



# Del Norte Regional Transportation Mapping

**Final Report**

Del Norte Local Transportation Commission

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# Executive summary

The Del Norte Local Transportation Commission (DNLTC) is the Regional Transportation Planning Agency (RTPA) for the Del Norte County region. DNLTC sought assistance with maintaining mileage mapping and other transportation related spatial datasets that would more accurately and efficiently inform planning processes. The priorities for this project were to 1) develop transportation related GIS datasets were none currently existing, and 2) provide data organization, centralization and access to these datasets to partners across the region.

GHD was engaged by the DNLTC to provide GIS mapping for several GIS Transportation datasets which included: County maintained roads, City maintained roads, transit layers, County bridges, County and City bike lanes and trails, County off highway vehicle roads, County right of way encumbrances, County and City pavement condition indexes, sidewalks, driveways, curb ramps, drainage features and barriers within sidewalks. Working from existing data retrieved from the various stakeholders in the DNLTC or from freely available GIS data, spatial data and associated metadata was produced for each of the above categories. Datasets that were digitized via satellite imagery were verified during a two-week field visit to Del Norte County by employees of GHD.

To facilitate data sharing and web-based viewing, an ArcGIS Online Organizational Site was set up for the DNLTC. The site serves as a GIS data clearinghouse for the members of the DNLTC to collaborate on projects while enabling the DNLTC to share GIS data publicly with online web maps.

This final report captures the progression of data development and descriptions of each dataset created. At this time, DNLTC's ArcGIS Online Organizational Site does not contain public facing data, webmaps or web applications. It is serving as an internally accessible data and web application portal where members can manage their own data and can access regional data shared with the organization. Further development of transportation related GIS datasets and web applications can leverage the work done under this project and advance understandings and planning initiatives for the region.

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# 1. Introduction

## 1.1 Purpose of this report

This report is an overview of the work completed by GHD for the Del Norte Local Transportation Commission (DNLTC) Regional Transportation Mapping Project. Here we will discuss methods, outcomes, and provide detailed documentation of the finished GIS deliverables. For any further steps related to administration or ongoing maintenance of the delivered datasets that need to be completed by the DNLTC after GHD has finished the agreed upon tasks, detailed instruction will be presented in the respective task's section and/or be attached to this report.

## 1.2 Glossary of Acronyms

ESRI – Environmental Systems Research Institute

DNLTC – Del Norte Local Transportation Commission

TIGER – Topologically Integrated Geographic Encoding and Referencing

CRS – California Road System

GTFS – Google Transit Feed Specification

FHWA – Federal Highway Administration

RCTA- Redwood Coast Transit Authority

OHV – Off Highway Vehicle

## 1.3 Background

GHD worked with DNLTC's executive director, staff from the County of Del Norte, Crescent City, members of the Elk Valley Rancheria, the Tolowa Dee-ni' Nation, and the Redwood Coast Transit Authority to gather existing data and develop the extent and schema of the resulting GIS datasets described herein. Work began in January of 2021 with a data request, inventory and gap analysis delivered to DNLTC in March. From then, meetings were held individually with staff and members to define the extent and schema of datasets before performing desktop digitizing. Field verification and data collection occurred July 2021 for transit stop and callbox data.

In December 2021, an amendment was finalized to develop additional datasets and to initiate the ArcGIS Online Organizational (AGOL) Site. Datasets developed to date were all published to the AGOL site and shared with staff and members associated with each dataset. Additional datasets were published there as completed. Field verification and data collection occurred again in April 2022 for sidewalks, curb ramps, driveways, drainage facilities and street signs.

As of June 2022, GHD has completed the development of all requested GIS datasets and published these to DNLTC's AGOL site. The AGOL subscription renews on an annual basis each December and is expected to remain as DNLTC's spatial data portal for regional transportation datasets.

# 2. GIS Data Deliverables

To maintain consistency and reliability of all GIS deliverables a similar process was undertaken for each when being built:

- Existing data that could help GHD was requested of the commission stakeholder who required the dataset
- A meeting / workshop was conducted between GHD staff to determine GIS organization such as topology and table schema required
- Several rounds of GHD internal and external review by the client were conducted through presenting maps and receiving comments
- Datasets were delivered with their associated metadata in both ESRI (within the relevant feature classes / shapefiles) and MS Word document format.

## 2.1 Roadway Maintained Mileage

### 2.1.1 Source Data

Roadway centerline GIS data exists and is maintained by federal and state agencies. The two sources described below were used as geographical starting points to which attributes from the County and City were applied and geometries refined.

#### 2.1.1.1 TIGER

The Topologically Integrated Geographic Encoding and Referencing (TIGER) geometries are a nationwide data product available for public usage produced by the United States Census Bureau. One feature collection of the many statistical and legal digital geographies they produce are the TIGER Line shapefiles, which consist of linear features representing roads and hydrography. This data product is updated on a yearly basis and is an excellent starting point for local municipalities looking to produce their own customized GIS database.

#### 2.1.1.2 CRS

The California Road System GIS data is used to catalogue the functional classification of roads within California. Functional Classification is used in determining eligibility for Federal funding and GIS data of the CRS can be obtained from their open data portal or upon request. GHD acquired the latest GIS data directly from Caltrans.

### 2.1.2 County Maintained Mileage

Starting from the road survey excel spread sheet recorded by county staff in 2017, County maintained road start points and end points were extracted and reviewed. The TIGER Road shapefile for Del Norte County was used to manually extract line features that corresponded to the starts and ends of roads; this was done on a per road basis and not with geoprocessing tools to ensure the greatest level of accuracy possible. To join the contents of the excel sheet to the line feature class, the road identifiers provided were manually input into the spatial data.

Upon completion of the initial work, a map book was prepared for County staff to review and comment on the positions of the resulting roads. After a few rounds of comments, a final dataset was delivered as well as accompanying metadata. As work on other deliverables continued, a few inaccuracies were discovered in the County maintained road data that was delivered, when that happened GHD would correct and send an updated file, resulting in several versions delivered. It should be noted that the most recently delivered dataset is the most up to date.

### 2.1.3 City Maintained Mileage

GHD extracted all required data from shapefiles provided by the City and joined them with the shapefile of CRS geometries using the road identifier provided by the City. From there all other data that was provided to GHD (PASER 2017, etc...) was incorporated manually into a complete street inventory. Roads were split on the intersection.

## **2.2 Bus Routes, Stops, and Shelters**

Bus routes and stops GIS data are managed by the RCTA using the Google Transit Feed Specification (GTFS) which is a data model that allows easy integration with Google maps. This data was provided as a starting point for GHD to build on. The bus stops data was enhanced by adding various attributes such as whether there is a side blade or bench at the stop, or whether there is a sidewalk adjacent to the sign. A picture was taken of each bus stop and related to that feature so that it can be easily referenced in the future.

The geometries of the Bus Routes pulled in from the GTFS were not appropriate for cartographic presentation. They were adjusted to be in the centerline of the road they traversed, and each route's path was verified to match the path on RCTA's website. These cartographic layers were then used as a starting point for the brochure maps that were completed in the amendment to the contract.

## **2.3 Tribal Reservation Roads**

GHD contacted the Yurok Nation, the Tolowa Dee-Ni' Nation, the Elk Valley Rancheria, and the Resighini Rancheria at the onset of the project to determine in what capacity mapping work done could be beneficial to each tribe. After having several meetings and continued communication with each tribe it was concluded that a tribal reservation road dataset for each tribe was unnecessary because it either already existed, or in Elk Valley Rancheria's case, the area owned was too small to justify additional effort.

## **2.4 Bike Routes and Lanes**

A GIS dataset of Bike Lanes within the County was produced from descriptions in the "RESOLUTION NO. 2020-016" document that was provided by the County; the document laid out various parking regulations, some of which were the areas in which there were bike lanes. These descriptions as well as aerial imagery of the area were used to digitize bike lanes.

## **2.5 Local Bridges**

Local bridges GIS data is publicly available in the Caltrans Structure Maintenance & Investigations database; an export of this data, including the location of an additional bridge that was not in this data, was provided to GHD by the County. The attributes from the export were joined to a shapefile.

## **2.6 Rights-of-way along Frontage Parcels**

To address the need for a solution to store research related to where Right of Way is granted to the County, GHD has constructed a framework of recommended methods that revolve around storing spatial information in an online format while relating the documents found to the spatial entities they apply to. A variety of spatial types (Point, Line, Polygon) can be used to store these Right of Way representations, but through communication between GHD and the County it was decided that approximate polygons of the boundaries would be the most beneficial solution. These details are documented in Attachment (x) within this report.

## **2.7 Local Trails**

### **2.7.1 Crescent City**

It was decided that the Crescent City trails dataset would be combined with the City Bike Lanes data because of the small number of features that would exist in both. Bike Lanes and trails were digitized based off aerial imagery and feedback from city employees.

## 2.7.2 Del Norte County

The county decided that due to the large number of trails that were present and the lack of location information available to seed a dataset it was a better idea to use GHDs effort in producing a GIS dataset of roads in the County which are accessible to Off Highway Vehicles (OHV). The County provided GHD with the 2018 OHV Facilities Plan which GHD then used to subset the County Maintained Roads dataset into OHV roads.

## 2.8 Call Box System

Spatial data for the County Call Boxes already existed in the form of distance from post miles on the highway; this was used to expedite the capture of GPS coordinates with a survey-grade GNSS receiver. DNLTC provided the SAFE report to GHD which held number of calls for each callbox in 2017, 2018, and 2019; these, and other attributes provided in the report, were added to each individual point.

## 2.9 Transit Analysis

The Redwood Coast Transit Authority was interested in answering 2 questions via spatial analysis:

1. How many people live within ¼ mile of the transit routes in Del Norte?
2. What are the demographics of those who live within ¼ mile?

To answer these questions the ESRI Demographics product was employed. GHD first created a network dataset so that ¼ mile buffers could be produced; the demographics service was queried using the spatial extent of the buffers. A full list of the demographics that were queried in the analysis can be found in this tasks metadata.

