

ELEVATE YOUR GIS DEVELOPMENT USING SUPERIOR AERIAL IMAGERY

A GUIDE FOR UNDERSTANDING THE BENEFITS OF INTEGRATING NEARMAP INTO GEOCORTEX

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Fort Collins, CO

INTRODUCTION

Harness the power of Nearmap's high-resolution aerial imagery and build beautiful, intuitive applications inside your Geocortex framework. With no coding required, easily integrate Nearmap imagery into Geocortex Essentials Viewer for HTML5, as well as Geocortex Web. Together, Nearmap and Geocortex improve asset management performance, enhance data collection capabilities, and provide more depth and flexibility to your workflows within your GIS infrastructure. Nearmap offers users the ability to see finely detailed 2D imagery and 3D location intelligence. By providing imagery that is both current and historical in nature, GIS professionals gain accurate, real world context, and are empowered to build insightful applications, saving their users time and money. This guide offers critical understanding of Nearmap imagery within Geocortex by highlighting use cases applicable to local government, utilities, energy, telecommunications, architecture, engineering, construction, NGO's, commercial industries, and many more.

NEARMAP AND GEOCORTEX ESSENTIALS VIEWER FOR HTML5 (GVH)

By integrating Nearmap imagery into Geocortex Essentials Viewer for HTML5, you increase your ability to design visually stunning sites and viewers within the Geocortex framework. Using Nearmap imagery as a basemap under map services allows you to toggle on crystal clear, current imagery for your projects. Nearmap imagery can also be used in all configured web mapping applications for tablet, smartphone, and desktop computer.

For example, Port of Tacoma (PoT), WA uses our WMS to bring in Nearmap vertical imagery as their default basemap in their Geocortex Essentials viewer. PoT developed a primary, private viewer inside Geocortex Essentials, with ArcGIS Server services, containing all operational data that is utilized by all departments: Operations, Real Estate, Security, Environmental, Marketing, and Commercial.

Figure 1 below shows the latest Nearmap imagery being used as a basemap for vessel and property data layers for the Port of Tacoma area.

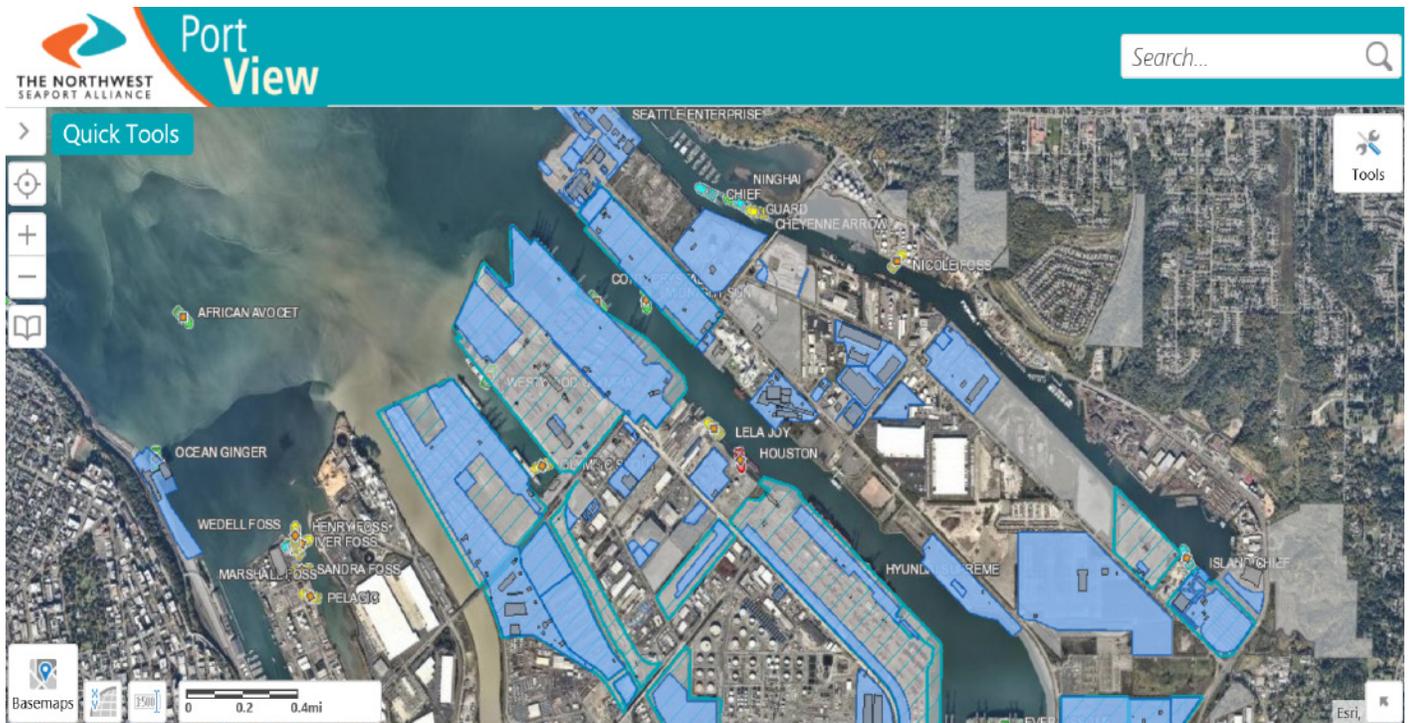


Figure 1: Port of Tacoma, WA vessel and property data layers inside Geocortex Essentials (Image provided by Port of Tacoma)

PoT manages terminal operations and uses Nearmap imagery primarily for "Vision Planning." Nearmap's current, high-resolution imagery allows PoT to increase their knowledge of the land and then carefully—and more accurately—plan out what certain areas can be used for: rail yard development, road development, facility construction and renovation, and much more.

