CRI Map - Bulk Submission Workflow

This document serves as a how-to guide for completing a bulk submission using the Download and Upload functionality within the County Road Inventory (CRI) Map.

Process Overview

- Download template
- Download the TxDOT roadway inventory for comparison with your data
- Review your roads in comparison with TxDOT's data
- Select roads from your inventory to load into the template
- Calculate domain values
- Upload your data to the CRI Map

Best Practices

- Only submit updates to your county road inventory. Do not submit your county's entire road inventory.
- Digitize roads accurately by referencing aerial imagery
- Submit centerlines only
- Snap to other routes

Workflow

This workflow uses ArcGIS Pro software. If you are using other GIS software, you may need to modify these steps.

1. Log in to the CRI Map with your user credentials.

2. Click on the 'Advanced' button in the lower left to open the 'Advanced Page'.

3. In the bottom section is a 'DOWNLOAD TEMPLATE' option. Click the 'DOWNLOAD' button. This downloads a file geodatabase with an empty feature class, called CRI_Template.

   Download TxDOT's county road inventory. Use this to compare TxDOT's CRI with your county's CRI for discrepancies. This is a statewide dataset so query it to your county. This dataset can also be added as a service to ArcGIS Pro. The tables can be used to display route events.

4. Unzip the file.

5. Open the feature class template and TxDOT's county road inventory in ArcGIS Pro.

6. Compare TxDOT's CRI with your county's CRI for discrepancies. Select **ONLY** the records from your inventory that need to be added, edited, and/or deleted.

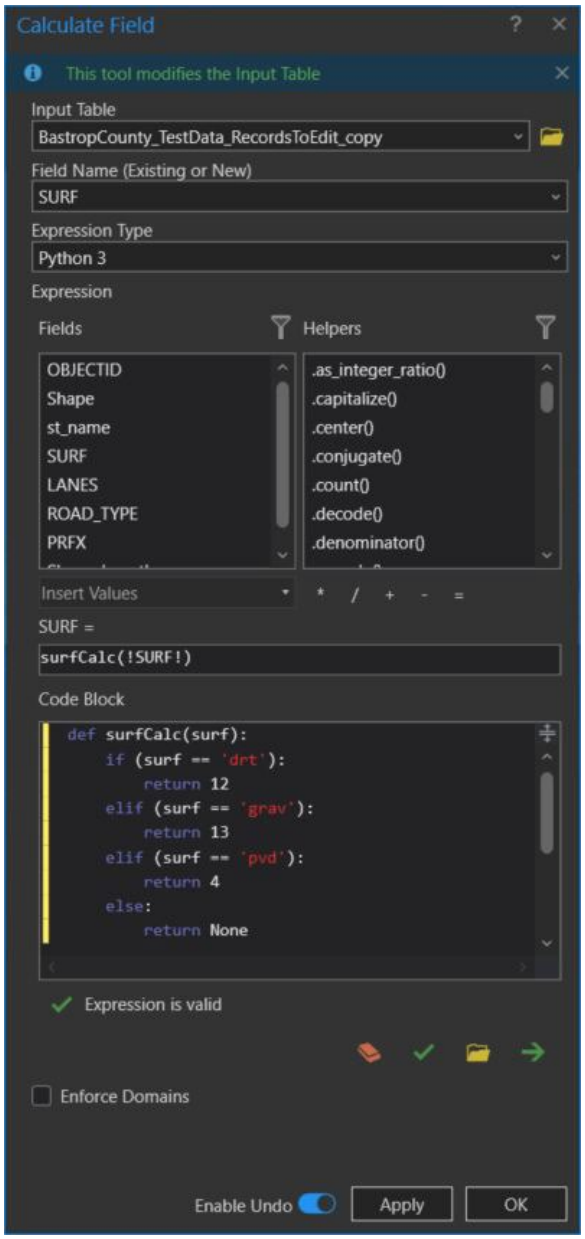
7. Export the selected records to a new feature class, so that your county's original CRI data is not affected by the editing that will occur in the next steps.

Review the CRI_Template geodatabase schema and domains (reference the data dictionary). Your county's GIS file will likely not match the data in the domains of the template, so you will need to field calculate the data to match. Optionally, use a Python or Arcade expression to calculate values based on conditions. Below are some examples that may help.

