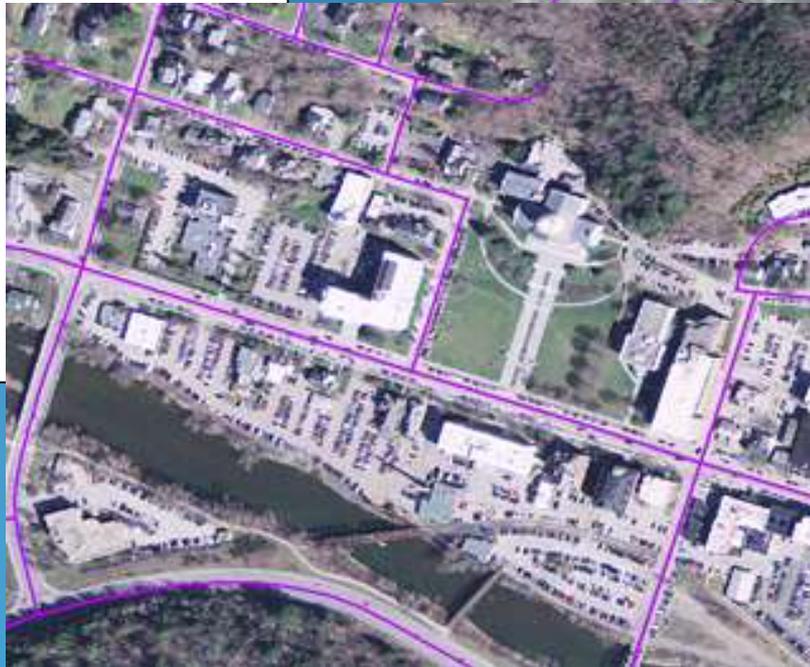


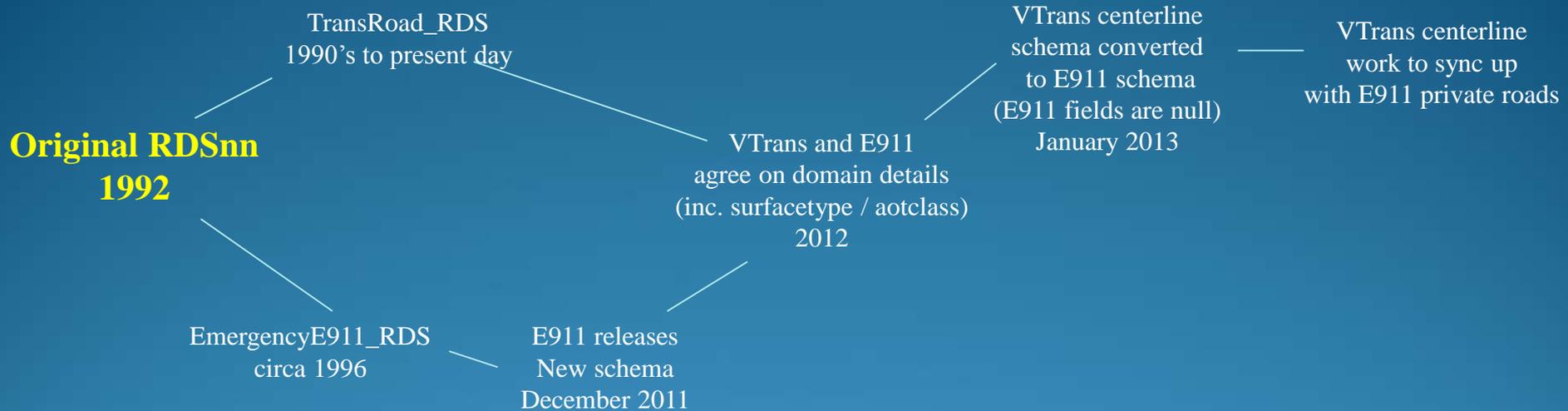
The Vermont Master Road Centerline Data Layer A Dataset for All Seasons

Vermont Agency of Transportation
Mapping Section

The Road Centerline Data Layer



The Master Road Centerline - Origin



The centerlines were originally developed under contract by Greenhorne and O'Mara under the guidance of the Vermont Center for Geographic Information (VCGI) in 1992. The dataset was named “RDSnn”. RDSnn was originally developed using a combination of paper and RC Kodak RF 5000 orthophotos (visual image interpretation and manual digitizing of centerlines). Road attributes were taken from the official VT Agency of Transportation (VTrans) highway maps.