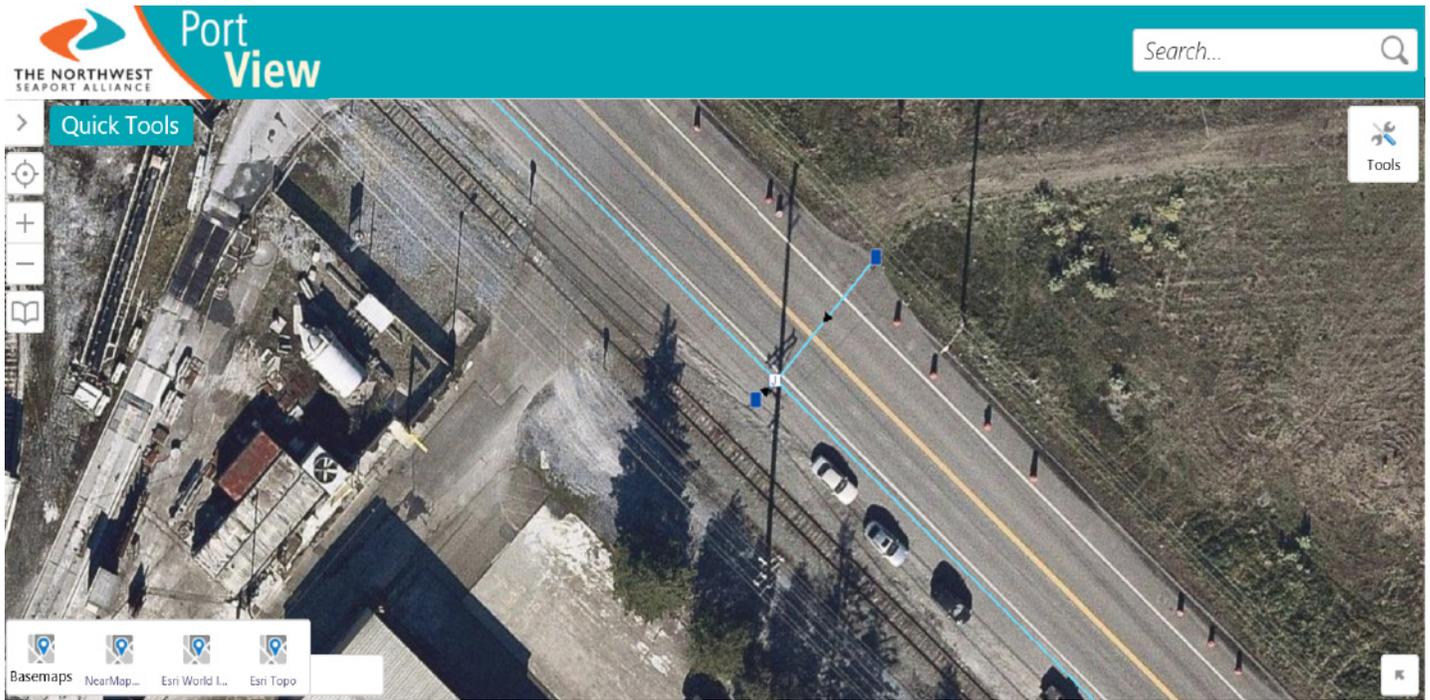
Leasing owned property is a critical element to PoT's business; their real estate and commercial teams use Nearmap's accurate imagery to frequently visit sites and verify property boundaries. By combining Nearmap imagery and Geocortex Printing, PoT's design team creates PDF's for proposals to help clarify property boundaries to potential customers.

When it comes to effectively managing properties, such as terminal and facilities leases, Real Estate and Operations staff use the Geocortex viewer to boost their understanding on a variety of topics regarding terminal operations, such as: leased and available properties, truck routes, auto warehousing facilities, railway use, cargo and shipping container storage areas, and ship schedules. Even more importantly, they can identify which areas will be best suited for potential clients.

The Environmental Department relies heavily on Geocortex to make site plans. Using Nearmap's current and historical imagery, they can easily showcase what has been done to mitigate construction in the past, how habitat sites have been maintained, and pinpoint the environmental improvements that have taken place.

PoT is able to align Nearmap's consistent, high definition imagery with their deep, configurable GIS data within Geocortex. Figure 2 highlights how closely you can zoom in on an area of interest using Nearmap imagery, without pixelation, and how it accurately aligns with PoT's stormwater data layers.

Figure 2: Nearmap imagery being used as a basemap for stormwater data layers, zoomed in for detail



MOBILE APPLICATION FOR REMOTE ASSET MANAGEMENT

Creating Geocortex mobile applications around Nearmap imagery can greatly improve data collection and asset management capabilities. Doing inventory on new assets can be a hassle, especially when a location could be behind fences or at the bottom of steep ravines. Being able to view highly detailed imagery and mark it up with feature edits straight to the imagery layer can provide a more accurate asset data collection technique.

With the ability to monitor assets remotely, the benefits to field crews include reducing or planning more efficient site visits, make feature edits straight to the imagery layer, as well as collecting and/or verifying precise asset locations and data. Nearmap offers all local and state plane projections to make sure our imagery accurately aligns with your location.

For instance, Coachella Valley Water District uses Nearmap imagery to verify asset GPS locations enabling field staff and contractors to improve their inventory management and routine maintenance on their network.

