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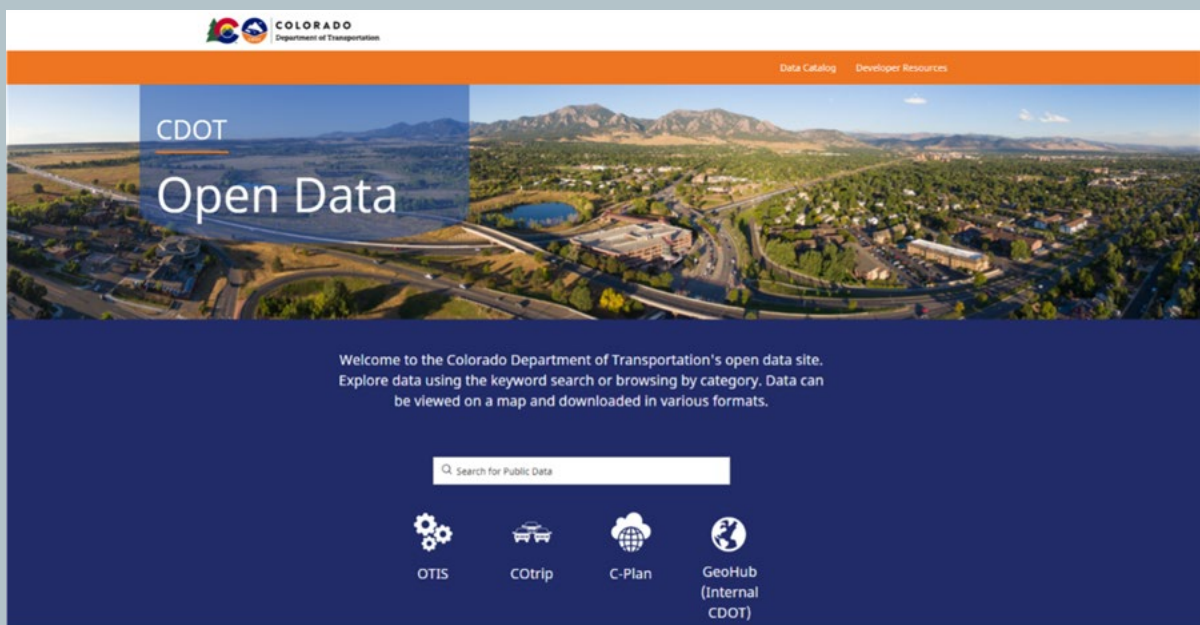
DENVER REGIONAL
DATA CONSORTIUM

The data consortium consists of Denver Regional Council of Governments members and regional partners with an interest in geospatial data and collaboration. The data consortium newsletter improves communication among local geographic information systems professionals and features updates from all levels of government as they relate to data and geospatial initiatives in our region. This newsletter is published quarterly.

COLORADO
Department of Transportation

Data Catalog   Developer Resources

CDOT
Open Data

Welcome to the Colorado Department of Transportation's open data site.
Explore data using the keyword search or browsing by category. Data can
be viewed on a map and downloaded in various formats.

Search for Public Data

OTIS   COtrip   C-Plan   GeoHub
(Internal
CDOT)

Colorado Department of Transportation launches open data site

Article submitted by Shelley Broadway, geographic information systems analyst at CDOT. Shelley can be reached at 303-757-9285 or shelley.broadway@state.co.us.

The Colorado Department of Transportation has launched a public open data website

that gives users the ability to explore and download CDOT's authoritative geospatial data. Open data encourages information sharing, promotes transparency, and enhances engagement with the public.

To check out the site, visit data-cdot.opendata.arcgis.com. From the Online Transportation Information System click the "Open Data" tile.

Navigating from the main page, visitors can use the search bar to find data by keyword, use the predefined categories to browse data, or click "Data Catalog" in the top right to see all available datasets. Once a user has selected a dataset, they can see a brief description, preview the data on a map, and see associated attributes and tabular data. The search bar in the map window allows visitors to filter records by value, analyze by field, or zoom to a current location.

One of the most powerful features of the site is that it provides users a self-service tool to download data in various formats. Currently, data is available in KML, CSV and shapefile formats, or visitors can use the REST API to add the live service directly to their own maps.

Currently, the CDOT open data site has over 50 datasets, and staff plans to expand the data catalog as needs arise. The majority of the data is updated annually or on an as-needed basis. The item's metadata indicates when the data was last updated.