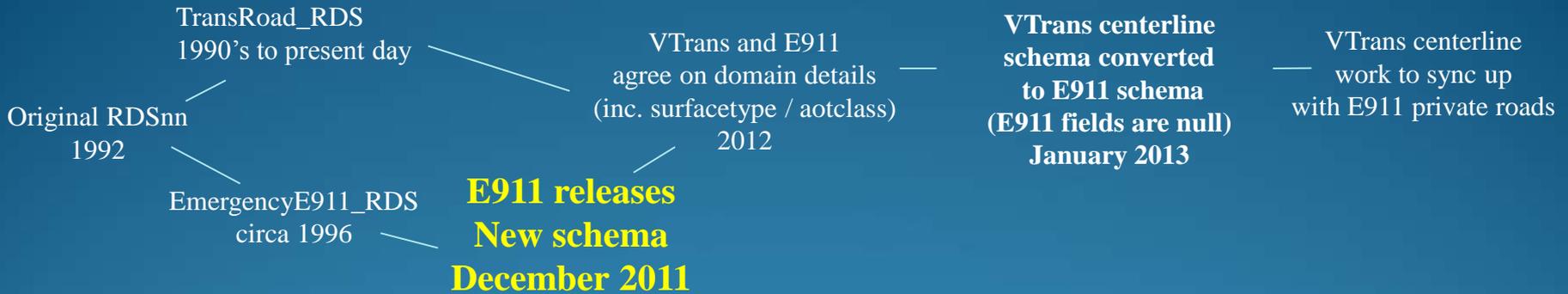
Divergence & Two Road Centerlines



The E911 Board uses the original Vermont's "master" Road Centerline Data Layer (RDSnn) as a starting point for the EmergencyE911_RDS coverage. E911's primary contractor updated RDSnn, modified its attribute structure (added and dropped attributes), removed unwanted pseudo nodes, and created the resulting EmergencyE911_RDS coverage. The EmergencyE911_RDS coverage is designed for use within E911's emergency response system. It is maintained independently from the RDSnn data layer.

VTrans begins the development of the Highway Mapping System and leverages the original Vermont's "master" Road Centerline Data Layer (RDSnn) as a starting point for the TransRoad_RDS coverage. VTrans has a contractor modify the data layer to allow the storage of key transportation fields and segment as necessary. The attributes continue to grow as new functionality is needed in the data layer and new requirements arise. The RDS geometry continues to be improved with better orthophotography, GPS and field survey alignments.

E911 Retools the RDS



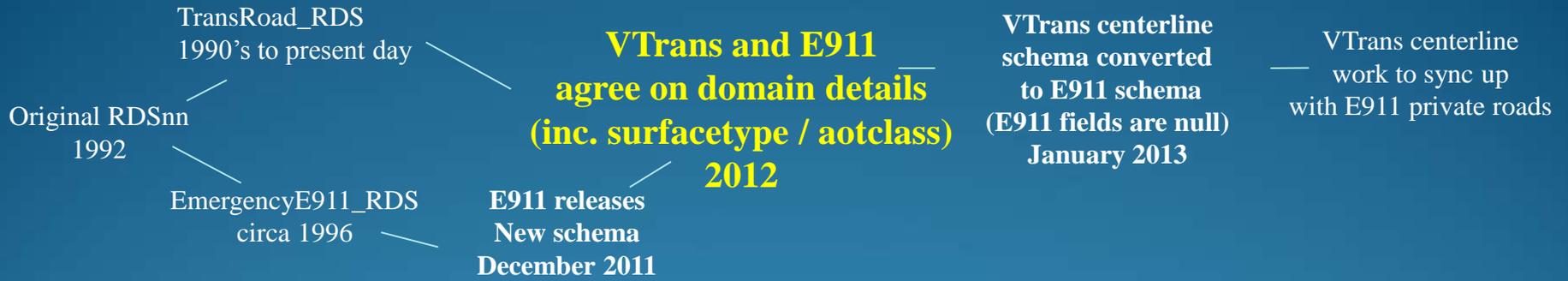
Vermont VTrans & E911 "Roads" Feature Class (VTRoads)

