

[Another Draft HTML version for final review](#)

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HTML update February 2, 2000; [\[Accuracy Statement\]](#)

HTML update November 14, 2000; [\[S_UNIQUE\]](#) dropped in favour of [\[CO_UNIQUE\]](#) & [\[S_FIPS\]](#)
[\[S_SURFWIDTH\]](#) added

HTML update February 4, 2002; [Address GeoCoding attributes added](#). [\[PRE_DIR\]](#), [\[L_F_ADD\]](#),
[\[R_F_ADD\]](#), [\[L_T_ADD\]](#), [\[R_T_ADD\]](#), [\[SUF_DIR\]](#), [\[TYPE\]](#)

Transportation Data Model Share-Code items and definitions

(Formerly known as the Canyon Country Partnership Transportation Share-Codes)

After several meetings, discussions and all night brainstorming sessions, these share codes have found a new home with the [Utah Automated Geographic Reference Center \(AGRC\)](#). All of these activities have led to a number of changes in the transportation share codes, originally developed by the [Canyon Country Partnership \(CCP\)](#) geographic data committee. A lot of hard work and effort went into the original concept and design of these share codes; the folks at CCP should take pride in their efforts. The CCP is a group of GIS practitioners from South Eastern Utah representing local, county, state, and federal government agencies along with the private sector as well.

Some of the changes are subtle, but for those of you familiar already with the share codes, the most noticeable change is that of the actual names of the items. The original [share](#) prefix has been changed to simply [s_](#). This should eliminate problems encountered by ArcView users. Other changes include more concise evaluations of the items and changes to the byte-wise definitions with respect to the INFO data table. A copy of the INFO data table in export format as well as a copy of the dbase file is available. Plans include making a data dictionary for GPS data collecting available too.

This transportation model is intended to work with the arc segments. ARC/INFO [route](#) systems would provide for more efficient applications, but to maintain compatibility with the greatest number of users the Arc model is used. Eventually, these share codes will adopt the UDOT route system scheme when it is fully defined.

These codes were developed by reviewing other transportation models such as the NSDI transportation model, USDA Forest Service Primary Management Objectives and Transportation Management System, UDOT transportation model. It was developed by brainstorming in groups with diverse transportation system needs at Canyon Country Partnership an [Utah Geographic Systems Advisory Council \(GISAC\)](#) meetings.

This model is well thought out but it isn't perfect. It is adaptable. Change is inevitable and largely painless if we have correctly identified the most important entities and attributes involved with transportation. Please provide comments and bug reports on the [share code discussion area](#) to help us fine tune the codes.

This model is not intended to be restrictive. It is considered a minimum set for a basic transportation model and for data sharing. Participating agencies are encouraged to maintain additional attributes to meet local needs. If fields and values similar to those described below already exist in your database, please add these field and build amls or other macros to translate to the share codes. You can maintain the your data the way you want and translate for data sharing. We will share amls in the discussion area.

DATA STRUCTURE SUMMARY

The following is a summary of the data structure of the attributes beyond the dash ID field in a transportation .aat or related table.

Common Name	Item Name	Input Width	Output Width	Type
County FIPS Code	s_fips	5	5	N
County Identifier	co_unique	varies	varies	varies
Status	s_status	1	1	C
Date	s_date	8	8	D
Accuracy Statement	s_accur	2	2	I
Function	s_func	2	2	I
Agency Function	s_agfunc	2	2	I
Name	s_name	30	30	C
Surface Type	s_surf	3	3	I
Surface Width	s_surfwidth	6	6	N/2
Width	s_width	6	6	N/2
Jurisdiction	s_juris	3	3	I
Right Of Way	s_row	1	1	I
Access	s_access	15	15	C
Usage	s_use	10	10	C
Address Geocoding Attributes				
Prefix Direction	pre_dir	2	2	C
Left From Address	l_f_add	11	11	I
Right From Address	r_f_add	11	11	I
Left To Address	l_t_add	11	11	I

Right To Address	r_t_add	11	11	I
Suffix Direction	suf_dir	2	2	C
Type of Feature	type	4	4	C

COUNTY FIPS *s_fips 5 5 n*

There have been many debates and discussions regarding the Unique Identifier (S_UNIQUE) field. The initial definition included a portion that carries an ‘Authority’ identification, which was to be decided upon by the Federal Geographic Data Committee (FGDC). Without this authority identifier, populating the S_UNIQUE field is a moot point, and most, if not all counties have avoided it all together. In an attempt to remedy the situation, two new fields are now suggested to replace the original S_UNIQUE.