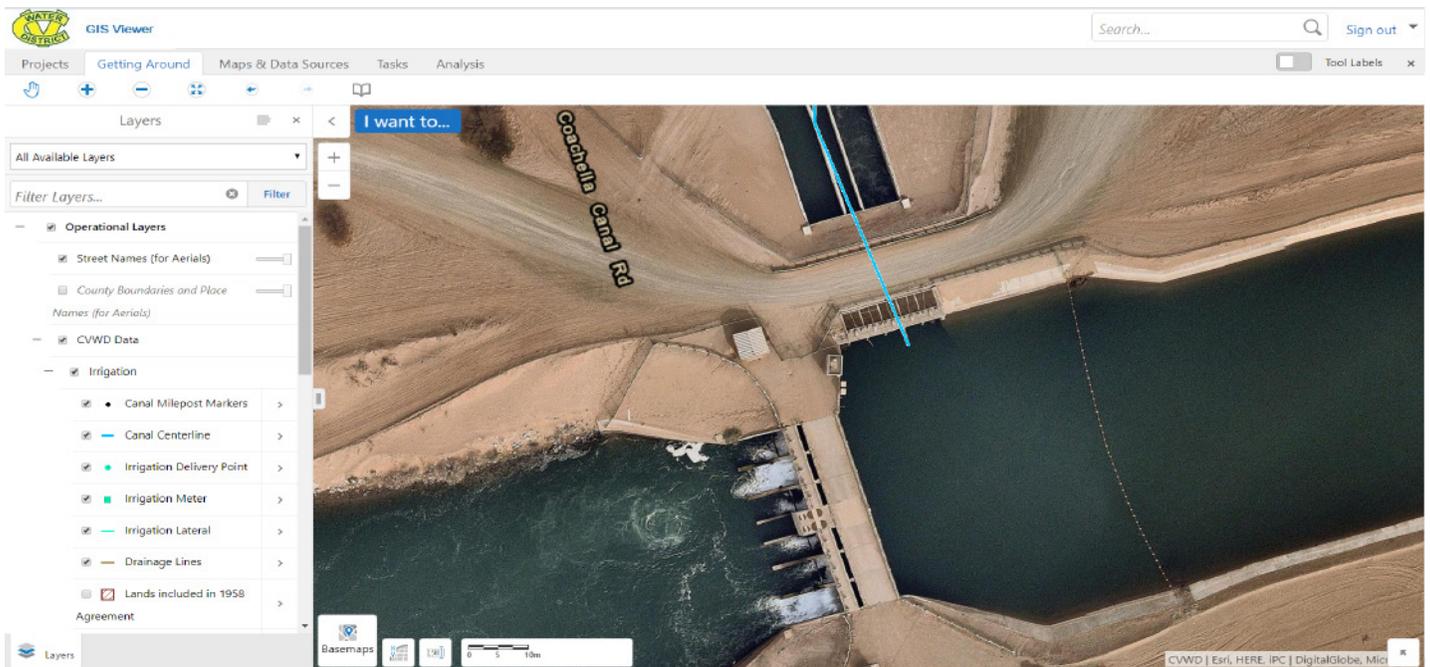


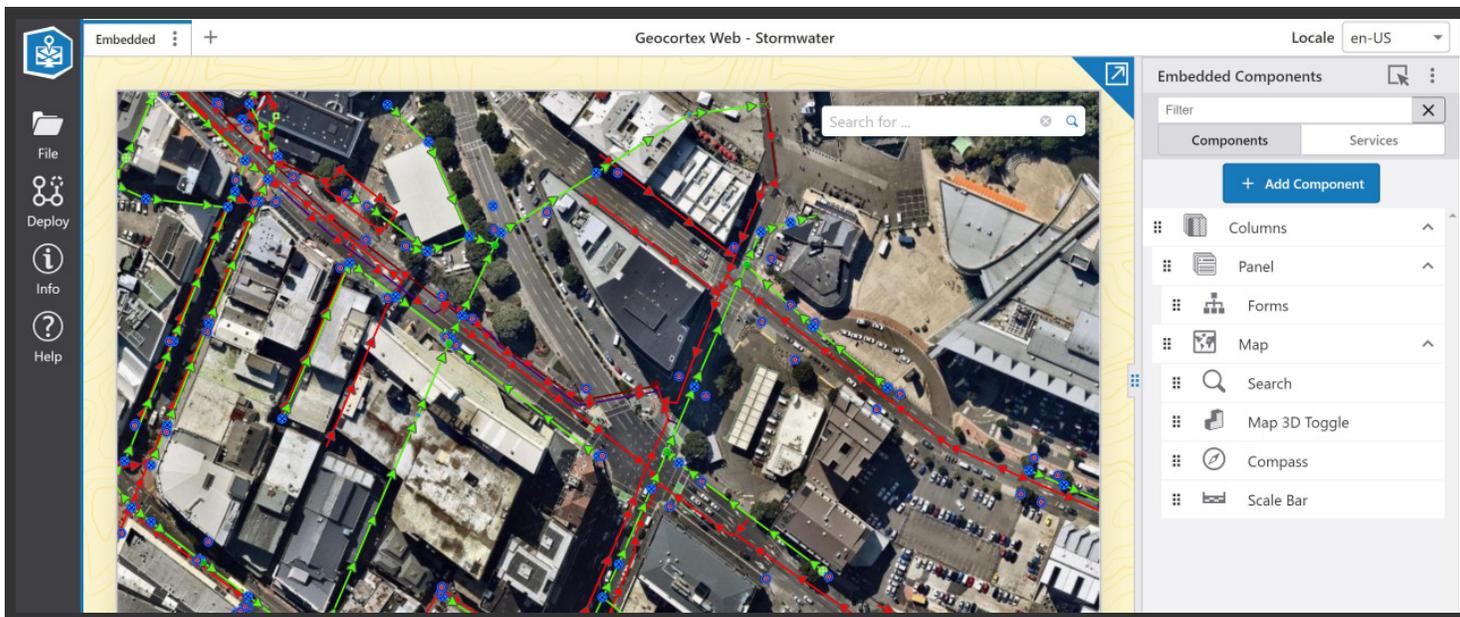
Figure 3: Coachella Water Valley District's Geocortex Essentials Viewer using Nearmap imagery