Field Name	Type	Width	Short Description	Changed 12-15-11	VTrans Edit	E911 Edit	Comments
OBJECTID	OID	4			Y	Y	
SEGMENTID	Integer	4	VTrans & E911 Segment ID		Y	Y	
FIPS8	Integer	4			Y	?	
ARCID	Integer	4	Old VTrans Segment ID		N	N	ARCID to be kept as reference to previous VTrans data -field to be populated upon conflation -no update required after conflation -use SEGMENTID for new updates after conflation
FAID_S	Integer	4			Y	?	
STREETID	Integer	4	Old E911 Segment ID				
TRM_LN	String	10	Prefix Direction				
PT	String	10	Prefix Type				
SN	String	80	Street Name				
ST	String	10	Street Type				
SD	String	10	Street Direction				
GEONAMEID	Integer	4	Geoname ID to Geoname Table				
USEGEONAMESALIAS	Integer	4					
PRIMARYNAME	String	100	Full Street Name (primary)				
ALIAS1	String	100	Old E911 ALI Name				
Alias2	String	60	Street Name Alias				
Alias3	String	60	Street Name Alias				
Alias4	String	60	Street Name Alias				
Alias5	String	60	Street Name Alias				
COMMENTS	String	255	Street Segment Comments				
SURFACTYPE	SmallInteger	2	Surface Type Road segment is One Way only				
ONEWAY	String	1					
ADDRESSLOCK	Integer	4	To mark MSAG exceptions				
NO_MSAG	Integer	4	To mark MSAG exceptions				
C1_EXCEPTION	Integer	4			N	Y	