The first field is S_FIPS which is defined five digits numeric. It contains the state FIPS code of 49, and the appropriate county FIPS code.

For Utah, the State and county codes are as follows:

49001 - Beaver	49021 - Iron	49041- Sevier
49003 - Box Elder	49023 - Juab	49043 - Summit
49005- Cache	49025 - Kane	49045 - Tooele
49007 - Carbon	49027 - Millard	49047 - Uintah
49009 - Dagget	49029 - Morgan	49049 - Utah
49011 - Davis	49031 - Piute	49051 - Wasatch
49013 - Duchesne	49033 - Rich	49053 - Washington
49015 - Emery	49035 - Salt Lake	49055 - Wayne
49017 - Garfield	49037 - San Juan	49057 - Weber
49019 - Grand	49039 - Sanpete	

UNIQUE COUNTY IDENTIFIER *co_unique varies*

For GPS collected data, the need to uniquely identify the feature remains. A new field, using a county defined scheme and called CO_UNIQUE provides that function. Many counties currently have their own methodology or schema with which to identify features. For example, a Parcel-ID may have embedded within it coding that tells the Section, Township and Range the parcel is located in. This approach can easily be adapted to linear features such as roads and trails. On a purely conceptual basis, the CO_UNIQUE is populated with as much or as little information as defined by the

individual county. For example, at least one county has developed a county-wide grid system, and the grid-cell identification number of the cell a given road is in would in part populate the CO_UNIQUE field. A very simple approach to populating the CO_UNIQUE would be to use the data-base record number for the feature itself.

This approach allows flexibility at the county level, as well as any other agency level. Depending on the county's identifier, the CO_UNIQUE can be defined as either numeric or character/string. If a county wants to incorporate a Section Township Range approach, the field would have to be defined as character/string to accommodate the STR designation.

The S_UNIQUE field will not totally be abandoned. It will be handled slightly differently. When data is submitted to the State Geographic Information Database (SGID), S_UNIQUE will be added and populated by concatenating The S_FIPS, S_JURIS (a numeric code which identifies the agency of jurisdiction), and the CO_UNIQUE. *Any agency collecting data can use the CO_UNIQUE field to hold its identifier.*

STATUS s_status 1 1 Character

Unique identifiers are never reused. The purpose of this item is to track the status of the s_unique item *not the feature!*

P = Proposed

A = Active

R = Retired

Status is clearly useful for distinguishing proposed routes from existing ones. It is less clear how the retired status would be used. It suggests that arcs are never removed because they represent abandoned routes tracked for historical purposes.

DATE s_date 8 8 Date

Standard date format of yymmdd indicating the date when the data was collected or created. This is easily obtained when using a GPS to gather data in the field.

ACCURACY STATEMENT s_accur 2 2 Integer

Originally, this field was developed as a large character field, allowing text describing the accuracy level of the feature data. The City of Murray, Utah developed a two digit code which indicates not only the accuracy, but the methodology used to capture the data.

The first value (left side) of the number pair indicates how accurate the data source was for the feature, a value between 1 (most accurate or dependable) and 9 (least accurate or dependable). The second value (right side) of the number pair indicates whether the data was rubber-sheeted or transformed into the coverage, a value of 0 (not rubber-sheeted) or 1 (rubber-sheeted). Precision values are as follows:

- 9 - The feature was entered using COGO or survey accurate data of centimeter accuracy. [Added 2-2-00]
 - 10 - The feature was entered using post-processed GPS resource grade data of sub-meter to 3 meter accuracy.
 - 11 - The feature was entered using COGO or survey accurate data that was rubber-sheeted to a base map.
 - 21 - The feature was digitized from an original engineering or architectural scaled drawing on vellum.
 - 30 - The feature was entered as part of the original aerial base map creation process.
 - 31 - The feature was digitized from an original engineering or architectural scaled drawing on paper.
 - 41 - The feature was digitized from a copy of an engineering or architectural scaled drawing. Use this code for data captured by digitizing from a USGS quadrangle.
 - 50 - The feature was collected from a digital orthophoto/drawing file.
 - 51 - The feature was collected from a digital orthophoto/drawing file and rubber-sheeted to a base map.
 - 61 - The feature was digitized from a rectified aerial photograph.
 - 70 - The feature was entered based on data that was collected in the field (not surveyed).
 - 71 - The feature was entered based on data that was collected in the field (not surveyed) and rubber-sheeted to a base map.
 - 81 - The feature was digitized from aerial photos (not rectified).
 - 90 - The feature was entered based on "best guess" data.
 - 0 - no precision data exists for this feature
- (With luck, values of 90 or 0 will not exist!)