## 2.10 Transit Cartography

RCTA expressed a need for cartographic products that could be used in their brochures; these products consisted of a full system map, an inset system map, and a fare zone map. GHD did not produce any online publications because RCTA was in the process of making dynamic web maps available on their website for users.

## 2.11 VMT Mitigation

The 2020 Del Norte Region SB 743 Implementation Plan requires that the Vehicle Miles Travelled (VMT) that may arise due to new development be evaluated and mitigated. New developments that exceed the Counties threshold for VMT must submit documentation and perform actions that the County deems suitable to mitigate the additional VMT that would be produced. To track the development area's / property's associated *Notice of Requirement for SB 743 Implementation* documents, it was proposed that spatial features associated with a single use permit be produced and their documents attached to the feature. These spatial features could then be easily referenced in an ArcGIS Online web application by County employees.

## 2.12 Pavement Condition Index

Annually the County Roads Division does a pavement condition survey of all County roads; the result of this survey was the basis of the County Maintained Roads layer that was made earlier in the project. The County had newer information for 2020 and that was incorporated into the solution that is described below.

A relational structure was chosen for the storage of the pavement condition index (PCI) because several fields are used to store this information and it would be impractical over time to continuously add fields to the roads dataset every year. The County can store the PCI for each year in a related table within ArcGIS Online and then query that information as needed without having to store multiple copies of the data.



## 2.13 Road Maintenance Areas

Delineating road maintenance areas and making those GIS features available for those doing road work was an important goal of County employees. A set of general descriptions were provided to GHD and initial polygons were digitized based on the descriptions – County employees then took the polygons and refined them further. The Maintenance areas can be used by both the City and the County to speed up project development by defining a reference layer for maintenance responsibilities.

## 2.14 Sidewalks, Drainage Facilities, Driveways, Curb Ramps and Crescent City Signage

Using a combination of Google Imagery, Google Street View imagery, and existing GIS features like the county parcel layer, a team of GHD employees digitized the City and County maintained assets listed below within the local responsibility area immediately adjacent to Crescent City including the Bertsch-Oceanview neighborhood (Figure 1):

- Sidewalks
- Drainage Facilities
- Driveways
- Curb ramps

Due to the temporal variability of Street view imagery not all features digitized with that method were up to date; to keep track of this a field was created within each digitized dataset to record the street view imagery year that the feature was derived from. These features were then verified during a two-week field visit to Del Norte by GHD employees.

### 2.14.1 Field Verification of Digitized Assets

A team of two GHD employees went out into the field within Crescent City and the area surrounding it to verify the features that were collected with desktop digitizing. A GNSS receiver paired with the ArcGIS Field Maps application were used to capture any additional features.

### 2.14.2 City Signs

While operating ahead of schedule while in the field it was decided that an additional entity would be captured for Crescent City: Roadway Signage. GHD employees captured points of regulatory signs (stop signs, parking signs, etc...) for the city and took a picture of each sign captured.

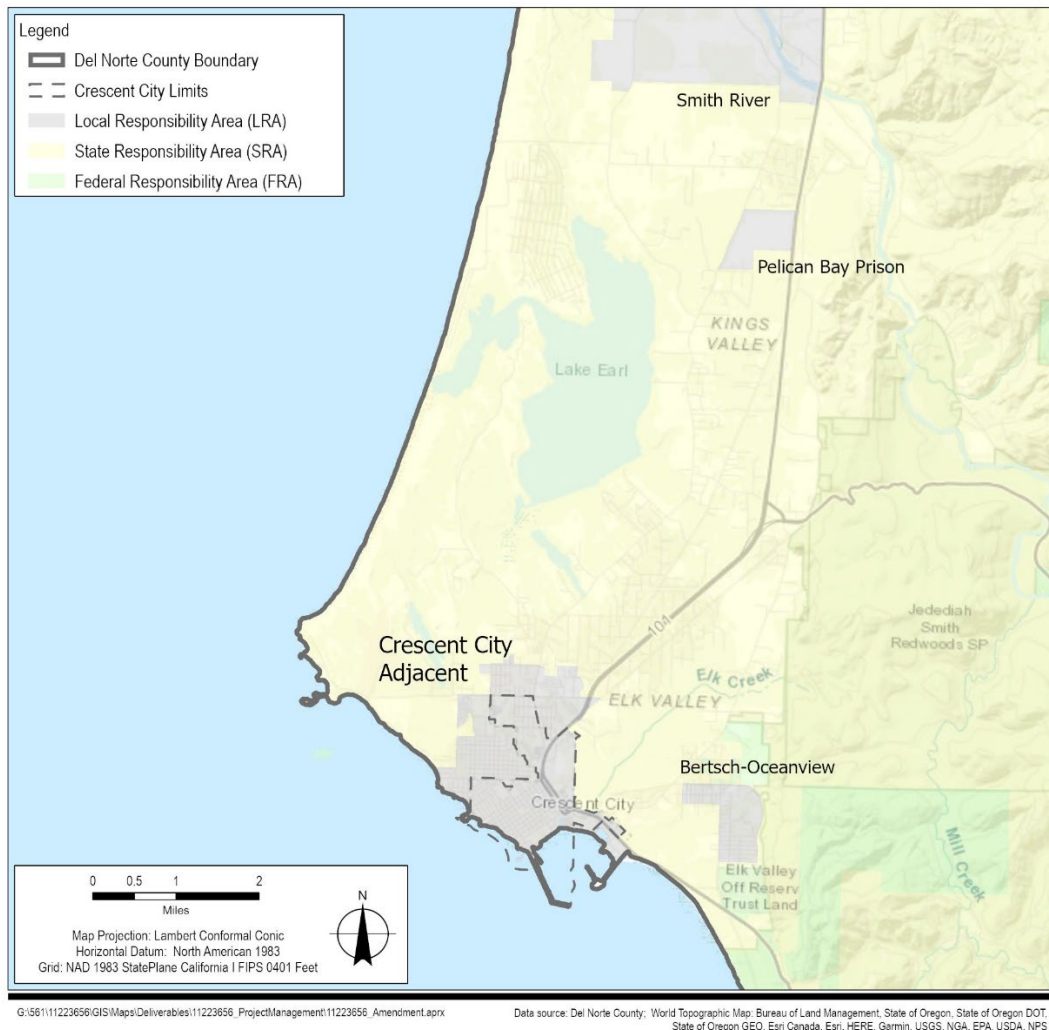


Figure 2-1: Features were digitized within the Bertsch-Oceanview LRA and the LRA adjacent to Crescent City limits

## 3. Regional Transportation Data Platform

### 3.1 ArcGIS Online

ArcGIS Online (AGOL) is ESRI’s premiere Software as a Service (SaaS) offering that helps GIS data managers and consumers host, access, analyse, and manage their spatial data with a robust system of applications and web pages. AGOL was chosen for the DNLTC Regional Mapping Project to enable GHD and DNLTC AGOL users to share their datasets on a single web-based platform, eliminating the need for file-based data sharing and enhancing the user experience across different GIS workflows.

The wide adoption of the ArcGIS Suite of applications within governmental organizations makes the platform an ideal choice for the collection of local government agencies that make up the DNLTC. GIS information can be easily exchanged between other agencies using web services which allow for dynamic, and flexible incorporation of GIS information into shared web maps, web applications, and desktop workflows.

Currently, DNLTC’s AGOL Site holds datasets as feature services under the site administrator’s content. These datasets are shared with their owners (e.g. City, County, etc.) through the use of Groups, accessible with any level of

user license (e.g. Viewer, Creator, etc.). Within these Groups there may be webmaps that display one or more datasets, or web applications built for various specific purposes. Additionally, all datasets are shared to the entire organization, in some cases as Views where editing is happening by the dataset owner. Several options are available for public sharing of these datasets and web applications, either through AGOL or the associated Hub Platform.

## 4. Summary

In summary, several foundational GIS datasets were created that will support future transportation and transit planning plus right-of-way asset management for Tribal Nations, City and County agencies. These important datasets are now accessible via web browser, desktop GIS applications, and mobile devices to all members of DNLTC's AGOL Site. The AGOL site has the capacity to serve as a transportation data repository, data viewer and GIS workspace for the region moving forward.

# Appendix

## GIS Metadata

# County Maintained Roads Metadata

## Citation

This dataset was developed by GHD as an operational inventory for the employees of Del Norte County; it is a part of the Del Norte Regional Mapping Project initiated by the Del Norte Local Transportation Commission. Lines were extracted from open data sources and segmented based on 2017 road inspection data provided by Del Norte County.

**Delivery Date:** June 10th, 2021

**Title:** Del Norte County Roads Inventory Geodatabase

**Abstract:** This Geodatabase contains a polyline feature class that represents only the roads that Del Norte County currently has responsibility to maintain, a table of the original data provided to GHD to digitize the roads that can be joined directly with the polyline feature class, and a point dataset that represents the GPS coordinate columns in the above table.

**Keywords:** Transportation, Roads, Northern CA, Del Norte County

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

After the original segmentation of the raw TIGER data to match County data, some segment values were modified from what was originally provided based off comments from County employees. It's important to state that the line segment values will match up with the table provided in the geodatabase, not in the original excel file, because of these changes. No field work was completed to verify the precise locations of the streets. GPS locations provided by the county were used to populate attributes for specific line segments.

**Sources:** The geometries that were used for the roads originated in the Topologically Integrated Geographic Encoding and Referencing (TIGER) Shapefiles which are developed nationwide for public use by the Census Bureau. Attributes were added from data County employees provided to GHD.

TIGER Documentation: [https://www2.census.gov/geo/pdfs/maps-data/data/tiger/tgrshp2020/TGRSHP2020\\_TechDoc.pdf](https://www2.census.gov/geo/pdfs/maps-data/data/tiger/tgrshp2020/TGRSHP2020_TechDoc.pdf)

## Spatial Data Organization

Google and ESRI Imagery base maps were used when verifying locations of streets and their surrounding environments.