SLEEK, FAST, FLEXIBLE FRAMEWORK

Geocortex Web provides GIS professionals a platform to configure visually appealing, powerful applications for a wide variety of browsers. Combine Geocortex Web Designer with Nearmap's brilliant imagery to control the look and feel of your application synchronized with real world context. With endless possibilities available to you, propel your web based maps and data to the next level of efficiency.

Figure 4 features detailed stormwater data layers activated on top of Nearmap imagery inside a Geocortex Web application. Aligning with the extensive GIS data inside Geocortex, Nearmap provides an accurate, up-to-date look at the landscape when planning new projects. Identify locations and conditions of manholes, chambers, sumps, lamp holes, inlet valves, outlet valves and locate stormwater/wastewater piping and directionality.

Figure 4: Stormwater GIS data layers on top of Nearmap imagery basemap in Geocortex Web



By using Nearmap imagery, you can quickly assess if there will be any construction or maintenance obstacles pertaining to buildings, roads, sidewalks, signage, line markings, and vegetation. You can determine the impact new development or construction might have on the environment and neighboring communities.

Using high-resolution imagery and GIS data, gain a greater understanding of how a new development can affect water runoff and flooding. Track water behavior with Nearmap's historical imagery to view any changes that have taken place. Additionally, map out routes for equipment moves and traffic redirection in and around a project site. Identify areas to expand piping and use that data to better adhere to code compliance and permitting regulations.

Geocortex Web also provides you the ability to seamlessly display 2D and 3D map data providing the user even more perspectives for their cutting edge applications.

3D

Nearmap's 3D location intelligence provides rich data for an end user with an all-encompassing, 360 degree view, allowing you to get closer than ever before to your assets and project sites. Rotate the angle, zoom in and out, and conduct measurements to pinpoint the exact geographical location of your assets. View on and around tall buildings, getting access to areas other types of imagery can't accurately capture. Plan community developments by integrating our 3D data into your proposals.

Using ArcGIS Online, you can easily bring Nearmap 3D into Geocortex Web. With the ability to represent a city in virtual reality to exact scale, you can build models for bridges, highways, railways, and more, all while highlighting any environmental, transportation, or construction risks. 3D data is particularly useful for creating plans for emergency management, event management, and public safety. Additionally, 3D content provides the ability for telecommunications companies to identify line of sight for cell tower installations.

Accelerate your GIS capabilities within Geocortex with an immersive, efficient way to build new applications with rich, data-driven content.