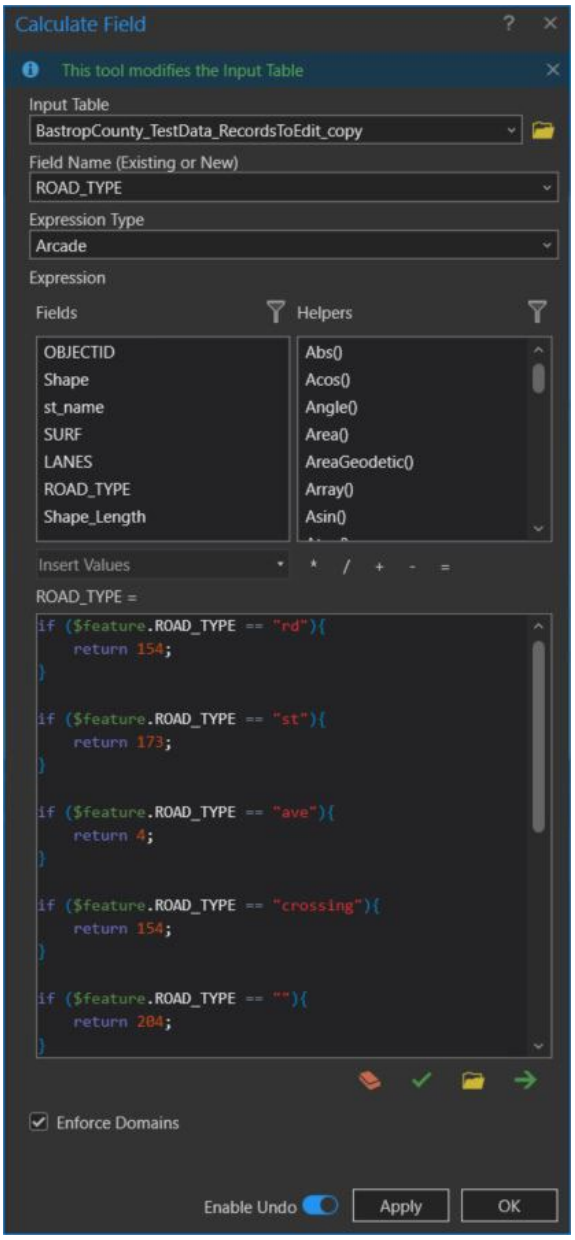
Example of a county's bulk submission data before field calculations. Highlighted fields show data to be updated.

	OBJECTID *	Shape *	st_name	SURF	LANES	ROAD_TYPE	Shape_Length
1	1	Polyline	HASLER SHORES	grav	2	rd	614.595194
2	3	Polyline	SHORELINE	grav	2	st	1684.170932
3	4	Polyline	PINE	drt	2	ave	861.123
4	5	Polyline	OAK	drt	2	crossing	1105.674256
5	6	Polyline	COUNTY ROAD 1234	drt	2		1246.574472

Example of a Python expression for SURF field



Example of an Arcade expression for ROAD_TYPE field



Example of bulk submission data after field calculations. Highlighted fields show data that was updated.

	OBJECTID *	Shape *	st_name	SURF	LANES	ROAD_TYPE	Shape_Length
1	1	Polyline	HASLER SHORES	13	2	154	614.595194
2	3	Polyline	SHORELINE	13	2	173	1684.170932
3	4	Polyline	PINE	12	2	4	861.123
4	5	Polyline	OAK	12	2	42	1105.674256
5	6	Polyline	COUNTY ROAD 1234	12	2	204	1246.584344

8. Use Append tool to append and field map your re-formatted data into the CRI_Template feature class.
    - Fill in these required fields:
        - EDIT_TYPE (domains)
        - ROAD_NM (text, no domain)
        - ROAD_TYPE (domains)
        - SURFACE (domains)
        - LANE (domains)
        - DESIGN (domains)

    Example of a bulk submission correctly appended to the CRI_Template and field mapped. Required fields highlighted.

	OBJECTID *	Shape *	EDIT_TYPE	ROAD_PRFX	ROAD_NM	ROAD_TYPE	ROAD_SFX	SURFACE	LANE	DESIGN	COMMENT	Shape_Length
1	1	Polyline	DELETE	<Null>	HASLER SHORES	ROAD	<Null>	Gravel	2	Two Way	now a city street	216.406352
2	2	Polyline	EDIT	<Null>	SHORELINE	STREET	<Null>	Gravel	2	Two Way	extend road	594.361386
3	3	Polyline	ADD	<Null>	PINE	AVENUE	<Null>	Dirt/Natural	2	Two Way	new road	304.621643
4	4	Polyline	ADD	<Null>	OAK	ROAD	<Null>	Dirt/Natural	2	Two Way	new road	389.406813
5	5	Polyline	ADD	<Null>	COUNTY ROAD 1234	NOT APPLICABLE	<Null>	Dirt/Natural	2	Two Way	new road	439.003765

9. Export the updated template feature class to a shapefile.
    - Tips and Tricks
        - Be sure no records are selected while exporting, otherwise only the selected records will export. This is a common mistake.
        - ArcGIS Pro doesn't have a .shp option. When exporting to a shapefile, add '.shp' to the end of the file name.
            - Right-click the template feature class > select 'Data' > select 'Export Features'
            - Add .shp to the end of the 'Output Feature Class
        - After exporting, the new shapefile will automatically add to ArcGIS Pro. Remove the shapefile from ArcGIS Pro, otherwise there will be a schema lock and the shapefile cannot be zipped.