## Spatial Reference

NAD 1983 State Plane California I FIPS 0401 (US Feet)

# Entity and Attributes

## Feature Classes

### DNCRoadsInventory - Polyline

**Description:** All County maintained roads segmented based off field work done by the county in 2017

*Table 1: Field detail for DNCRoadsInventory Feature Class*

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID	OBJECTID	Object ID	FALSE		
Shape	Shape	Geometry	TRUE		
fullname	Full Name	Text	TRUE		100
segmentid	Segment Identifier	Text	TRUE		255
Shape_Length	Shape_Length	Double	TRUE		
lenmiles	Length In Miles	Double	TRUE		
aheadrd	Ahead Road	Text	TRUE		255
backrd	Back Road	Text	TRUE		255
drainrating	Drainage Rating	Text	TRUE	DrainRating	255
surftype	Surface Type	Text	TRUE	RdSurfaceType	255
surfwidth	Surface Width	Double	TRUE		
shldrwidth	Shoulder Width	Double	TRUE		
curbgutter	Curb & Gutter	Text	TRUE		255
sidewalk	Sidewalk	Text	TRUE		255
Last_Editor	Last_Editor	Text	TRUE		255
Last_Edit_Date	Last_Edit_Date	Date	TRUE		
mainsched	Maintenance Schedule	Date	TRUE		
swinit_yr	Surface Width Initials Year	Text	TRUE		255
shwinit_yr	Shoulder Width Initials Year	Text	TRUE		255

### Field Descriptions

Most attributes were provided by the County and correspond to road segments canvassed in 2017, below are the attributes that were added by GHD:

1. Last\_Editor – A field that automatically stores the system user credentials (windows username) who last performed an edit on that feature.
2. Last\_Edit\_Date – A field that automatically stores the date of the last edit on that feature.
3. mainsched – A date field that can be used to store planned maintenance dates on that road segment.
4. swinit\_yr – A field that can be used to store the initials of the last person who checked the road surface width of that road segment.
5. shwinit\_yr – A field that can be used to store the initials of the last person who checked the shoulder width of

that road segment.

## GPSPoints\_2017\_InspectionData – Points

**Description:** Points provided by the County to segment the roads. The Ahead and back GPS coordinates were provided in a single table and therefore had to be split apart and merged back together.

*Table 2: Field detail for the GPSPoints\_2017\_InspectionData Points feature class*

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID	OBJECTID	Object ID	FALSE		
Shape	Shape	Geometry	TRUE		
segmentid	Segment Identifier	Text	TRUE		8000
fullname	Full Name	Text	TRUE		8000
aheadback	Ahead or Back	Text	TRUE		8000
aheadrd	Ahead Road	Text	TRUE		8000
backrd	Back Road	Text	TRUE		8000
lat	GPS Latitude	Text	TRUE		8000
lon	GPS Longitude	Text	TRUE		8000
date	Date	Date	TRUE		
inspector	Inspector	Text	TRUE		8000
roadclass	Road Classification	Text	TRUE		8000
surfconrat	Surface Condition Rating	Text	TRUE		8000
drainratng	Drainage Rating	Text	TRUE		8000
surftype	Surface Type	Text	TRUE		8000
truckuse	Truck Use	Text	TRUE		8000
caruse	Car Use	Text	TRUE		8000
surfwidth	Surface Width	Long	TRUE		
shldrwidth	Shoulder Width	Long	TRUE		
roadlen	Road Length	Text	TRUE		8000
curbgutter	Curb & Gutter	Text	TRUE		8000
sidewalk	Sidewalk	Double	TRUE		
adacomp	ADA Compliance	Text	TRUE		8000
adanoncomp	ADA Non Compliance	Text	TRUE		8000
surf	Surface	Text	TRUE		8000
surf1	Surface 1	Text	TRUE		8000
cracktype	Type of Crack	Text	TRUE		8000

### Field Descriptions

These attributes also match those that were provided by the County.

1. AHEADBACK – a field denoting whether this is the Ahead point or the back point.

# Domains

*Table 3: DrainRating Domain*

Code	Description
Average	Average
Poor	Poor
Good	Good
N/A	N/A

*Table 4: RdSurfaceType Domain*

Code	Description
Asphalt	Asphalt
Chip Seal	Chip Seal
Gravel	Gravel
Other	Other

## Distribution Information

All distribution will be managed by the employees of Del Norte County

## Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:** June 10th, 2021

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>



# Crescent City Roads Metadata

## Citation

This dataset was developed by GHD for the employees of Crescent City as a part of the Del Norte Regional Mapping Project initiated by the Del Norte Local Transportation Commission.

**Delivery Date:** June 1<sup>st</sup>, 2021

**Title:** Crescent City Roads Inventory Geodatabase

**Abstract:** This Geodatabase contains a polyline feature class that represents only the roads that Crescent City currently has responsibility to maintain, a table that contains traffic count data from 2015 delivered to Del Norte County by Caltrans, and a relationship class that links the feature class to the traffic counts through a one (road) to many (traffic count records) relationship. All features are within the Crescent City limits except where topological relationships with the county-maintained roads required for segments to extend outside of the limits.

**Keywords:** Transportation, Roads, Crescent City, Del Norte County

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

The attributes contained in the road feature class were developed with the input of city employees and are mostly derived from already existing measures of the physical status of the roads. The field with the most uncertainty is the Speed Limit; these speed limits were not verified in the field or by city employees and may be inaccurate in places.

**Sources:** The geometries that were used for the roads originated in the Topologically Integrated Geographic Encoding and Referencing (TIGER) Shapefiles which are developed nationwide for public use by the Census Bureau. Attributes were added from data Crescent City employees provided to GHD. The Caltrans Functional Classification for each road was added by acquiring the California Road System (CRS) GIS Geodatabase from Caltrans District 1.

TIGER Documentation: [https://www2.census.gov/geo/pdfs/maps-data/data/tiger/tgrshp2020/TGRSHP2020\\_TechDoc.pdf](https://www2.census.gov/geo/pdfs/maps-data/data/tiger/tgrshp2020/TGRSHP2020_TechDoc.pdf)

CRS Webpage: <https://dot.ca.gov/programs/research-innovation-system-information/office-of-highway-system-information-performance>

After adding the attributes that the city provided to GHD, maps were provided for review to city employees. Comments were submitted to GHD and roads and attributes were modified based on the comments.

## Spatial Data Organization

Google and ESRI Imagery base maps were used when verifying locations of streets and their surrounding environments.

## Spatial Reference

NAD 1983 State Plane California I FIPS 0401 (US Feet)

# Entity and Attributes

## Feature Classes

### CrescentCityRoadsInventory (Polyline Feature Class)

Table 5: Field Details for CrescentCityRoadsInventory

Field Name	Alias	Data Type	Allow Null	Domain	Length
FULLNAME	FULLNAME	Text	TRUE		100
LETTGRADE	LetterRate	Text	TRUE	PASERGrade	254
SEGMENTID	Segment ID	Text	TRUE		255
SPEEDLIM	Speed Limit	Long	TRUE		
STATUS	Status	Text	TRUE	Status	255
SURFTYPE	Road Surface Type	Text	TRUE	RoadSurfaceType	255
MAINSCHED	Maintenance Schedule	Date	TRUE		
MAINTYPE	Maintenance Type	Text	TRUE		1000
MAINTRPT	Maintenance Report	Text	TRUE		255
QC_No	QC_No	Long	TRUE		
PASER2017	PASER 2017	Short	TRUE	PASERScore	
FC_DRAFT	CT Functional Class 2020	Text	TRUE	FunctionalClass	255
ONEWAY	OneWay	Text	TRUE	Y/N	255
Last_Editor	Last_Editor	Text	TRUE		255
Last_Edited	Last_Edited	Date	TRUE		
OBJECTID	OBJECTID	Object ID	FALSE		
Shape	Shape	Geometry	TRUE		
Shape_Length	Shape_Length	Double	TRUE		

### Field Descriptions

Table 2: Field descriptions for fields within CrescentCityRoadsInventory

Field	Description
FULLNAME	The full name of the street including the street suffix (St., Dr., etc...)
Last_Editor	The system user who last modified the dataset
Last_Edited	The date the last edits were committed to the database.
FC_DRAFT	Caltrans Functional Classification from the CRS database
LETTGRADE	Letter Grades for the roads physical condition provided by Crescent City
SEGMENTID	Segment ID stored in the Crescent City Only Pavement excel sheet provided by Crescent City Employees
SPEEDLIM	Speed Limit manually entered, was not verified in the field so may be inaccurate in places
STATUS	An indication of the functional status of the road (Open, Paper, Decommissioned, Vacated)
SURFTYPE	The Surface Type of the road, Asphalt was assumed for all roads where comments weren't provided by the City

Field	Description
MAINSCHED	A field to store the date of the next planned maintenance action for a road segment (optional)
MAINTYPE	Field for storing the type of maintenance that will be completed at the next date
MAINTRPT	Report (if any) for the last maintenance action that was completed for this road segment
QC_No	Caltrans Identification Number in the QC_Counts 2015 traffic counts excel sheet provided by Rosanna Bower from Del Norte County
PASER2017	PASER Score from shapefiles provided by Crescent City
ONEWAY	Indicates whether a street is one way or not

## Domains

*Table 6: FunctionalClass Domain*

Code	Description
1	INTERSTATE
2	OTHER FWY OR EXPWY
3	OTHER PRINCIPAL ARTERIAL
4	MINOR ARTERIAL
5	MAJOR COLLECTOR
6	MINOR COLLECTOR
7	LOCAL

*Table 7: PASERGrade Domain*

Code	Description
A	A
B	B
C	C
D	D

*Table 8: PASERScore Domain*

Minimum	Maximum
1	10

*Table 9: RoadSurfaceType Domain*

Code	Description
Asphalt	Asphalt
Rubberized Asphalt	Rubberized Asphalt
Concrete	Concrete

Code	Description
Composite Pavement	Composite Pavement
Dirt	Dirt
Gravel	Gravel

Table 10: Status Domain

Code	Description
Open	Open
Paper	Paper
Vacated	Vacated
Decommissioned	Decommissioned

Table 11: Y/N Domain

Code	Description
Yes	Yes
No	No

## Standalone Tables

### 1. QC\_Counts\_2015

- a. This dataset was copied directly from the QC\_Counts excel spreadsheet provided by the city. Some field names were changed to be integrated into ESRI software

Table 12: Field Details for QC\_Counts\_2015 Table

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID	OBJECTID	Object ID	FALSE		
QC_no	QC no	Long	TRUE		
Name	Name	Text	TRUE		8000
Street	Street	Text	TRUE		8000
Location_w_l_street	Location w/l street	Text	TRUE		8000
Direction	Direction	Text	TRUE		8000
AM_Peak_Mean	AM_Peak_Mean	Long	TRUE		
PM_Peak_Mean	PM_Peak_Mean	Long	TRUE		
Day_Mean	Day_Mean	Long	TRUE		
AM_StdErr_Peak	AM_StdErr_Peak	Double	TRUE		
PM_StdErr_Peak	PM_StdErr_Peak	Double	TRUE		
Day_StdErr	Day_StdErr	Double	TRUE		
AM_StdErr_percent	AM_StdErr_percent	Double	TRUE		
PM_StdErr_percent	PM_StdErr_percent	Double	TRUE		

## Distribution Information

All distribution will be managed by the employees of Crescent City.

## Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:** June 1<sup>st</sup>, 2021

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>

# Transit Metadata

## Citation

This dataset was developed by GHD as an operational inventory for the employees of Redwood Coast Transit Authority (RCTA); it is a part of the Del Norte Regional Mapping Project initiated by the Del Norte Local Transportation Commission. Data were extracted from RCTA's Google Transit Feed Specification (GTFS) feed; attributes were added, and routes were corrected. Field work was conducted to capture images of the bus stops and assist in populating attributes that describe the status of facilities at the bus stops.

**Delivery Date:** August 5<sup>th</sup>, 2021

**Title:** Redwood Coast Transit Inventory

**Abstract:** This Geodatabase contains a polyline feature class that represents routes operated by RCTA, a point feature class that represents bus stops, an attachment table that contains photos taken at the bus stops, and a relationship class that relates the photos to the bus stops. Data were also provided in shapefile format.

**Keywords:** Transportation, Roads, Northern CA, Del Norte County, Transit, Bus Lines, Bus Stops

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

Data were extracted from RTCA's GTFS feed as a starting point; routes were compared to routes stored on the RTCA website, and bus stops were modified with additional attributes describing their physical characteristics and facilities after visiting each stop and taking pictures.

**Sources:** Open Mobility Data

GTFS Documentation: <https://developers.google.com/transit/gtfs>

Downloaded from: <https://transitfeeds.com/>

## Spatial Data Organization

Google and ESRI Imagery base maps were used when verifying locations of streets and their surrounding environments.

## Spatial Reference

NAD 1983 State Plane California I FIPS 0401 (US Feet)

# Entity and Attributes

## Feature Classes

### BusRoutes - Polyline

**Description:** Polylines representing each bus route that RTC operates. A shapefile of BusRoutes feature class was also provided.

Table 13 Field in the BusRoutes Feature Class

Field Name	Alias	Data Type	Length
OBJECTID	OBJECTID	Object ID	
Shape	Shape	Geometry	
shape_id	shape_id	Text	500
route_id	route_id	Text	500
route_short_name	route_short_name	Text	500
route_long_name	route_long_name	Text	500
route_url	route_url	Text	500
route_color	route_color	Text	500
route_type_text	route_type_text	Text	500
Shape_Length	Shape_Length	Double	

### Field Descriptions

All fields already existed in the GTFS dataset.

### BusStops – Point

**Description:** Points representing each bus stop that RTCA maintains

Within the file geodatabase there is an attachment table which holds the names of all the attached photos. A relationship class links the attachment table to the BusStops feature class. The GlobalID in the BusStops feature class is the primary key, which is also stored in the rel\_globalid field in the attachment table. A shapefile of the BusStops feature class was also provided. The photo file names include the [stop\_id] value of the corresponding bus stop.

Table 14 Fields in the BusStops Feature Class

Field Name	Alias	Data Type	Domain	Length
objectid	ObjectID	Object ID		
stop_name	stop_name	Text		255
stop_id	stop_id	Double		
shelter	shelter	Text	YN	255
sh_install	sh_install	Date		
bench	bench	Text	YN	255

Field Name	Alias	Data Type	Domain	Length
be_install	be_install	Date		
att_sw	att_sw	Text	YN	255
asw_six_ft	asw_six_ft	Text		255
signblade	signblade	Text	YN	255
signmount	signmount	Text		255
sb_install	sb_install	Date		
farezone	farezone	Text	FareZones	255
pullout	pullout	Text	YN	255
community	community	Text		255
facility	facility	Text	TransitFacility	255
photo_year	photo_year	Long		
stop_desc	stop_desc	Text		255
stop_lat	stop_lat	Double		
stop_lon	stop_lon	Double		
yearadded	yearadded	Date		
county	county	Text		255
shape	shape	Geometry		
globalid	globalid	Global ID		
created_date	created_date	Date		
created_user	created_user	Text		255
last_edited_date	last_edited_date	Date		
last_edited_user	last_edited_user	Text		255

## Field Descriptions

Fields described below are those that were added by GHD, the rest already existed in the GTFS data.

*Table 15 Field descriptions for fields added by GHD*

Field	Description
shelter	Yes/No field indicating whether there is a shelter at the bus stop
sh_install	When the shelter was installed
bench	Yes/No field indicating whether there is a bench at the bus stop
be_install	When the bench was installed
att_sw	Yes/No field indicating whether there is an attached sidewalk
asw_six_ft	Yes/No field indicating whether the attached sidewalk is six feet
signblade	Yes/No field indicating whether there is a sign blade
signmount	The width of the sign
sb_install	When the signblade was installed



Field	Description
farezone	What farezone the bus stop is in
pullout	Whether there is a pullout at the stop
community	The community the bus stop is in
facility	What type of facility the stop is
photo_year	Year the related photo was taken
yearadded	Year the bus stop was added
globalid	The id that relates the photos to a specific feature
created_date	An ESRI managed field showing when the feature was created (works in geodatabase)
created_user	An ESRI managed field showing which user created the feature (works in geodatabase)
last_edited_date	An ESRI managed field showing the date the feature was last edited (works in geodatabase)
last_edited_user	An ESRI managed field showing which user edited the feature (works in geodatabase)

## Domains

*Table 16: YN Domain*

Code	Description
Yes	Yes
No	No

*Table 17: FareZones Domain*

Code	Description
CC	Crescent City
G_H	Gasquet / Hiouchi
HC	Humboldt County
K	Klamath
O_RNP	Orick / Redwood N.P.
SR	Smith River

*Table 18: TransitFacility Domain*

Code	Description
T	Transit Hub / Center
B	Bus Stop

## Distribution Information

All distribution will be managed by the employees of Redwood Coast Transit Authority.

## Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:** August 4th, 2021

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>

# County Bridges Metadata

## Citation

This dataset was developed by GHD as an operational inventory for Del Norte County staff; it is a part of the Del Norte Regional Mapping Project initiated by the Del Norte Local Transportation Commission. Data was provided by the county and incorporated into ESRI format.

**Delivery Date:** June 25th, 2021

**Title:** County Bridges

**Abstract:** A point shapefile that contains the bridges maintained by the county and their attributes.

**Keywords:** Northern CA, Del Norte County, Local Bridges

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

A Google KML layer of the County maintained bridges was provided by County employees along with a PDF report from Caltrans that contained attributes for each bridge. These attributes were joined with the locations and exported as a shapefile. Bridge locations were “snapped” to the nearest road in the County Maintained Roads layer.

**Sources:** Caltrans, Del Norte County

## Spatial Reference

NAD 1983 State Plane California I FIPS 0401 (US Feet)

## Entity and Attributes

### Feature Classes

#### CountyBridges - Point

**Description:** Points that represent the locations of bridges in Del Norte County

*Table 19: CountyBridges Shapefile Field Detail*

Field Name	Alias	Data Type	Length
FID	Feature ID	Object ID	
Shape	Shape	Geometry	
Desc_	Description	Text	254
Bridge_Num	Bridge Number	Text	254
Feat_Int	Feature Intersected	Text	254
F_Carried	Facility Carried	Text	254

Field Name	Alias	Data Type	Length
Location	Location	Text	254
Year_Built	Year Built	Double	

### Field Descriptions

1. **Desc\_** - This field contains the pop-up info that was stored in the KML layer provided by the county

All other fields were provided in the local bridge inventory produced by Caltrans and provided to GHD by County employees.

## Distribution Information

All distribution will be managed by the employees of Del Norte County.

## Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:** June 10th, 2021

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>

# County Bike Lanes and OHV Roads Metadata

## Citation

This dataset was developed by GHD as an operational inventory of bike lanes and OHV roads for the employees of Del Norte County; it is a part of the Del Norte Regional Mapping Project initiated by the Del Norte Local Transportation Commission.

**Delivery Date:** Nov 8th, 2021

**Title:** Del Norte County Bike Facilities and OHV Roads Geodatabase

**Abstract:** This Geodatabase contains a polyline feature class that represents the bike lanes that are under Del Norte County's jurisdiction and another for the OHV roads within county borders.

**Keywords:** Transportation, Roads, Northern CA, Del Norte County, Bike Lanes, OHV

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

These bike lane lines and roads were not surveyed in the field and should be considered approximate.

**Sources:** Bike lane shapefiles were originally received from a prior consultant that worked on the Del Norte Active Transportation plan: these represented the bike lanes that were developed and included in the 2017 ATP plan update. Using this as a starting point GHD then incorporated the bike lanes that were listed in the 2020-016 resolution, as well as new bike lanes suggested by County employees. OHV roads were taken from the county road inventory delivered prior to this dataset.

TIGER Documentation: [https://www2.census.gov/geo/pdfs/maps-data/data/tiger/tgrshp2020/TGRSHP2020\\_TechDoc.pdf](https://www2.census.gov/geo/pdfs/maps-data/data/tiger/tgrshp2020/TGRSHP2020_TechDoc.pdf)

## Spatial Data Organization

Google and ESRI Imagery base maps were used when verifying locations of bike lanes and their surrounding environments.