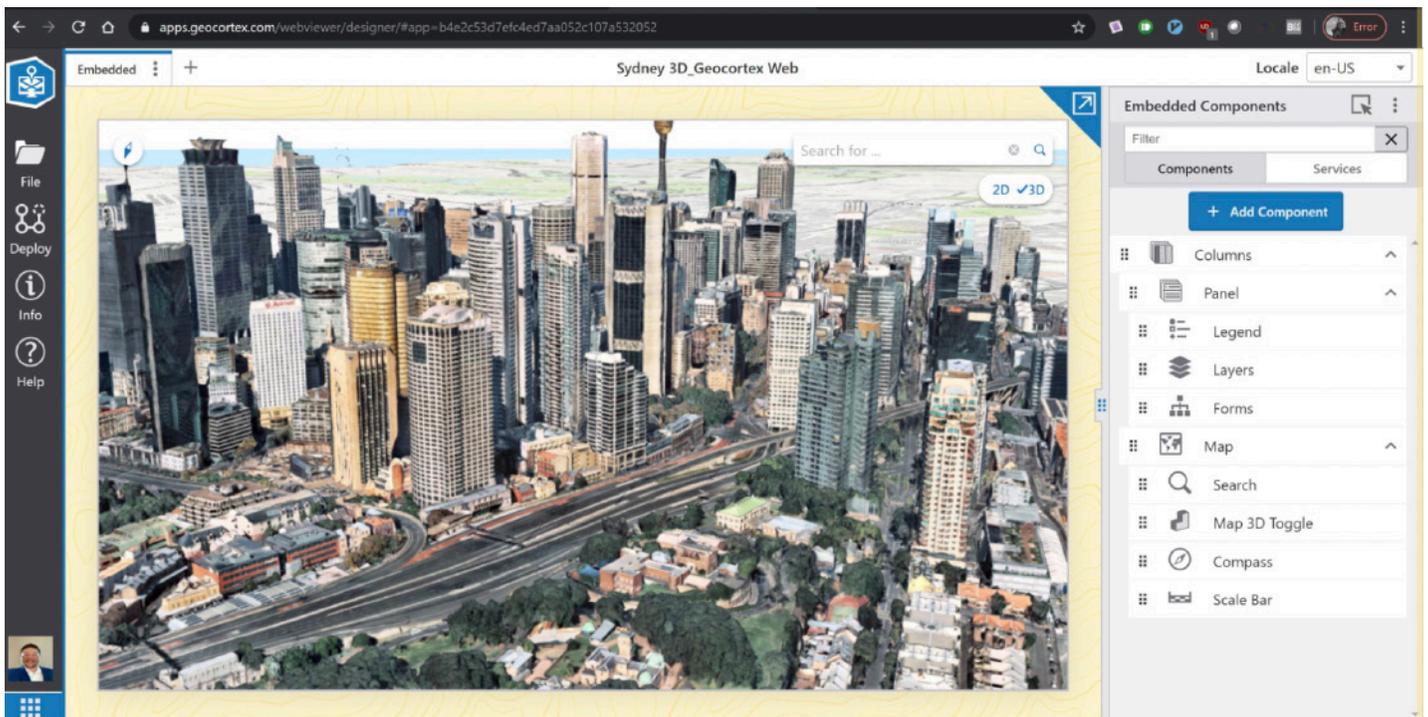


Figure 5: 3D Geocortex Web application featuring Sydney's CBD

HISTORICAL IMAGERY

A key benefit of a Nearmap subscription is the ability to access historical imagery. Depending on the location, you can access image captures over multiple years and bring that historical context into Geocortex Essentials and Geocortex Web. Accurately comparing past imagery to present imagery is beneficial for many different use cases. For example: use the progression of historical captures to monitor ongoing construction projects (Figure 6), inspect sites for code compliance and permitting, view changes in asset health, identify wear and tear of transportation, and see how the environment is changing in relation to vegetation, agriculture, water reservoirs/runoff/flooding, and land erosion.

Appraisers can quickly view and identify additions or renovations for residential and commercial buildings to assess property value for tax purposes. Track new city developments including changes in property size, structural conditions and the surrounding environment. Insurance companies can compare and contrast imagery to view pool construction, solar panel installation, and trampoline or tree house additions to backyards.

Figure 6: Nearmap's historical imagery used for tracking long-term construction projects



Since Nearmap flies 2-3 times per year in over 430 urban areas, you get access to leaf-on and leaf-off imagery to formulate plans concerning foliage and seasonal changes. With multiple views, see under trees and around other vegetation encroachment to improve asset management, planning, and development capabilities.

An engineering consultancy customer of Nearmap is able to verify or prove certain conditions before and after construction (Figure 7). Since they work on a regular basis with regional utility companies for routine utility installations along roadways and highways for local municipalities, they often need to showcase the condition of a road to identify what cracks or fissures were in the road that were not a result of their work. Nearmap's crystal clear, historical imagery gives them the ability to prove truth on the ground as shown in Figure 7. The high-resolution aerial imagery frees them from any liability regarding existing transverse, longitudinal, and alligator cracking within the pavement sections during construction activities.