10. Zip up the shapefile

11. In the 'Advanced Page' of the CRI Map, under 'UPLOAD GIS DATA', click the UPLOAD button. To upload, either drag and drop your zipped shapefile to the upload box or click in the upload box to open file explorer

12. Data validation checks will process the bulk submission, indicated by a banner appearing at the top of the screen. If an error occurs upon upload, reference the Data Validation Checks on the next page.

13. After your updates have been successfully uploaded, review your bulk submission edits in the CRI Map. Further edits may be made in the CRI Map, if necessary.

Data Validation Checks

Upon upload, the CRI Map performs the QA/QC checks listed below to ensure data integrity. If any errors are found, a warning message will appear in the drag and drop box or an email will be sent to the user along with a shapefile to notify what needs to be corrected.

Validation Check	Description	Result	Solution
The correct template feature class is used	Only the CRI Template feature class provided within the CRI Map can be used. No schema changes can be made to this feature class. No fields added or removed.	Warning message in CRI Map. "Schema Failed. Check Shapefile matches TxDOT Schema"	After correction, resubmit entire bulk submission.
All required fields must be populated with correct domain values. No null values. (reference the data dictionary)	Required fields: • EDIT_TYPE • ROAD_NAME • ROAD_TYPE • SURFACE • LANE • DESIGN	Warning message in CRI Map. "Empty or Null fields have been detected. Review required fields [EDIT_TYPE, SURFACE, LANE, DESIGN, ROAD_TYPE, ROAD_NM] have a value and re-submit"	After correction, resubmit entire bulk submission.
EDIT_TYPE field is correctly labelled.	If any other edit type other than ADD, DELETE, OR EDIT is given, an error will occur.	Warning message in CRI Map. "An incorrect edit type value has been found. Please make sure values are either Add, Edit or Delete. Re-submit"	After correction, resubmit entire bulk submission.
Only polyline geometry	The CRI Map only accepts polyline geometry to represent county roads. Point or polygon geometry are not acceptable.	Warning message in CRI Map. "Other Geometries other than polylines are in your file. Revise and re-submit."	After correction, resubmit entire bulk submission.
No duplicate geometry and attributes	If the same geometry overlaps the current inventory with the same assets, it is considered a duplicate and is not acceptable.	Email sent to user. Attached shapefile will have a field called ERROR_TYPE and will identify the error.	Resubmit corrections only.
No self-intersecting routes	Any route that is snapped to itself is not allowed. They must have a gap of more than 5 feet, or 0.001 miles.	Email sent to user. Attached shapefile will have a field called ERROR_TYPE and will identify the error.	Resubmit corrections only.
No coincident geometry	Largely coincident geometry that is digitized over the current road inventory but has no attribute changes is not acceptable.	Email sent to user. Attached shapefile will have a field called ERROR_TYPE and will identify the error.	Resubmit corrections only.
Duplicate vertices	Two or more vertices having the same x, y location will cause an error.	Email sent to user. Attached shapefile will have a field called ERROR_TYPE and will identify the error.	Resubmit corrections only.

CRI Map – Data Dictionary

This Data Dictionary serves as a guide for the template feature class used to complete a bulk submission in the CRI Map.

CRI Template Feature Class

The CRI Template feature class is formatted with the schema and coded values listed below.

FIELD NAME	DESCRIPTION	REQUIRED CODED VALUES (domains)
EDIT_TYPE (required)	Type of edit to the inventory. There are 3 types of edits including adding new roads to the inventory, deleting roads from the inventory, and editing the assets and/or alignment of existing roads in the inventory.	1 – ADD 4 – DELETE 5 – EDIT
ROAD_PRFX	The prefix for the road name. Leave blank if does not apply.	1 – North 2 – Northeast 3 – East 4 – Southeast 5 – South 6 – Southwest 7 – West 8 – Northwest 9 – Not Applicable
ROAD_NM (required)	The street name as recognized by the public. This is the common name used on signs and for navigation (i.e. Smith, Jones, Pine, etc). For the common naming convention of County Road 1234, enter this for the ROAD_NM and give it a ROAD_TYPE of NOT APPLICABLE.	Open text field; limit 255 characters
ROAD_TYPE (required)	The road type for the road name (i.e. Road, Street, Avenue, Cove, Circle, etc).	*see next page for complete list
ROAD_SFX	The suffix for the road name. Leave blank if does not apply.	1 – North 2 – Northeast 3 – East 4 – Southeast 5 – South 6 – Southwest 7 – West 8 – Northwest 9 – Not Applicable
SURFACE (required)	The type of surface on the road.	1 – Concrete 4 – Paved 11 – Brick 12 – Dirt/Natural 13 – Gravel
LANE (required)	The combined number of lanes for both sides of the road. For example, a two-way road with one lane in each direction (opposing) would be 2 lanes.	Enter any whole number
DESIGN (required)	The directional design of the roadway for which traffic legally flows. This does not include special events and traffic patterns. Boulevard roadways include a physical median of a material more significant than paint as a divider between cross-directional travel.	1 – One Way 2 – Two Way 3 – Boulevard
COMMENT	An open field for any additional descriptive information or details regarding the road.	Open text field; limit 255 characters

