadable. The search criteria are saved in URLs to enable easy sharing and collaboration.



IMPACT

KEY BENEFITS OF THE TCEQ PERMIT SEARCH PORTAL

The new permit portal, with its mobile-friendly capability, enhances transparency, usability, and accessibility for the public by providing comprehensive details on permits, registrations and authorizations of regulated facilities, giving the public access to information on any investigations conducted, notices of violation issued, complaints received, compliance history ratings, and actions taken by the commission.

The Modern and Scalable Architecture, Interactive Application Solution and Advanced Capabilities have led to the following benefits:



Expanded accessibility for more than 3000 public users



Mobile compatible portal with responsive design



TCEQ **can adapt the system to future needs** without major redevelopment



12 features aligned with TCEQ branding



Reduced reliance on manual searches by automating data retrieval



Automated **data retrieval across 194K+ permits** and large datasets



Customized report capabilities with exportable functionality



Easily accessible information improves **transparency and trust in agency**

This project also establishes a standard and template for public-based location search that can be used across other TSS projects. This directly aligns with the strategic goal of reusing tools and solutions across DIR. The new permit search portal supports both Texas and national goals of building out permitting capacity to support infrastructure buildout, resiliency, and government transparency.

KEY BENEFITS OF THE TCEQ PERMIT SEARCH PORTAL

The LIFT framework used in the TCEQ Permit Search Portal project serves as an accelerator for building modern web and mobile applications. It is designed to create user-friendly, cross-browser compatible, and accessibility-compliant applications that work seamlessly across both mobile and desktop platforms. One of the key advantages of LIFT is its ability to support multiple mobile platforms, including iOS and Android, making it a versatile tool for developers.

The implementation of the TCEQ Permit Search Portal enables other agencies in the STS program to repurpose the LIFT framework to customize and innovate their applications as part of their modernization efforts.

HOW WE KNOW

The legacy permit search function was underutilized by the public and did not provide information in an intuitive manner. The new user experience and visual changes highlight the enhanced capabilities of the new permit search portal.

The modernized permit search portal provides users with the following information:

- ✓ Regulated activities authorized at specific sites.
- ✓ Relevant permits held by a regulated entity.
- ✓ Regulated entity history of compliance with TCEQ by providing complaints received, investigations conducted, and Notices of Violation issued at facilities for the previous five years.
- ✓ Information on pending permits and regulated activities the permit will authorize.
- ✓ Direct TCEQ contact information.

To date, over 3,000 users have experienced the new search portal, and TCEQ is confident this number will only increase.

WHAT'S NEXT FOR TCEQ AND PERMIT SEARCH PORTAL

TCEQ is currently working on expanding the portal's capabilities. Building upon the Sunset Advisory Committee's recommendation to provide comprehensive information to the public, future enhancements of the portal will include:

- Expanded document availability within the portal.
- Integration with additional TCEQ systems.
- Scalable development for future technology improvements and capabilities.

The future enhancements will address the [White House's Council on Environmental Quality \(CEQ\)](#) call for modernizing the technology used for environmental review and permitting process for infrastructure projects. As agencies are provided with guidance on the technology, they can use to digitize permit applications, expedite reviews, and enhance interagency coordination on projects, Texas is well positioned to lead the nation in permitting transparency.