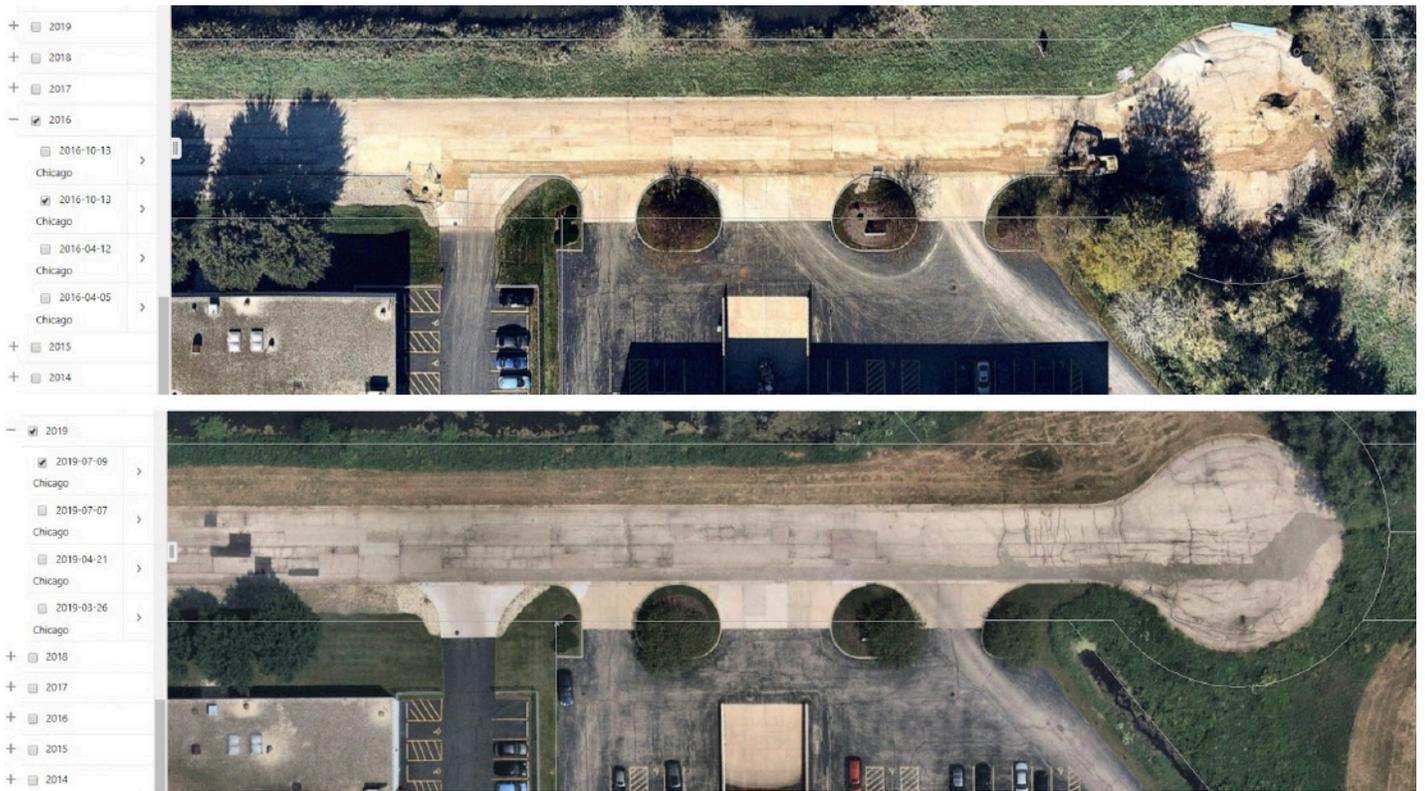


Figure 7: See the cracks on the ground and verify project sites before and after

NAVIGATE TIME AND VIEW HISTORICAL IMAGERY FOR YOUR LOCATION. LEARN FROM THE PAST TO PLAN FOR THE FUTURE.

NEARMAP PLATFORM & PRODUCTS

MapBrowser

Nearmap offers a web application platform and additional products beyond just an integration into Geocortex. MapBrowser, included as part of your Nearmap subscription, allows you the ability to view all current and historical high-resolution imagery. There are additional features within MapBrowser you can take advantage of, such as taking measurements (height/length/area/radius), adding simple KML files, viewing property and cadastre boundaries, determining elevation profiles, and inspecting different survey dates, side by side, for comparison. Choosing either Vertical, Oblique, or 3D data, you can export a variety of imagery formats into your preferred GIS platform.

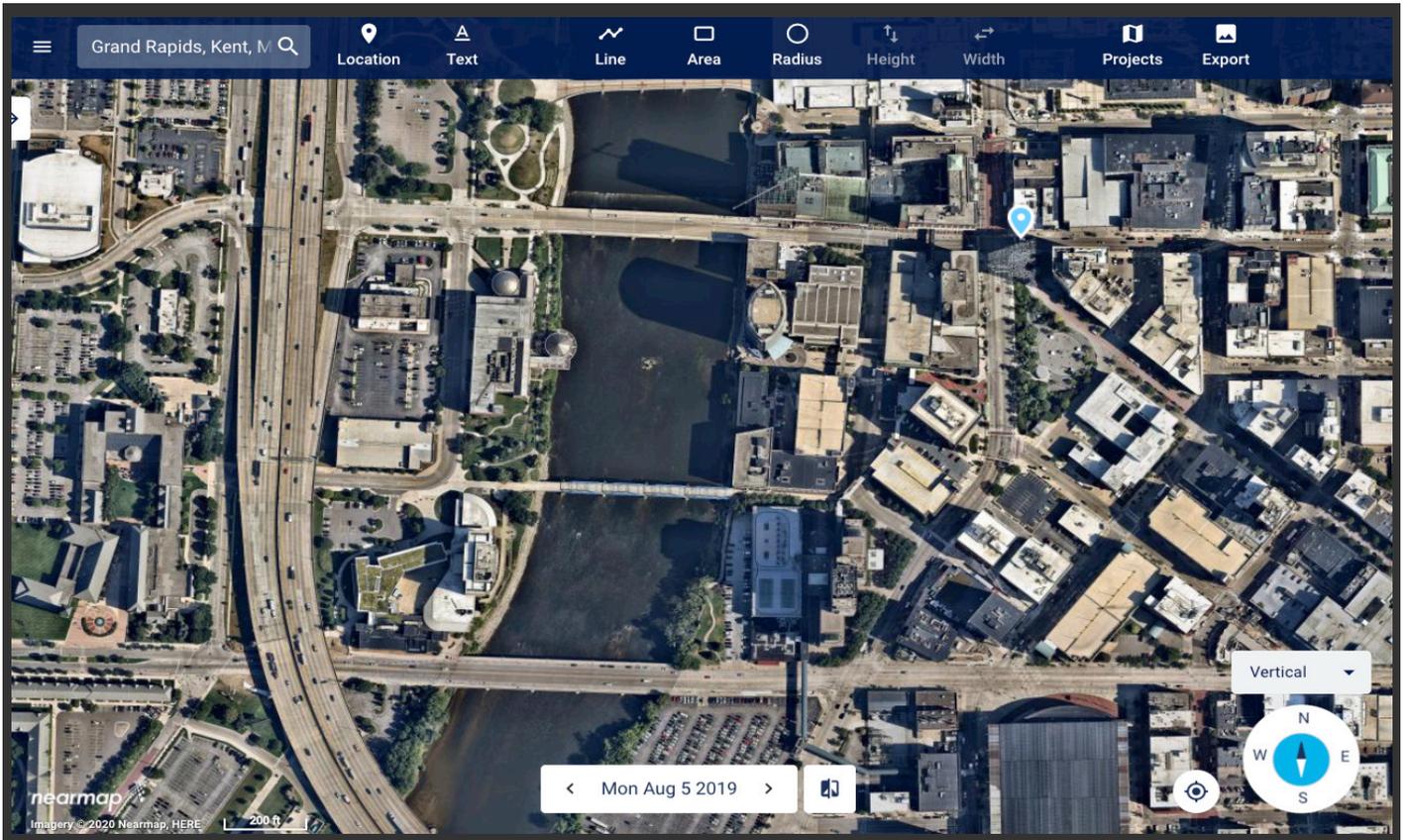


Figure 8: MapBrowser interface - type in an address and pull up a location instantly