CRI Map – Data Dictionary

ROAD TYPES – CODES & DESCRIPTIONS									
1	ALLEY	43	CROSSROAD	85	HIGHWAY	127	OVERPASS	169	SQUARES
2	ANEX	44	CROSSROADS	86	HILL	128	PARKS	170	STATION
3	ARCADE	45	CURVE	87	HILLS	129	PARKWAYS	171	STRAVENUE
4	AVENUE	46	DALE	88	HOLLOW	130	PASS	172	STREAM
5	BAYOU	47	DAM	89	INLET	131	PASSAGE	173	STREET
6	BEACH	48	DIVIDE	90	ISLAND	132	PATH	174	STREETS
7	BEND	49	DRIVE	91	ISLANDS	133	PIKE	175	SUMMIT
8	BLUFF	50	DRIVES	92	ISLE	134	PINE	176	TERRACE
9	BLUFFS	51	ESTATE	93	JUNCTION	135	PINES	177	THROUGHWAY
10	BOTTOM	52	ESTATES	94	JUNCTIONS	136	PLACE	178	TRACE
11	BOULEVARD	53	EXPRESSWAY	95	KEY	137	PLAIN	179	TRACK
12	BRANCH	54	EXTENSION	96	KEYS	138	PLAINS	180	TRAFFICWAY
13	BRIDGE	55	EXTENSIONS	97	KNOLL	139	PLAZA	181	TRAIL
14	BROOK	56	FALL	98	KNOLLS	140	POINT	182	TRAILER
15	BROOKS	57	FALLS	99	LAKE	141	POINTS	183	TUNNEL
16	BURG	58	FERRY	100	LAKES	142	PORT	184	TURNPIKE
17	BURGS	59	FIELD	101	LAND	143	PORTS	185	UNDERPASS
18	BYPAS	60	FIELDS	102	LANDING	144	PRAIRIE	186	UNION
19	CAMP	61	FLAT	103	LANE	145	RADIAL	187	UNIONS
20	CANYON	62	FLATS	104	LIGHT	146	RAMP	188	VALLEY
21	CAPE	63	FORD	105	LIGHTS	147	RANCH	189	VALLEYS
22	CAUSEWAY	64	FORDS	106	LOAF	148	RAPID	190	VIADUCT
23	CENTER	65	FOREST	107	LOCK	149	RAPIDS	191	VIEW
24	CENTERS	66	FORGE	108	LOCKS	150	REST	192	VIEWS
25	CIRCLE	67	FORGES	109	LODGE	151	RIDGE	193	VILLAGE
26	CIRCLES	68	FORK	110	LOOP	152	RIDGES	194	VILLAGES
27	CLIFF	69	FORKS	111	MALL	153	RIVER	195	VILLE
28	CLIFFS	70	FORT	112	MANOR	154	ROAD	196	VISTA
29	CLUB	71	FREEWAY	113	MANORS	155	ROADS	197	WALKS
30	COMMON	72	GARDEN	114	MEADOW	156	ROUTE	198	WALL
31	COMMONS	73	GARDENS	115	MEADOWS	157	ROW	199	WAY
32	CORNER	74	GATEWAY	116	MEWS	158	RUE	200	WAYS
33	CORNERS	75	GLEN	117	MILL	159	RUN	201	WELL
34	COURSE	76	GLENS	118	MILLS	160	SHOAL	202	WELLS
35	COURT	77	GREEN	119	MISSION	161	SHOALS	203	OTHER
36	COURTS	78	GREENS	120	MOROWAY	162	SHORE	204	NOT APPLICABLE
37	COVE	79	GROVE	121	MOUNT	163	SHORES		
38	COVES	80	GROVES	122	MOUNTAIN	164	SKYWAY		
39	CREEK	81	HARBOR	123	MOUNTAINS	165	SPRING		
40	CRESCENT	82	HARBORS	124	NECK	166	SPRINGS		
41	CREST	83	HAVEN	125	ORCHARD	167	SPURS		
42	CROSSING	84	HEIGHTS	126	OVAL	168	SQUARE		