## Spatial Reference

NAD 1983 State Plane California I FIPS 0401 (US Feet)

## Entity and Attributes

### Feature Classes

#### **DNC\_BikeFacilities - Polyline**

**Description:** All bike facilities under county jurisdiction

*Table 20: Field detail for DNC\_BikeFacilities feature class*

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID	OBJECTID	Object ID	FALSE		
fullname	fullname	Text	TRUE		100
facclass	facclass	Text	TRUE	FACCLASS	20
desc	desc	Text	TRUE		1000
notes	notes	Text	TRUE		1000
ownedby	ownedby	Text	TRUE		255
maintby	maintby	Text	TRUE		255
lastupdate	lastupdate	Date	TRUE		
lasteditor	lasteditor	Text	TRUE		255
sideofroad	sideofroad	Text	TRUE	SIDEOFROAD	255
Shape	Shape	Geometry	TRUE		
Shape_Length	Shape_Length	Double	TRUE		

### Field Descriptions

- **FULLNAME:** The name of the road that was taken from the DNC roads inventory. Bike lanes are segmented by road.
- **FACCLASS:** facility class of the bike facility. The facility class of the feature may not exactly match the Caltrans definition of each class.
- **DESC:** a description field to hold the “from” and “to” streets of the facility.
- **NOTES:** a free form notes field to be used to record any applicable notes
- **OWNEDBY:** who owns the bike lane
- **MAINTBY:** who maintains the bike lane
- **LASTUPDATE:** an auto-populating field that records the last time the feature was updated. (only auto-populates while “editor tracking” is enabled and feature class is in a File Geodatabase)
- **LASTEDITOR:** an auto-populating field that records the system username of the individual who last updated the feature. (only auto-populates while “editor tracking” is enabled and feature class is in a File Geodatabase)
- **SIDEOFROAD:** a temporary stand in for a geometrically calculated side of road using cardinal directions. Represents which side of the road the facility class applies to. Side of road is usually determined by the direction the line was digitized in; the direction of digitization is determined by how the addresses in a municipality are laid out. Lines will typically follow the direction of the ascending addresses as they are laid out in the parcels; this direction was not known for this exercise so the cardinal direction was used.

### DNC\_OHVRoads – Polyline

**Description:** OHV roads were extracted from the DN county roads inventory that was delivered prior to this dataset. They represent the roads that were presented in the OHV roads report provided by DN employees.

*Table 21: Field detail for the DNC\_OHVRoads Polyline feature class*

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID	OBJECTID	Object ID	FALSE		
OHVID	OHVID	Long	TRUE		

Field Name	Alias	Data Type	Allow Null	Domain	Length
OHVNAME	OHVNAME	Text	TRUE		255
FULLNAME	FULLNAME	Text	TRUE		100
SEGMENT	SEGMENT	Text	TRUE		255
MILES	MILES	Double	TRUE		
NOTES	NOTES	Text	TRUE		1000
Shape	SHAPE	Geometry	TRUE		
Shape_Length	Shape_Length	Double	TRUE		

## Field Descriptions

These attributes also match those that were provided by the County.

- **OHVID:** number of appearance in the OHV facilities plan
- **OHVNAME:** Title in the OHV Facilities Plan
- **FULLNAME:** road name from the county inventory
- **SEGMENT:** segment name from the county inventory
- **MILES:** number of miles the road segment stretches
- **NOTES:** a general notes field

## Domains

*Table 22: FACCLASS Domain*

Code	Description
Class I	Class I
Class II	Class II
Class III	Class III
Class VI	Class VI

*Table 23: SIDEOFROAD Domain*

Code	Description
BOTH	BOTH
EAST	EAST
WEST	WEST
NORTH	NORTH
SOUTH	SOUTH

## Distribution Information

All distribution will be managed by the employees of Del Norte County

## Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:** November 8th, 2021

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>



# Right of Way Encumbrances Metadata

## Citation

This dataset was developed by GHD as an inventory for the employees of Del Norte County; it is a part of the Del Norte Regional Mapping Project initiated by the Del Norte Local Transportation Commission. Right of ways polygons were digitized by review of Parcel maps and Legal boundaries provided by the County.

**Delivery Date:** February 4th, 2021

**Title:** Del Norte County Right of Way Encumbrances

**Abstract:** This Geodatabase contains a polygon feature class that represents county right of way and a table of attachments that are related to those polygons.

**Keywords:** Right-of-way, Parcel maps, County, Del Norte County

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

The right of way polygons were digitized through a combination of manual inspection of parcel maps and meets and bounds presented in legal descriptions. All encumbrances herein are to be considered approximate.

**Sources:** All parcel maps had been previously scanned by county employees and were provided to GHD.

## Spatial Reference

NAD 1983 State Plane California I FIPS 0401 (US Feet)

## Entity and Attributes

### Feature Classes

#### Encumbrances - Polygon

**Description:** Right of way Encumbrances within Del Norte.

Table 24: Field detail for Encumbrances Feature Class

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID	OBJECTID	Object ID	FALSE		
Shape	SHAPE	Geometry	TRUE		
Shape_Length	Shape_Length	Double	TRUE		
Shape_Area	Shape_Area	Double	TRUE		
docname	Document Name	Text	TRUE		5000
desc	Encumbrance Description	Text	TRUE		5000
encumtype	Encumbrance Type	Text	TRUE		5000

Field Name	Alias	Data Type	Allow Null	Domain	Length
digimethod	Digitization Method	Text	TRUE		5000
digidate	Digitization Date	Date	TRUE		
notes	Notes	Text	TRUE		10000
apn	APN	Text	TRUE		255

## Field Descriptions

Attributes were discussed with County during a meeting and describe the Encumbrance.

6. Document Name – The original PDF name that the Encumbrance was referenced in; the polygon was not necessarily taken from this document, it could've been digitized based on a parcel map that was referenced in this document.
7. Encumbrance Description – a generic text field to describe the encumbrance that the polygon represents.
8. Encumbrance Type – A uniform field that includes values that can be used to symbolize a map with the encumbrance type.
9. Digitization Method – The steps taken to digitize the encumbrance polygon
10. Digitization Date – date the polygon was digitized
11. APN – the APN of the parcel (if singular) that the encumbrance applies to according to the document it was taken from

## Distribution Information

All distribution will be managed by the employees of Del Norte County

## Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:** June 10th, 2021

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>

# Call Boxes Metadata

## Citation

This dataset was developed by GHD as an operational inventory for the employees of the Del Norte Local Transportation Commission (DNLTC); it is a part of the Del Norte Regional Mapping Project initiated by the DNLTC. A list of Callboxes in the annual SAFE report was provided by the DNLTC and was converted into an ESRI geodatabase, and shapefile. Photos taken at each site are included within a sub directory called “photos.”

**Delivery Date:** June 30th, 2021

**Title:** Del Norte Call Boxes

**Abstract:** A point shapefile that represents each callbox and its attributes. A Geodatabase is also provided with a related table of photos taken in the field.

**Keywords:** Roads, Northern CA, Del Norte County, Call Boxes

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

The DNLTC provided a list of the Call boxes and their proximity to the nearest Caltrans postmile along the highway; using the postmile system to get to the call boxes approximate location, Google Street View imagery was accessed to place a point that is within 20 – 30 feet of each call box. After making that initial layer, field verification with a high accuracy GNSS unit was undertaken. Each point will be within 1-6 feet of the actual location of each callbox. Photos were taken of the sign blade in the field to verify the sign number.

**Sources:** Del Norte Local Transportation Commission, Google Street View

## Spatial Data Organization

Google and ESRI Imagery, and Google Street view was used when verifying locations of callboxes.

## Spatial Reference

NAD 1983 State Plane California I FIPS 0401 (US Feet)

## Entity and Attributes

### Feature Classes

#### Callboxes - Point

**Description:** A point feature class that represents Callboxes in Del Norte.

Table 25 [Insert Table Caption]

Field Name	Alias	Data Type	Allow Null	Length
objectid	OBJECTID	Object ID	FALSE	
boxani	BoxANI	Long	TRUE	
shape	SHAPE	Geometry	TRUE	
globalid	globalid	Global ID	FALSE	
created_date	created_date	Date	TRUE	
created_user	created_user	Text	TRUE	255
last_edited_date	last_edited_date	Date	TRUE	
last_edited_user	last_edited_user	Text	TRUE	255
Sign	Sign	Text	TRUE	255
Phone_Number	Phone Number	Text	TRUE	255
Location	Location	Text	TRUE	255
F2017_18_Calls	2017-18 Calls	Double	TRUE	
F2018_19_Calls	2018-19 Calls	Double	TRUE	
F2019_20_Calls	2019-20 Calls	Double	TRUE	

### Field Descriptions

Fields added by GHD are the editor tracking and identification fields, created\_date, created\_user, last\_edited\_date, last\_edited\_user, and globalid; all other fields were already existing and were provided by DNLTC.

## Distribution Information

All distribution will be managed by the employees of DNLTC

## Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:** June 10th, 2021

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>

# Pavement Condition Index Metadata

## Citation

The Pavement Condition Index was originally provided as a part of the excel file that described each road segment; this file was used for the creation of the County Maintained Roads feature service that now exists within ArcGIS Online. Fields that made up the pavement condition index were separated from the main spatial table and made into related tables

**Delivery Date:** 5/20/2022

**Title:** County Maintained Roads with PCI

**Abstract:** County Maintained Roads spatial table with a related table of PCI features.

**Keywords:** Pavement Condition Index

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

GHD received spreadsheets for the years 2017 and 2020. Fields that would be updated each year were separated from the spatial table and made into a related table. A detailed breakdown of fields exists in the below tables. It's important to note that the primary identifiers for some road segments were modified from what the County had originally provided; a detailed change log was provided with this metadata to resolve any discrepancies, and allow easy joining of attributes between the datasets.