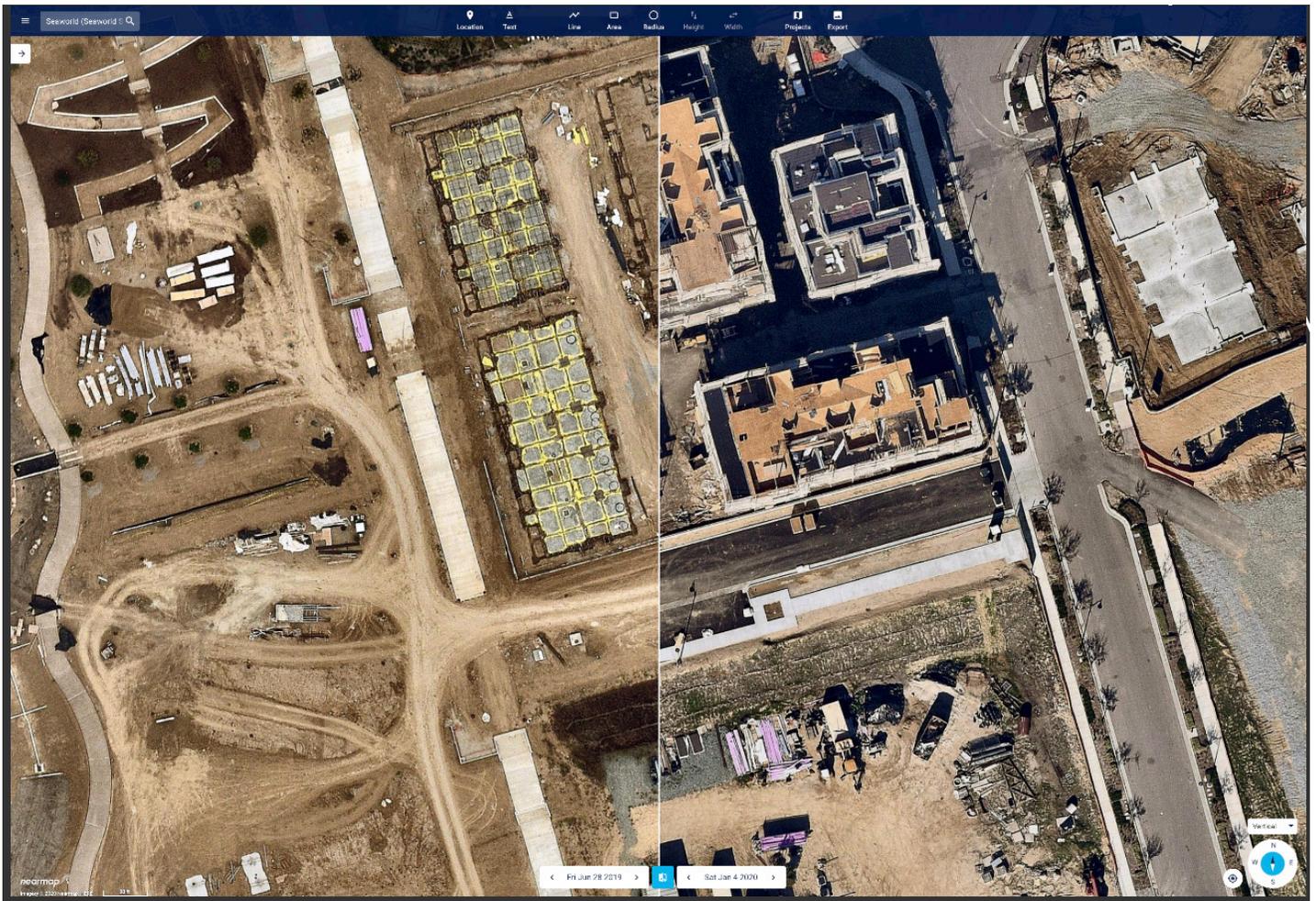


Figure 9: MapBrowser interface - comparing construction views from June 2019 to Jan 2020

Obliques & Panorama

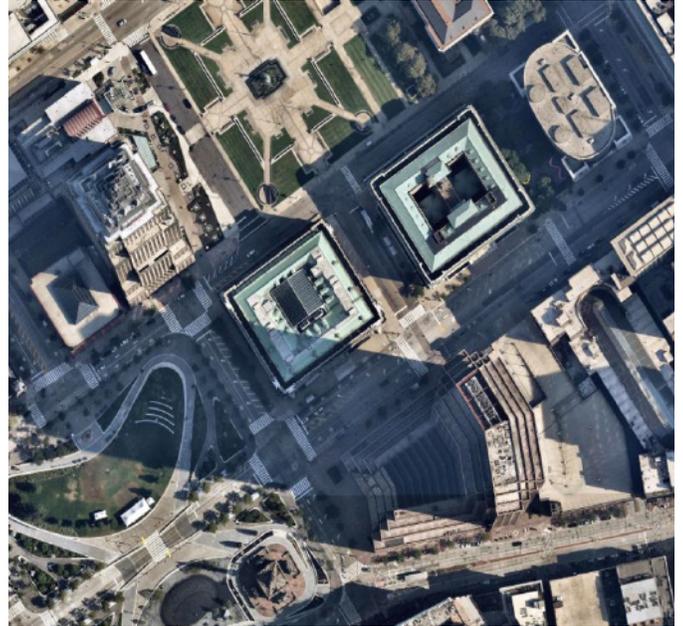
Oblique imagery is taken at a 45 degree angle, giving you a natural on-the-ground perspective. View your site from all cardinal directions - north, south, east, west - rather than only a top-down approach, giving you greater flexibility for managing assets in hard to view areas. Get a clearer line of sight for sidewalks, signage, and lighting. See under or around trees to track benches, fire hydrants, power lines, and surface runoff. Oblique imagery even allows you the ability to see into the tight alleyways and alcoves to view trash containers, parking locations, and evaluating fire code regulations for buildings. You can measure assets in oblique views to get more accurate height, width, area, and diameter.