Users can also find links to other CDOT applications from the open data homepage, including:

- Online Transportation Information System - find information used for transportation planning and project development
- COtrip - view traveler information and current road conditions for Colorado highways
- C-Plan - CDOT's ArcGIS Online site
- GeoHub - an internal ArcGIS for Portal site for CDOT employees

If you have any questions or comments, please contact the CDOT GIS Support Unit by email to dot_generalmailbox_dtd@state.co.us.

Arvada Emergency Business Recovery Initiative uses web app to reach public

Article submitted by Jaime Giesen, GISP, senior GIS analyst at the City of Arvada. Jaime can be reached at jgiesen@arvada.org.

The City of Arvada uses an interactive web map to communicate with the public about how $4.3 million in funding from the Coronavirus Aid, Relief and Security Act is being distributed to local businesses. The data represents seven types of aid and is generalized by location.

Web app

The city tracked addresses of businesses that received aid using Google Sheets. Once the GIS staff received the Google Sheets, they standardized, simplified and cleaned up address formats (for example, staff shortened "avenue" to "ave;" removed elements such as "unit," "suite" and "#;" and trimmed unnecessary spaces). The Sheets were then saved as .csv files for ease-of-use within ArcMap. The .csv files were joined to an address feature class. Staff researched addresses from the .csv files that didn't join and manually placed them on the map. One of the most common reasons for a nonmatch was that an applicant gave the incorrect suffix. For example, they may have listed their business on "street" when it is actually on "place". Other reasons for a nonmatch could include:

- Businesses with multiple locations but only one entry on the spreadsheet.
- Missing unit information.
- Generalized location information such as "at the intersection."
- Listing the name of a business park.

Next, staff used Model Builder to explore the data to find the best way to display it. Field names were simplified and a column was added and calculated to match aid type. Then the seven aid-type categories were combined into a single feature class so that overall aid within an area could be visualized using hexbin polygons. Seeing the data on the map this way made it easier fro staff to validate the analysis process by asking questions such as:

- Are there low concentrations where expected?
- Are there high concentrations where expected?
- Are there areas missing data?

Staff also spot-checked individual lines from the original Google Sheets with the values found in the final feature class.

The hexbin polygons conveyed the concept of area distribution instead of individual businesses receiving aid, so they weren't used in the final map. To satisfy the dual requirements of representing individual businesses while keeping them anonymous, staff shared the seven-point feature classes as services, brought them into ArcGIS Online and used the Cluster Points tool with a scale dependency. The Cluster Points tool in ArcGIS Online dynamically aggregates points within a distance threshold as the user zooms in and out. Staff used trial-and-error to determine the distance threshold that gave the best cartographic result. By default, the Cluster Points tool displays individual points if zoomed in far enough. Therefore, staff placed a scale dependency on each of the seven layers so that they would turn off before individual businesses were identifiable.

Finally, the web map was shared as a web app using the Web App Builder tab and its format finalized using the built-in tools provided.

Visit the city's website for more information about the Arvada Emergency Business Recovery Initiative.
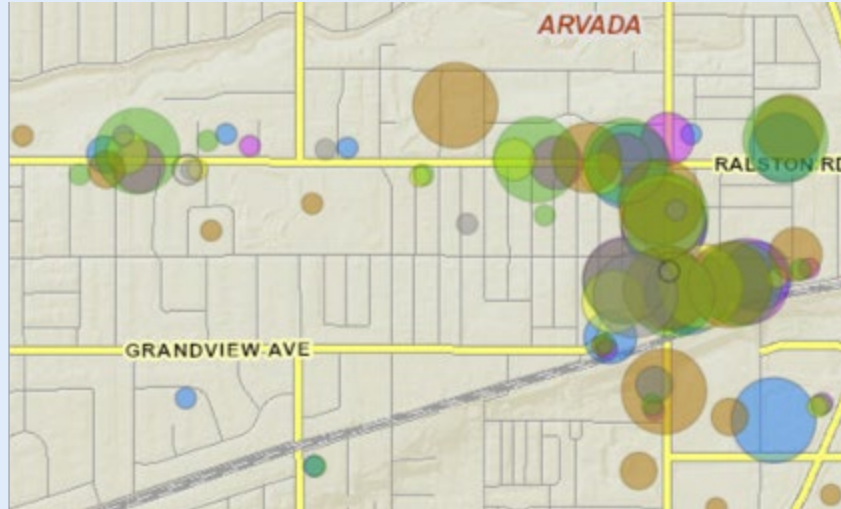
DRCOG facilitates shared micromobility data platform

Article submitted by Emily Lindsey, AICP, transportation technology strategist at DRCOG. Emily can be reached at 303-480-5628 or elindsey@drcog.org.