Further information on the changes made to each primary identifier can be found in the excel file included within this metadata file. Here is a description of each tab within that file:

1. 2020 With Corrections – This tab is the “PMS 2020” excel file that was provided by the County; it represents the Pavement Condition Index in 2020. each row whose primary identifier was modified is highlighted in the file.
2. 2017 Edited During Task 1 – This tab is the sheet that was used to make the original County Maintained Roads spatial file, “edited” in this context means that the primary identifiers were modified.
3. Related Table – This tab is the related table that currently exists within the feature service.
4. ChangeLog – a detailed breakdown of each change to the primary identifiers and their justification
5. 2017 Original Data – the data provided at the onset of the project, used to make the County Maintained Roads file

Listed below is an email sent on 3/11/2022 that explains the color coding of each field within the excel file and further context of surrounding the decision to make the Pavement Condition Index a related table.

*Hey Rosanna,*

*We can talk about the items below at the meeting at 330 today. I will explain in detail.*

*I wanted to follow up again with another topic discussed during our meeting a week ago: how to store attributes that are related to a single feature but are updated periodically within ArcGIS Online. There are several ways to do this and Ill discuss the implications for each.*

1. *Related Table: Amber had mentioned that we can store frequently updated attributes for which you need a record of to be kept ready for review in a related table. Features in the parent table have an ID (in our case the SegmentID) which a record in the related table uses to identify which feature it belongs to in the parent table. As is shown in the “RelatedFeaturesPopup” GIF I attached, you can easily view related records in a table within ArcGIS Online. Editing records in both the parent and child table works the same way. To add new features to the related table, we can collect data in the field and append it to the related table on the home page of the ArcGIS Online item, attached here as “AppendFeaturesToTable” PNG.*
  
2. *Adding Columns: Depending on how many columns you are updating though, you could also add new columns for the coming years of updates. This can be cumbersome to work with, but would allow easy visualization within the viewer, and if you are only consistently updating a single column every year, then adding a single new column every year, is not necessarily a bad choice. I attached an excel file that has the County Maintained Roads spreadsheet in it. The first sheet “2020 with corrections” contains the 2020 data delivered with the corrections to the segment identifiers that were made during the creation of the County Maintained Roads Layer. I color coded the columns to indicate which I thought were more static , those that would most likely be updated frequently , and those that were only provided in the 2020 data, and not in the 2017 data . Please comment on whether you agree with these choices or whether you think that the columns in those respective categories differ. There is also a “Related Table” sheet that is an excel view of what the related table would look like.*
  
3. *Storing separate versions of the layer per year: Making a new feature layer for each year could be applicable if the segment geometries are changing consistently and you need to keep versions of the data. This however will also increase storage costs (relatively small overall) and also would increase the number of items in the portal that represent the same entity which could cause confusion.*

*As always there are pros and cons for each strategy – I’m of the opinion that the most effective strategy is going to be that which is the easiest to maintain and understand for all parties who are actually doing the maintenance. Feel free to comment your opinion on any of the above strategies.*

*PS – I also attached an example of using the smart widget in ArcGIS Online “CopyFeaturesFromExisting” to copy existing geometries – we briefly talked about trace in ArcGIS Online, so I thought I’d mention this other strategy for matching an existing feature’s geometry.*

**Sources:** County of Del Norte

## Spatial Data Organization

Google and ESRI Imagery base maps were used when verifying locations of streets and their surrounding environments.

## Spatial Reference

NAD 1983 State Plane California I FIPS 0401 (US Feet)

# Entity and Attributes

## Feature Classes

### DNCRoadsInventory

**Description:** Roads Inventory

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID	OBJECTID	Object ID	FALSE		
Shape	Shape	Geometry	TRUE		
fullname	Full Name	Text	TRUE		100
segmentid	Segment Identifier	Text	TRUE		255
Shape_Length	Shape_Length	Double	TRUE		
lenmiles	Length In Miles	Double	TRUE		
aheadrd	Ahead Road	Text	TRUE		255
backrd	Back Road	Text	TRUE		255
drainrating	Drainage Rating	Text	TRUE	DrainRating	255
surftype	Surface Type	Text	TRUE	RdSurfaceType	255
surfwidth	Surface Width	Double	TRUE		
shldrwidth	Shoulder Width	Double	TRUE		
curbgutter	Curb & Gutter	Text	TRUE		255
sidewalk	Sidewalk	Text	TRUE		255
Last_Editor	Last_Editor	Text	TRUE		255
Last_Edit_Date	Last_Edit_Date	Date	TRUE		
mainsched	Maintenance Schedule	Date	TRUE		
swinit_yr	Surface Width Initials Year	Text	TRUE		255
shwinit_yr	Shoulder Width Initials Year	Text	TRUE		255

### Field Descriptions

### PCI Related Table

**Description:** a detailed field breakdown for the PCI related table is not provided here because the attributes were provided by the County.

## Distribution Information

## Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:**

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>



# Road Maintenance Areas Metadata

## Citation

**Delivery Date:** 5/20/2022

**Title:** County Road Maintenance Areas

**Abstract:** a GIS polygon layer that delineates the areas the County has responsibility to maintain roads.

**Keywords:** Road Maintenance, Del Norte County

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

GHD was provided a list of 10 different road maintenances areas with textual descriptions of their area. GHD digitized these areas by starting with the County boundary and splitting it into 10 areas based on the geographic descriptions provided by the County. The dataset was delivered to the County for further refinement.

**Sources:** Del Norte County Boundary Layer from the Census

## Spatial Data Organization

Google and ESRI Imagery base maps were used when verifying locations of streets and their surrounding environments.

## Spatial Reference

WGS84 Web Mercator Auxiliary sphere

## Entity and Attributes

### Feature Classes

#### Road Maintenances Areas

**Description:**

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID	OBJECTID	Object ID	FALSE		
Shape	SHAPE	Geometry	TRUE		
Location	Location	Text	TRUE		255
Shape_Length	Shape_Length	Double	TRUE		
Shape_Area	Shape_Area	Double	TRUE		
Title	Title	Text	TRUE		255
AreaNum	AreaNum	Short	TRUE		

## Field Descriptions

Fields that are system generated [Shape, ObjectID, GlobalID, Shape\_Length] are not included in this list

1. Location – the text description that was provided by the County which was used to digitize the original shapes
2. Title – The Areas title also provided by the County
3. AreaNum – an arbitrary numerical identifier to each area

## Distribution Information

## Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:**

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>

Regards

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# VMT Encumbrance Metadata

## Citation

Employees at the County provided GHD with documents exemplifying requirements surrounding SB743 implementation in Del Norte. GHD made a layer based off of the County parcels that will be used to store these documents and their spatial features. When the County issues a *Notice of Requirement for SB743 implementation* to developers there is often a group of parcels that will be related to that specific issuance. Each specific parcel that has a related VMT encumbrance will have the issued notice of requirement attached to it, as well as a space for the documents from the County Recorder that release the parcel from the encumbrance.

**Delivery Date:** 5/20/2022

**Title:** VMT Encumbrances

**Abstract:** This layer tracks the parcels that have been chosen for VMT encumbrances and their associated documents.

**Keywords:** VMT Mitigation

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

**Sources:** Del Norte County Parcel Layer

## Spatial Data Organization

## Spatial Reference

WGS84 Web Mercator Auxiliary Sphere

## Entity and Attributes

### Feature Classes

#### VMT Encumbrances

**Description:** A polygon feature class of areas where a notice has been given that VMT mitigation must take place. Related documents are stored as attachments.

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID	OBJECTID	Object ID	FALSE		
Shape	Shape	Geometry	TRUE		
Shape_Length	Shape_Length	Double	TRUE		
Shape_Area	Shape_Area	Double	TRUE		
ENRECDOCNUM	Encumbrance Recorder's Doc #	Text	TRUE		255
RECDENDOC	Recorded Encumbrance	Text	TRUE		255

Field Name	Alias	Data Type	Allow Null	Domain	Length
	Doc PDF				
ENRELRECDNUM	Encumbrance Release Recorder's Doc #	Text	TRUE		255
RECENRELDNUM	Recorded Encumbrance Release Doc PDF	Text	TRUE		255

### Field Descriptions

Fields that are system generated [Shape, ObjectID, Shape\_Length] are not included in this list.

1. ENRECDNUM – Encumbrance Recorder's Doc #, the document number of the recorders document
2. RECENRELDNUM – Recorded Encumbrance Doc PDF, the name of the PDF
3. ENRELRECDNUM - Encumbrance Release Recorder's Doc #
4. RECENRELDNUM - Recorded Encumbrance Release Doc PDF

## Distribution Information

### Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:**

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>

# Transit Analysis Metadata

## Citation

These datasets are the results of digitizing and network / demographics analysis by GHD for the Redwood Coast Transit Authority during the DNLTC Regional Transportation Mapping Project.

**Delivery Date:** March 2022

**Title:** Transit Analysis Layers

**Abstract:** A collection of layers consisting of demographically enriched feature classes and a digitized feature class representing the ADA service area of RTCA.

**Keywords:** RCTA, Transit Analysis

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

Buffers and network distances were derived from the TIGER roads layer and the bus routes offered in RCTA's GTFS feed.

**Sources:**

## Spatial Data Organization

## Spatial Reference

NAD 1983 State Plane California I FIPS 0401 (US Feet)

## Entity and Attributes

### Demographic Variables

Demographic attributes that were queried based on the quarter mile network / Euclidean distances from the RCTA bus routes are included in most feature classes in this collection. To derive the percentages the ESRI demographics service was queried again but with the spatial extent of the entire counties of Humboldt and Del Norte. Those spatial files are also included in this collection. The fields that are shared between most feature classes are listed once below for brevity.