Nearmap also supplies oblique imagery in a "Panorama View." Panorama stitches together oblique imagery, allowing for a smooth and seamless environment, all at the 45 degree angle. With Panorama imagery, scroll over large sections of terrain and metropolitan areas effortlessly, finding your assets within seconds. Panoramic imagery is also viewable in all cardinal directions. Find your public asset and continuously pan around the area of interest and zoom in for more detail.

Cleveland, Ohio - Captured 04 August 2019

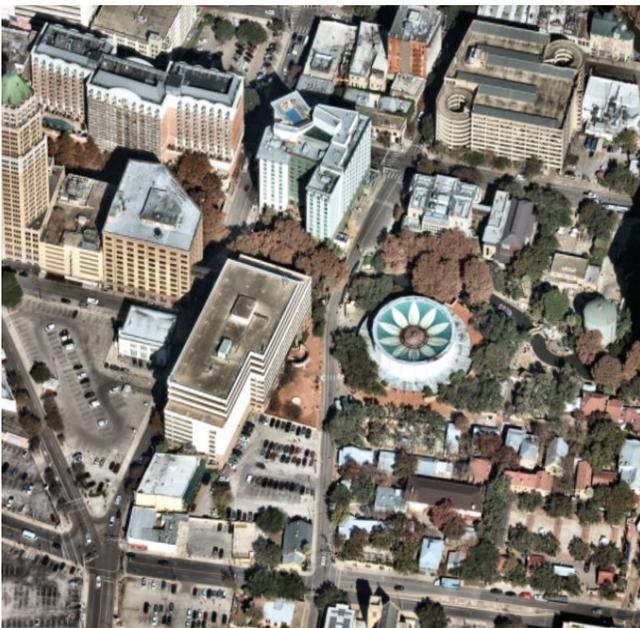


Oblique image

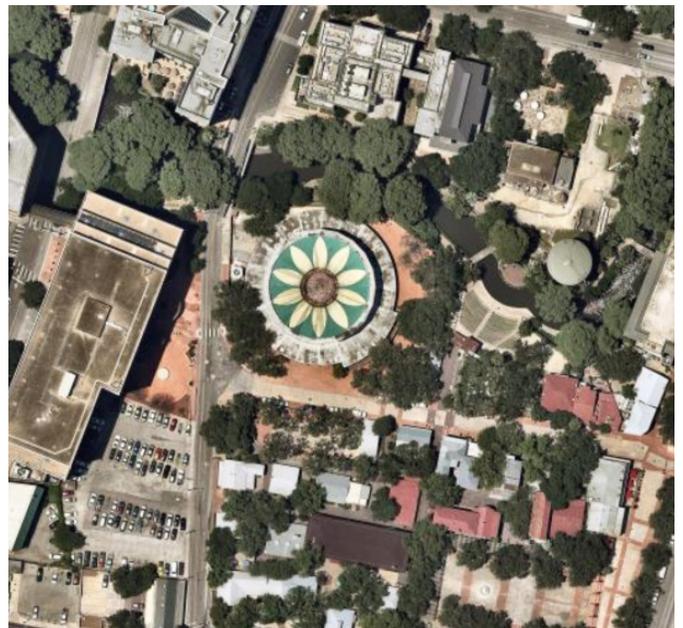


Vertical image

San Antonio, Texas - Captured 13 June 2019



Oblique image



Vertical image

HOW TO INTEGRATE NEARMAP INTO GEOCORTEX

Nearmap's aerial imagery is easily integrated into both Geocortex Essentials Viewer for HTML5 and Geocortex Web.

GEOCORTEX ESSENTIALS VIEWER FOR HTML5 (GVH)

Use Nearmap's WMS 2.0 to bring in current and historical Nearmap Vertical Imagery into Geocortex Essentials. Using a simple and custom WMS 2.0, improve accuracy by choosing from all local and state plane projections. With custom WMS 2.0, you can perform geofencing and select all survey dates for your location, ranging from the most recent capture to the first capture for your location.

GEOCORTEX WEB

Integrate Nearmap 2D and 3D aerial data into Geocortex Web through ArcGIS Online. If you are using Nearmap Vertical imagery, select it in Esri's ArcGIS Marketplace to activate it within ArcGIS Online. Next, create your maps to incorporate them into Geocortex Web. If you plan on using Nearmap 3D content, you must first export the data from MapBrowser into ArcGIS Online, create your 3D scene, and then bring that content into Geocortex Web.

For more information on how to integrate Nearmap imagery within Geocortex applications, you can find help on our support page: <https://docs.nearmap.com/display/ND/Geocortex>.

ABOUT NEARMAP

We capture, manage, and deliver the most frequently updated location content in the world, allowing businesses and governments to explore their environment easily. With Nearmap, organizations unlock opportunities that consistently inform decision making and transform the way they work. Delivered within days of capture, our imagery is much higher resolution than satellite imagery and shows changes over time. Nearmap helps users save time and money, reduce site visits, and make better informed decisions with current, clear imagery.

Nearmap is delivered through our web-based MapBrowser or accessed via third party applications such as Geocortex.

www.nearmap.com



Geocortex[®] by VertiGIS[™]



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