FUNCTION `s_func 2 2 Integer`

These definitions were provided by the [Utah Department of Transportation](#) based on guidelines established by the [Federal Department of Transportation](#). NDSI Ground Transportation Subcommittee provide their [definitions](#). For now, the following definitions from [Maricopa County](#), Arizona can be used. The term *Urban* is used in areas with a population of 5,000 or more.

- 1 - Rural Interstate
- 2 - Rural Principal Arterial
- 6 - Rural Minor Arterial
- 7 - Rural Major Collector
- 8 - Rural Minor Collector
- 9 - Rural Local
- 10 - Rural Trail
- 11 - Urban Interstate
- 12 - Urban Expressway
- 14 - Urban Principal Arterial
- 16 - Urban Minor Arterial
- 17 - Urban Collector
- 19 - Urban Local
- 20 - Urban Trail

Key points for Function

- Functional class as shown here is from a statewide view.

AGENCY FUNCTION **s_agfunc 2 2 Integer**

In testing the above functional class, we found that it didn't address local transportation management needs. For example, most roads on a Forest or State park may have a share.function of 9 but serve as an arterial or collector in the local transportation system. This *optional* field was added to give each jurisdiction the ability to further define their data.

- 10 - Arterial
- 20 - Collector
- 30 - Local
- 35 - Resource or special use; for example, a national park service road
- 40 - Trail

Key points for Agency Function

- The field was designed to meet local needs and it is fine to use local definitions for these values.

NAME **s_name 30 30 Character**

To facilitate building the route system over the arcs this field was included. To avoid

splitting arcs just because the route number changes, this may have to be generalized at this level. This field can be populated as each agency decides what is best as long as the method is consistent within their data.

Examples:

Utah State Highway 10
FDR 2098
Horse Bench Road

Key points for Route Name

- Use the name by which you identify a road or trail and would like to show it on a map.
- A word of caution. Do not spell the routes inconsistently. If so spellings vary, building route systems based on the share.route, will be not work.

SURFACE TYPE `s_surf 3 3 Integer`

This field will eventually become part of the route system also. It may be generalized to avoid splitting arcs. Either use the general categories or the more specific sub categories if greater detailed is desired. Road or trail width is handled with an additional field.

100 - PAVED

110 - paved - concrete

115 - paved - Asphalt

120 - paved - Composite (ex. chip seal, tar sand)

200 - IMPROVED (suggests some form of maintenance and/or surfacing other than pavement)

210 - improved - aggregate/gravel undifferentiated (ex. gravel, pit run, or crushed aggregate)

211 - improved - crushed aggregate (no specifications identified)

212 - Improved - Specified aggregate (crushed to some specification)

213 - Improved - Pit run (taken from a borrow pit as is)

220 - Improved - chemical treatment undifferentiated (enzyme, oil, mag chloride, etc)

221 - Improved - oiled (different from paved - composite in that the surfacing is still represents

unconsolidated materials

222 - Improved - enzyme

223 - Improved - mag chloride

300 - NATIVE

310 - Unimproved high clearance (rugged roads on native materials; usually requiring

high clearance vehicles)

320 - Maintained native materials

400 - TRAILS undifferentiated

410 - paved trail

420 - gravel or aggregate trail

430 - native materials trail

440 - rugged trail (rough trail on native materials in rugged terrain)

999 - Undefined

Key Points for Surface Type

- Use the details only if you want to. The generalized values may be all your agency needs.
- Values between 100 and 399 are for roads.
- Values between 400 and 499 are for trails.
- The difference between a narrow road and wide trail is debatable.
- Choices here are best guess and clearly subjective.
- The Route Width field, shown below, will be used to better define width.
- Also, some debate exists whether a track or other unmaintained route is a road. This field is not intended to address administrative issues. It only describes the surface and general type of a road or trail.