Field Name	Alias	Data Type	Allow Null	Domain	Length
populationtotals_hhpop_cy	2021 Household Population	Double	TRUE		
householdtype_acspop65	2019 Population Age 65+ (ACS 5-Yr)	Double	TRUE		
disability_acshhnodis	2019 HHs w/No Persons w/Disability (ACS 5-Yr)	Double	TRUE		
disability_acshhdis	2019 HHs w/1+ Persons w/Disability (ACS 5-Yr)	Double	TRUE		
employmentunemployment_unemp_cy	2021 Unemployed Population 16+	Double	TRUE		

Field Name	Alias	Data Type	Allow Null	Domain	Length
commute_acsbus	2019 Workers 16+: Bus (ACS 5-Yr)	Double	TRUE		
commute_acspubtran	2019 Workers 16+: Public Transportation (ACS 5-Yr)	Double	TRUE		
commute_acsbus	2019 Workers 16+: Bus (ACS 5-Yr)	Double	TRUE		
commute_acspubtran	2019 Workers 16+: Public Transportation (ACS 5-Yr)	Double	TRUE		
commute_acsavgtwrk	2019 Avg Commute to Work (ACS 5-Yr)	Double	TRUE		
commute_acsdralone	2019 Workers 16+: Drove Alone (ACS 5-Yr)	Double	TRUE		
households_acshhbpov	2019 HHs: Inc Below Poverty Level (ACS 5-Yr)	Double	TRUE		
householdincome_medhinc_cy	2021 Median Household Income	Double	TRUE		
populationtotals_totpop_cy	2021 Total Population	Double	TRUE		

## Feature Classes

### ADA Service Area

**Description:** This is the area that the RCTA currently serves the ADA population with the Dial-a-ride service.

#### Field Descriptions

All fields in this feature class are system generated.

### BusRoutes\_Euclidean\_ServiceArea\_Enriched

**Description:** This feature class represents a quarter mile and three quarter mile buffer from the RCTA's bus routes split on the county line. It was enriched with ESRI's demographic service. The buffer was Euclidean or "as the crow flies."

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID	OBJECTID	Object ID	FALSE		
Shape	Shape	Geometry	TRUE		
distance	distance	Text	TRUE		255
county	county	Text	TRUE		255
aggregationMethod	aggregationMethod	Text	TRUE		256
Shape_Length	Shape_Length	Double	TRUE		
Shape_Area	Shape_Area	Double	TRUE		

#### Field Descriptions

Fields that are system generated [Shape, ObjectID, GlobalID, Shape\_Length, Shape\_Area] are not included in this list. The fields that are listed in section 5.1 are also included in the table.

1. Distance – the buffer distance the feature was derived from
2. County – the county the feature is within
3. aggregationMethod – the method that ESRI used to aggregate the demographic figures

## BusRoutes\_Network\_ServiceArea\_Enriched

**Description:** This feature class represents a quarter mile and three quarter mile buffer from the RCTA’s bus routes split on the county line. It was enriched with ESRI’s demographic service. The buffer was derived from network analysis, so the distances represent distance along the road network.

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID	OBJECTID	Object ID	FALSE		
Shape	Shape	Geometry	TRUE		
ToBreak	ToBreak	Double	TRUE		
aggregationMethod	aggregationMethod	Text	TRUE		256
Shape_Length	Shape_Length	Double	TRUE		
Shape_Area	Shape_Area	Double	TRUE		
county	county	Text	TRUE		255

### Field Descriptions

Fields that are system generated [Shape, ObjectID, GlobalID, Shape\_Length, Shape\_Area] are not included in this list. The fields that are listed in section 5.1 are also included in the table.

1. ToBreak – the number of feet the feature is buffered from in network distance.
2. aggregationMethod – the method that ESRI used to aggregate the demographic figures
3. county - the county the feature is within

## Domains

## Distribution Information

## Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:**

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>

# Sidewalks Metadata

## Citation

This dataset was developed by GHD for planning purposes during the DNLTTC Regional Transportation Mapping Project.

**Delivery Date:** 5/20/2022

**Title:** County Maintained Sidewalks

**Abstract:** Sidewalks that were digitized from Google aerial imagery then field verified in April.

**Keywords:** Sidewalks, Del Norte County

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

Before digitization County and City engineering standards were received by GHD. Attempts to conform to the standards were made but the resulting lines did not always line up with the imagery. The Sidewalks should be used for planning purposes only. Sidewalks were digitized using the ArcGIS for Professionals application in a desktop environment.

The width of the sidewalks was captured in the field. Sidewalks were not measured precisely – they were marked as being either smaller or wider based off of visual inspection. A thinner sidewalk would be between 0-6 feet, a wider sidewalk would be between 6 feet and above.

**Sources:** Aerial Imagery, Desktop Digitizing

## Spatial Data Organization

Google and ESRI Imagery base maps were used when verifying locations of sidewalks and their surrounding environments.

## Spatial Reference

WGS84 Web Mercator Auxiliary Sphere

## Entity and Attributes

### Feature Classes

#### CountySidewalks\_20220511

**Description:** Sidewalks digitized by GHD with Google imagery that were later verified in the field.



Table 26: Field detail in the CountySidewalks Feature Class

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID		Object ID	FALSE		
Shape		Geometry	TRUE		
Notes	Notes	Text	TRUE		255
ImageryYear	ImageryYear	Long	TRUE		
GlobalID	GlobalID	Global ID	FALSE		
width_text	width_text	Text	TRUE	width_text	255
Ownership	Ownership	Text	TRUE	Ownership	255
Shape_Length		Double	TRUE		

### Field Descriptions

Fields that are system generated [Shape, ObjectID, GlobalID, Shape\_Length] are not included in this list

1. Notes – GHD made notes that were applicable to desktop digitizing or were taken in the field.
2. ImageryYear – During desktop digitizing GHD staff were keeping track of what street view imagery year was being used while recording features, this field represents that year.
3. width\_text – The text of the width domain whose value is either “Thinner” or “Wider”
4. Ownership – Whether the feature is maintained by the City or the County.

## Domains

Table 27: width\_text field domain

Code	Description
Thinner	Sidewalks were between 0 – 6 feet
Wider	Sidewalks are 6 feet or greater

Table 28: Ownership Domain

Code	Description
County	County
City	City

## Distribution Information

## Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:** 5/20/2022

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>

# Driveways Metadata

## Citation

This dataset represents the driveways that exist within the County or City transportation right of way. They were digitized by using Google Maps and Street view Imagery. The Driveways should be used for planning purposes only. Driveways were digitized using the ArcGIS for Professionals application in a desktop environment.

**Delivery Date:** 5/20/2022

**Title:** County and City Driveways

**Abstract:** Driveways within the transportation right of way

**Keywords:** Driveways,

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

Driveways were initially digitized within a desktop environment using Google street view imagery, then their surface type was verified in the field.

**Sources:** Desktop Digitizing, Google Street view Imagery

## Spatial Reference

WGS84 Web Mercator Auxiliary Sphere

## Entity and Attributes

### Feature Classes

#### CountyDriveways\_20220511

**Description:** Driveways in the transportation right of way

Table 29: Field Detail for CountyDriveways feature class

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID		Object ID	FALSE		
Shape		Object ID	FALSE		
SurfaceType	SurfaceType	Geometry	TRUE	SurfaceType	255
GHD_Notes	GHD_Notes	Text	TRUE		255
ImageryYear	ImageryYear	Text	TRUE		
Use_Type	Assumed Use Type	Short	TRUE	REAL_Type	255
Slope	Slope	Text	TRUE	Slope	255
ESRIGNSS_POSITIONSOURCETYPE	Position source type	Text	TRUE	ESRI_POSITIONSOURCETYPE_DOMAIN	

Field Name	Alias	Data Type	Allow Null	Domain	Length
ESRIGNSS_LATITUDE	Latitude	Short	TRUE		
ESRIGNSS_LONGITUDE	Longitude	Double	TRUE		
ESRIGNSS_H_RMS	Horizontal Accuracy (m)	Double	TRUE		
ESRIGNSS_V_RMS	Vertical Accuracy (m)	Double	TRUE		
ESRIGNSS_FIXDATETIME	Fix Time	Double	TRUE		
ESRIGNSS_FIXTYPE	Fix Type	Date	TRUE	ESRI_FIX_TYPE_DOM AIN	
GlobalID	GlobalID	Short	TRUE		
Ownership	Ownership	Global ID	FALSE	Ownership	255

### Field Descriptions

Fields that are system generated [Shape, ObjectID, GlobalID, Shape\_Length] are not included in this list.

The fields whose names are prefixed with “ESRIGNSS\_” are documented by ESRI at the following link:

<https://pro.arcgis.com/en/pro-app/2.8/tool-reference/data-management/add-gps-metadata-fields.htm> . They will only be filled out if a feature was captured in the field. The field are associated with data taken from the GNSS receiver. They are not applicable to line features.

1. SurfaceType – the type of surface at the interface of the residential driveway and transportation right of way.
2. GHD\_Notes – Notes taken by GHD either in the field or while desktop digitizing.
3. ImageryYear – During desktop digitizing GHD staff were keeping track of what street view imagery year was being used while recording features, this field represents that year.
4. Use\_Type – the assumed use type of the building the driveway leads to
5. Slope – whether the slope of the driveway is broken or continuous
6. Ownership – Whether the feature is maintained by the City or the County.

### Domains

Table 30: REAL\_Type domain

Code	Description
C	Commercial
R	Residential

Table 31: Slope Domain

Code	Description
B	Broken - The broken slope domain refers to the newer style of driveway in which the

Code	Description
	continuous slope in broken. This not only allows for mobility vehicles/devices but encourages slow-speed turns into the driveway.
C	Continuous - The continuous slope domain refers to the older style of driveway in which the slope was continuous. This may encourage high speed turns or pose an impediment to mobility vehicles/devices.

*Table 32: SurfaceType Domain*

Code	Description
A	Asphalt
C	Concrete
D	Dirt

## Distribution Information

## Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:**

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>

# Curb Ramps Metadata

## Spatial Data Organization

Google and ESRI Imagery base maps were used when verifying locations of driveways and their surrounding environments.

## Citation

This dataset represents the Curb ramps that are currently installed in the County Transportation right of way.

**Delivery Date:** 5/20/2022

**Title:** County Curb Ramps

**Abstract:** Curb Ramps owned by the County

**Keywords:** Curbramps, ROW

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

Curb ramps were initially digitized using Google Street view imagery and later verified in the field.

**Sources:** Desktop Digitizing, Google Imagery

## Spatial Data Organization

Google and ESRI Imagery base maps were used when verifying locations of curb ramps and their surrounding environments.