DRCOG is working with partners to pilot regional shared micromobility data sharing. Enabled by local agency agreements with operators that require Mobility Data Specification and General Bikeshare Feed Specification data, DRCOG uses Ride Report's platform to provide member governments and regional partner agencies a way to share data and understand activity for shared micromobility programs in their jurisdiction.

If you work for a DRCOG member government and have (or are considering) a shared micromobility program, please reach out to Emily Lindsey at elindsey@drcog.org.

Join OpenStreetMap U.S.'s Mapping USA Conference: May 20th-22nd

Article provided by Diane Fritz, OpenStreetMap U.S. board member and OpenStreetMap Colorado co-organizer. Diane can be reached via email at diane@openstreetmap.us.

As these virtual times continue, OpenStreetMap U.S. continues to find ways for data professionals to gather and share their love of all that is OpenStreetMap. Please join the free virtual conference, Mapping USA, May 20-22.

Participants can:

- Present your work with OpenStreetMap — the call for participation is open through

April 23.
- Register to attend any of the events, such as Mappy Hour on Thursday, May 20; or workshops and talks on Friday, May 21, and Saturday, May 22.

Mapping USA

DRCOG data acquisition updates

Article submitted by Ashley Summers, GISP, PMP, information systems manager at DRCOG. Ashley can be reached at 303-480-6746 or asummers@drcog.org.

DRCOG held a meeting on March 18 to discuss these projects. If you missed it, you can view these slides.

Denver Regional Aerial Photography Project 2022

A subset of previous project partners volunteered to evaluate vendors for the 2022 project. They reviewed six proposals containing over 20 options and ultimately selected Sanborn and Nearmap. DRCOG is currently discussing the project scope and negotiating contracts with both vendors, which will enable participant quotes to be generated. DRCOG will request partner commitments for the Denver Regional Aerial Photography Project this fall.

If you are not a project partner and would like to be, reach out to me at asummers@drcog.org. Read more about DRCOG's imagery projects on its website.

Regional Lidar Project 2020

DRCOG received a grant from the U.S. Geological Survey in December 2019 to collect quality level 2 lidar in 5,000 square miles of the region and derive contours in most of the metro area. Flights to the collect the data are complete and quality control is expected to start in June. DRCOG staff expects deliveries in the fall and winter. The data will be in the public domain and made available for download through DRCOG's Regional Data Catalog.

For more information, visit our website.

Do you have an interesting use case for lidar data? Tell us about it by emailing me at asummers@drcog.org.

Planimetric Data Project 2020

The planimetric data project began in February and project partners are currently reviewing a pilot. Data will be delivered incrementally starting in June to project partners. The public will have access to the data in the first quarter of 2022 via the DRCOG Regional

Data Catalog.

The partnership is collecting building roofprints, edge of pavement, parking, sidewalks and ramps, trails, driveways, and impervious surface throughout the metro area. Check out the map.

If you are not a project partner and would like to be, reach out to me at asummers@drcog.org. Read more about our planimetric data projects on our website and download datasets from past projects.

Regional Land Cover Project 2020

DRCOG was awarded a Colorado Water Conservation Board Water Plan Grant in March, which supplies a 50% match to local contributions for this project. The project is now fully funded and will be kicking off this project in late April.

The product will be a 9-class, 1-meter resolution land cover dataset that covers the 6,000-square-mile region. Deliverables are expected in the first quarter of 2022 and will be made publicly available on DRCOG's Regional Data Catalog.

If you are not a project partner and would like to be, reach out to me at asummers@drcog.org.

Things you might have missed

- View all DRCOG data briefs.
- View all OpenStreetMap Colorado Meetups.
- View all GIS Colorado events.
- Check out the Go Code Business Solutions Challenge.

Engage with us

- This quarterly newsletter reaches more than 400 people, has a higher-than-average open rate, and is written by professionals like you. It is the perfect place to show off your projects, highlight your great work and contribute ideas to the GIS community in the Denver region. Newsletter release dates are the 15th of January, April, July and October (or the next business day afterward). Please contact Ashley Summers at 303-480-6746 or asummers@drcog.org to contribute.
- Did you miss a newsletter or a meeting? Visit our website for past newsletter issues and Data Consortium meeting materials.

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