SURFACE WIDTH `s_surfwidth 6 6 2` (decimal places) (measured in decimal feet)

Width of traveled surface in feet. If the feature is paved or otherwise improved, (concrete, asphalt, graveled, oiled, etc) the dimension from outer edge to outer edge of pavement or improved surface. If the feature is of native materials, the dimension measured from outer edge to outer edge of the traveled surface. In the case of a 'two track' the measured dimension of outer edge to outer edge of the tracks. The same would hold true for a trail; the measured width, edge to edge of the traveled surface.

WIDTH `s_width 6 6` Numeric 2 (decimal places) (measured in feet)

The route width field provides for numeric width estimates defined as the width of disturbance. This will provide for a maximum value of 999.99 feet.

At one time, the Surface Type Codes implied width. Too many variations and lack of definitions led to the addition of this Route Width field. The Surface Type Codes still

generally distinguish between roads and trails, but this field can be used define the 'gray areas' once adequate definitions become available.

Key points for Route Width

- Be accurate enough to estimate the vehicle width limitations of the route. For example, a trails with a width of 3 feet would not be suitable for four wheeled vehicles. An estimate of +/- 2 feet would not be adequate in this case.
- The numeric 2 decimal place has been added for local agencies to have an accurate data collection method, but the two place decimal is not required for all entities.

JURISDICTION s_juris 3 3 Integer

This field defines who owns or maintains a particular road. This field could be generalized to avoid splitting arcs. The field has been revised to generally match the data structure of the CCP surface ownership codes.

100 - FEDERAL

- 110 - BLM (Bureau of Land Management)
- 120 - USFS (United State Forest Service)
- 130 - NPS (National Park Service)
- 140 - DOD (Department of Defense), Military or COE
- 150 - BIA (Bureau of Indian Affairs)
- 160 - USFW (United States Fish and Wildlife Service)

200 - STATE

- 210 - State Department of Transportation
- 211 - State Toll
- 220 - State Park

300 - COUNTY

- 310 - County Class B
- 320 - County Class D

400 - CITY (not differentiated between city, municipality, town, etc.)

- 410 - City Class C

500 - PRIVATE

600 - NATIVE AMERICAN

- 610 - Native American Sovereign Nation (ex Navajo Nation)

700 - Disputed

999 - Unknown

Key points for Jurisdiction

- Jurisdiction in combination with State and County codes from the Unique identifier can be used to identify specific county jurisdictions.
 - Another way to identify specific counties or cities is to intersect the data with the city and county layers from the SGID.
-

Right Of Way **s_row 1 1 Integer**

This item replaces the original share.rs2477 item, and now reflects the type of Right Of Way associated with the feature. The values here pertain to the State of Utah and may or may not apply in other states.

1 - Deeded. The right of way has been deeded and recorded as real property

2 - Prescriptive. (Utah Code 72-5-104 states “A highway shall be deemed to have been dedicated and abandoned to the use of the public when it has been continuously used as a public thoroughfare for a period of ten years.”)

3 - Federal Land Policy Management Act (FLPMA) / Title 5

4- RS2477

5 - Other

Follow this link for more [RS2477](#) specific information.

ACCESS **s_access 15 15 character**

This field defines access restrictions.

1 - Open - no special limitations or closures.

2 - Limited - prohibited activities or condition for closure. Put limitations in alpha order (i.e. *2es not 2se*) if more than one limitation can applies

a - ATV	j - 4X4 (ex. Jeep)	s - seasonal snow closure*
b - bicycle (see also mechanized)	k - skate boards	t - 2 wheel drive (ex. sedan)
c - seasonal wildlife closure*	l - snow machines (ex snow mobiles)	u - vehicle size (unspecified)*
d - dogs	m - motorized vehicles	v - vehicle weight*
e - equestrian	n -	w - vehicle height*
f - short term weather closure* (ex. known flash flood area)	o	x - vehicle length*
g -	p - pedestrians and hikers	y
h - snow shoers	q -	z - mechanized (ex. bicycle, roller blades, skate boards, etc.)
i - skiers	r - roller blades	