## Spatial Reference

WGS84 Web Mercator Auxiliary Sphere

## Entity and Attributes

### Feature Classes

#### CountyCurbramps\_20220511

**Description:** Curb Ramps within the Transportation right of way

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID		Object ID	FALSE		
Shape		Geometry	TRUE		

Field Name	Alias	Data Type	Allow Null	Domain	Length
Ramp	Ramp	Text	TRUE	Ramp	64
ImageryYear	ImageryYear	Long	TRUE		
NotesGHD	NotesGHD	Text	TRUE		255
ESRIGNSS_POSITIONSOURCE	Position source type	Short	TRUE	ESRI_POSITIONSOURCE	
ESRIGNSS_LATITUDE	Latitude	Double	TRUE		
ESRIGNSS_LONGITUDE	Longitude	Double	TRUE		
ESRIGNSS_H_RMS	Horizontal Accuracy (m)	Double	TRUE		
ESRIGNSS_V_RMS	Vertical Accuracy (m)	Double	TRUE		
ESRIGNSS_FIXDATETIME	Fix Time	Date	TRUE		
ESRIGNSS_FIXTYPE	Fix Type	Short	TRUE	ESRI_FIX_TYPE_DOMAIN	
GlobalID	GlobalID	Global ID	FALSE		
Ownership	Ownership	Text	TRUE	Ownership	255

### Field Descriptions

Fields that are system generated [Shape, ObjectID, GlobalID, Shape\_Length] are not included in this list.

The fields whose names are prefixed with “ESRIGNSS\_” are documented by ESRI at the following link:

<https://pro.arcgis.com/en/pro-app/2.8/tool-reference/data-management/add-gps-metadata-fields.htm> . They will only be filled out if a feature was captured in the field. The field are associated with data taken from the GNSS receiver. They are not applicable to line features.

1. Ramp – The type of curb ramp in question. These categories were classified as “Newer” or “Older” based on whether the curb ramp had a rumble strip.
2. ImageryYear – During desktop digitizing GHD staff were keeping track of what street view imagery year was being used while recording features, this field represents that year.
3. NotesGHD - Notes taken by GHD either in the field or while desktop digitizing.
4. Ownership – Whether the feature is maintained by the City or the County.

### Domains

Code	Description
U	Unimproved
O	Older
N	Newer

## Distribution Information

### Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:**

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>

## Drainage Features Metadata

### Citation

This dataset represents the drainage features within the transportation ROW. Different classes of features exist within each feature class. Features were originally derived from Google satellite and street view imagery; later they were verified in the field.

**Delivery Date:** 5/20/2022

**Title:**

**Abstract:** Line and Point feature classes representing the drainage points within the right of way.

**Keywords:** Drainage Features

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

### Data Quality and Sources

Drainage Features were initially digitized using Google Street view imagery and later verified in the field.

**Sources:** Desktop Digitizing, Google Imagery

### Spatial Data Organization

Google and ESRI Imagery base maps were used when verifying locations of drainage features and their surrounding environments.

### Spatial Reference

WGS84 Web Mercator Auxiliary Sphere



# Entity and Attributes

## Feature Classes

### CountyDrainagePoints\_20220511

**Description:** Drainage Points within the County transportation ROW

Table 33: Field Detail for CountyDrainageLines Feature Class

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID		Object ID	FALSE		
Shape		Geometry	TRUE		
Type	Type	Text	TRUE	Drainage_Facilites_Points	255
Notes	Notes	Text	TRUE		255
ImageryYear	ImageryYear	Short	TRUE		
ESRIGNSS_POSITIONSOURCE	Position source type	Short	TRUE	ESRI_POSITIONSOURCETYPE_DOMAIN	
ESRIGNSS_LATITUDE	Latitude	Double	TRUE		
ESRIGNSS_LONGITUDE	Longitude	Double	TRUE		
ESRIGNSS_H_RMS	Horizontal Accuracy (m)	Double	TRUE		
ESRIGNSS_V_RMS	Vertical Accuracy (m)	Double	TRUE		
ESRIGNSS_FIXDATETIME	Fix Time	Date	TRUE		
ESRIGNSS_FIXTYPE	Fix Type	Short	TRUE	ESRI_FIX_TYPE_DOMAIN	
GlobalID	GlobalID	Global ID	FALSE		
Ownership	Ownership	Text	TRUE	Ownership	255

### Field Descriptions

Fields that are system generated [Shape, ObjectID, GlobalID, Shape\_Length] are not included in this list.

The fields whose names are prefixed with “ESRIGNSS\_” are documented by ESRI at the following link:

<https://pro.arcgis.com/en/pro-app/2.8/tool-reference/data-management/add-gps-metadata-fields.htm> . They will only be filled out if a feature was captured in the field. The field are associated with data taken from the GNSS receiver. They are not applicable to line features.

1. Type – the type of drainage point feature (Drop Inlet, Curb cut etc...)
2. Notes - Notes taken by GHD either in the field or while desktop digitizing.
3. ImageryYear – During desktop digitizing GHD staff were keeping track of what street view imagery year was being used while recording features, this field represents that year.
4. Ownership – Whether the feature is maintained by the City or the County.

### CountyDrainageLines\_20220511

**Description:** Drainage Lines within the County transportation ROW

Table 34: Field Detail for CountyDrainagePoints Feature Class

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID		Object ID	FALSE		
Shape		Geometry	TRUE		
Type	Type	Text	TRUE	Drainage_Facilites_Line	255
Notes	Notes	Text	TRUE		255
ImageryYear	Imagery Year	Text	TRUE		255
GlobalID	GlobalID	Global ID	FALSE		
Ownership	Ownership	Text	TRUE	Ownership	255
Shape_Length		Double	TRUE		

### Field Descriptions

1. Type – the type of drainage line feature (Curb etc...)
2. Notes - Notes taken by GHD either in the field or while desktop digitizing.
3. ImageryYear – During desktop digitizing GHD staff were keeping track of what street view imagery year was being used while recording features, this field represents that year.
4. Ownership – Whether the feature is maintained by the City or the County.

## Domains

Table 35: Drainage\_Facilities\_Point Domain

Code	Description
Cross	Cross gutter
Curb	Curb Gutter
Ditch	Ditch
Culvert	Culvert
Culvert / Ditch	Culvert / Ditch – Where there was a continuous water line that flowed from open ditch to culvert when crossing driveways or the road

Table 36: Drainage\_Facilities\_Line Domain

Code	Description
CC	Curb Cut
Combo	Combined Drop Inlet and Curb Cut
DI	Drop Inlet

Code	Description
GSI	Green Storm Water Infrastructure

## Distribution Information

## Metadata Reference

**Metadata Contact:** Zach Porteous, zach.porteous@ghd.com

**Metadata Date:**

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>

## Barriers in Sidewalk Metadata

### Citation

This dataset represents the barriers that exist within the transportation right of way. They were collected in the field April 2022. Barriers are defined as permanent fixtures that are not at least 3 feet from the edge of the curb. The barriers should be used for planning purposes only.

**Delivery Date:** 5/20/2022

**Title:** Barriers within the Sidewalk

**Abstract:** permanent fixtures in the sidewalk that are not at least 3 feet from the edge of the curb.

**Keywords:** Driveways,

**Point of Contact:** Zach Porteous, zach.porteous@ghd.com

## Data Quality and Sources

Barriers were collected in the field with a sub-meter resolution GNSS receiver. The length from the edge of the curb to the barrier was measured with a tape measure; photos were taken of each barrier and stored within this layer.

**Sources:** GHD Staff Data Collection

## Spatial Data Organization

### Spatial Reference

WGS84 Web Mercator Auxiliary Sphere

# Entity and Attributes

## Feature Classes

### CountyBarriers\_20220511

**Description:** Driveways in the transportation right of way

Table 37: Field Detail for CountyBarriers feature class

Field Name	Alias	Data Type	Allow Null	Domain	Length
OBJECTID		Object ID	FALSE		
Shape		Geometry	TRUE		
type	Type	Text	TRUE	BarrierType	255
notes	notes	Text	TRUE		255
ESRIGNSS_POSITIONSOURCETYPE	Position source type	Short	TRUE	ESRI_POSITIONSOURCETYPE_DOMAIN	
ESRIGNSS_LATITUDE	Latitude	Double	TRUE		
ESRIGNSS_LONGITUDE	Longitude	Double	TRUE		
ESRIGNSS_H_RMS	Horizontal Accuracy (m)	Double	TRUE		
ESRIGNSS_V_RMS	Vertical Accuracy (m)	Double	TRUE		
ESRIGNSS_FIXDATETIME	Fix Time	Date	TRUE		
ESRIGNSS_FIXTYPE	Fix Type	Short	TRUE	ESRI_FIX_TYPE_DOMAIN	
GlobalID	GlobalID	Global ID	FALSE		
Ownership	Ownership	Text	TRUE	Ownership	255

### Field Descriptions

Fields that are system generated [Shape, ObjectID, GlobalID, Shape\_Length] are not included in this list.

The fields whose names are prefixed with “ESRIGNSS\_” are documented by ESRI at the following link:

<https://pro.arcgis.com/en/pro-app/2.8/tool-reference/data-management/add-gps-metadata-fields.htm> . They will only be filled out if a feature was captured in the field. The field are associated with data taken from the GNSS receiver. They are not applicable to line features.

1. Type – The type of barrier in the right of way (i.e. a hydrant).
2. Notes - Notes taken by GHD either in the field or while desktop digitizing.
3. Ownership – Whether the feature is maintained by the City or the County.

## Domains

*Table 38: BarrierType Domain*

Code	Description
Electric Pole	Electric Pole
Hydrant	Hydrant
Sign Pole	Sign Pole
Utility Box	Utility Box
Streetlight	Streetlight
Mail box	Mail box
Other	Other

## Distribution Information

### Metadata Reference

**Metadata Contact:** Zach Porteous, [zach.porteous@ghd.com](mailto:zach.porteous@ghd.com)

**Metadata Date:**

**Metadata Template:** <https://www.fgdc.gov/metadata/documents/MetadataQuickGuide.pdf>