* *Contact Jurisdictional entity for specifics*

examples

- *2mz - typical wilderness trail*
- *2f - The road up Little Cottonwood Canyon (avalanche closures).*
- *2s - A highway closed in Winter.*
- *2cl - A snow covered trail with seasonal wildlife closure and prohibition of snowmobiles.*
- *2hi - A snow covered trail set aside for snowmobile use in an area where skiers/snowshoers and snowmobilers have specified areas.*
- *2dhm - A groomed cross country ski trail.*
- *2edpq - An ATV trail where non-motorized uses are prohibited to avoid accidents.*

3 - Closed

d - Administrative use only

r - to be Reclaimed
(When a feature has a value of three, both the *d* and *r* categories take on these special meanings, rather than having a *dogs* or *roller blade* restriction)

4 - Abandoned

5 - Disputed

99 - Unknown

USAGE s_use 10 10 character

Identifies primary use or management objective of a road or trail, not restrictions.

a - ATV

b - Bicycling (bike trail) - see also m

c - motor cycle

e - equestrian/horseback riding

f - foot/Hiking

h - Handicap accessible

i - interpretive

k - cross country skiing

o - OHV

m - Mountain Biking

s - Snowmobile

Key Points for Usage

- The usage code is to be applied to roads and trails that have specific management objectives. It does not need to be applied to every road and trail.
- This item is a handy attribute when creating a use map such as snowmobile, hiking or other recreation uses.

ADDRESS GEOCODING ATTRIBUTES

AGRC and [Blue Stakes of Utah Utility Notification Center, Inc](#) have entered into a project partnership focused on improved street centerline data and accurate Address Geocoding attributes. To this end, the following codes and descriptions have been added and will be used for the address geocoding purposes.

Prefix Direction pre_dir 2 2 character

One or two letter abbreviations for directional prefix to a stree name; n s e w ne nw se sw.

Left From Address `l_f_add 11 11 integer`

The begining of the address range for the left side of the feature; left or right side is based on the topology of the feature as direction of travel is determined by the FROM and TO nodes.

Right From Address `r_f_add 11 11 integer`

The begining of the address range for the right side of the feature; left or right side is based on the topology of the feature as direction of travel is determined by the FROM and TO nodes.

Left To Address `l_t_add 11 11 integer`

The end of the address range for the left side of the feature; left or right side is based on the topology of the feature as direction of travel is determined by the FROM and TO nodes.

Right To Address `r_t_add 11 11 integer`

The end of the address range for the right side of the feature; left or right side is based on the topology of the feature as direction of travel is determined by the FROM and TO nodes.

Suffix Direction `suf_dir 2 2 character`

One or two letter abbreviations for directional suffix to a stree name; n s e w ne nw se sw.

Type `type 4 4 character`

Type of feature as per [US Postal Service standards available on the web as a .pdf file.](#) Appendix C has the complete listing

RS2477 road data links *(not responsible for content of web sites, for your info only)*

[Western Counties](#)

[Southern Wilderness Alliance](#)

[Public Access Home Page](#)

[US House of Representatives](#)

[Salt Lake Tribune 1996](#)

[Salt Lake Tribune 1997](#)

Definitions as adapted from Webster's II New College Dictionary

Aggregate

Arterial major transportation route from which other routes branch

Asphalt a brownish - black mixture of bitumen's obtained from natural deposits or as a petroleum by product, used in paving, roofing and water proofing; a mixture of asphalt and gravel or sand used for paving

Bitumen's any various mixtures of hydrocarbons and other substances occurring naturally or coal petroleum

Collector

Composite made up of distinctly different parts or elements; complex material

Concrete a building material made of sand pebble, crushed stones , etc. held together by a mass of cement or mortar

Enzyme

Expressway multilane highway designed for fast travel

Highway a main public road, sep. one that connects towns and cities

Interstate of, between, or connecting two or more states

Jurisdiction The right and power to interpret and apply the law; Authority or control

Local of a limited area or space; (local government), making many stops; not express

Municipal of, or relating to, or typical of a municipality; having local self-government

Paved to cover with a hard smooth surface for travel

Rural Of, in or pertaining to the country as apposed to the city; of or related to agriculture

Sovereign Nation a self-governing, independent geopolitical unit

Town An often incorporated population center larger than a village and smaller than a city.

Trail to bring gradually fainter; path left by a moving body; a blazed path or beaten track

Urban of ,located in , or constituting a city. Characteristic of the city or city life