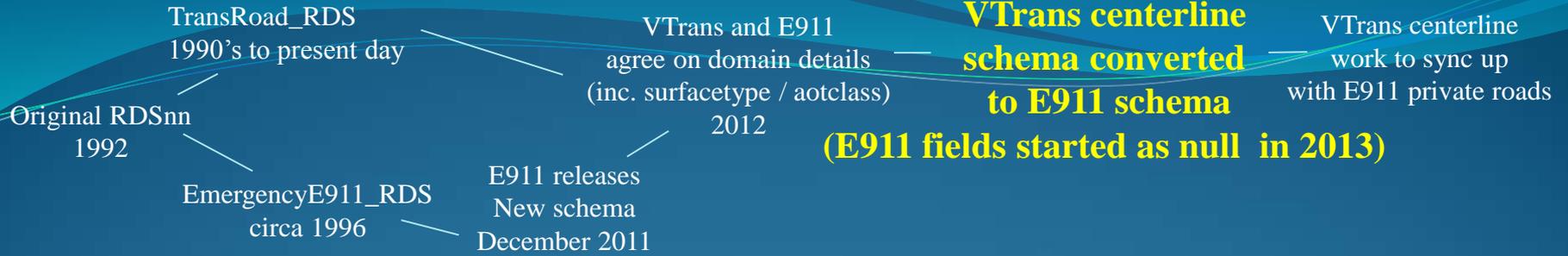
DHC	Integer	4		SmallInteger - 2	Y	N	
FLNCL	Integer	4		SmallInteger - 2	Y	N	
TRM_LN	String	10		String - 10	Y	N	
ETE_LN	Integer	4		String - 11	Y	N	
STCLDR	Integer	4		String - 4	Y	N	
GA	Integer	4		SmallInteger - 1	Y	N	
CTLS	Integer	4		String - 6	Y	N	
CERTCODE	Integer	4		String - 6	Y	N	
ARCID_S	Integer	4		Double	Y	Y	
AOTMILES	Integer	4		Double	Y	Y (N,Y)	
AOTMILES_CALC	Integer	4		Double	Y	Y (N,Y)	
UPDACT	Integer	4		String - 1	Y	Y (Y,N)	
LOCMETH	Integer	4		SmallInteger - 2	Y	N	
BROCRG	Integer	4		SmallInteger - 2	Y	N	
SCENHWAY	Integer	4		SmallInteger - 1	Y	N	
SCENBYWAY	Integer	4		SmallInteger - 4	Y	N	
NORMIC_STNAME	String	60		String - 12	Y	N	
PROVISIONALYEAR	Integer	4		SmallInteger - 4	Y	N	
ANALYTICALYEAR	Integer	4		SmallInteger - 4	Y	N	
TRUCKROUTE	Integer	4		SmallInteger - 1	Y	N	
SPEEDLIMIT	Double	8		Not a VTrans field. do you want to include (some instead?)	Y	Y	
ROADCLOSED	String	50			Y	Y	
RSRT	String	50		String - 1	Y	N	
REVERSE	Integer	4		Integer - 1	Y	N	
CERTYEAR	Integer	4		SmallInteger - 4	Y	N	
MSAYEAR	Date	8			?	?	
UPDATESOURCE	String	30			Y	Y	
UPDATEDATE	Date	8			Y	Y	
DRSUPDATE	String	1			Y	Y	
SHAPE	Geometry	0			Y	Y	
SHAPE_Length	Double	8			Y	Y	
DRAWID	SmallInteger	35			Y	Y	

MCOLE	Integer	4	Municipal Code			Y	
LEDR	Integer	4	Left E911 number			Y	
REDR	Integer	4	Right E911 number			Y	
TRM	String	80	Tram Name Left Side of Road			Y	
RTWA	String	50	Tram Name Right Side of Road			Y	
LLO_A	Integer	4	Low Actual Range Left Side of Road		N	Y	Ranges to be maintained by E911
RLO_A	Integer	4	Low Actual Range Right Side of Road		N	Y	Ranges to be maintained by E911
LHA_A	Integer	4	High Actual Range Left Side of Road		N	Y	Ranges to be maintained by E911
RHA_A	Integer	4	High Actual Range Right Side of Road		N	Y	Ranges to be maintained by E911
LDF	String	50	Zip Code Left Side of Road			Y	Ranges to be maintained by E911
RDF	String	50	Zip Code Right Side of Road			Y	Ranges to be maintained by E911
LLO_T	Integer	4	Low Theoretical Range Left Side of Road		N	Y	Ranges to be maintained by E911
RLO_T	Integer	4	Low Theoretical Range Right Side of Road		N	Y	Ranges to be maintained by E911
LHT	Integer	4	High Theoretical Range Left Side of Road		N	Y	Ranges to be maintained by E911
RHT	Integer	4	High Theoretical Range Right Side of Road		N	Y	Ranges to be maintained by E911
RH_T	Integer	4			N	Y	Ranges to be maintained by E911
ADDRESSRANGED	Integer	4			N	Y	Ranges to be maintained by E911
ROUTEINCLUDE	Integer	4			Y	Y	
RTNAME	String	80	Route Name	String - 10		Y	RTNAME will be populated with E911 routes to start. On conflation RTNAME will default to VTrans values.
RTNUMBER	Integer	4	Route Number	String - 6	Y	Y (N,Y)	
RTCLASS	Integer	4	Route Class	String - 10	Y	Y (N,Y)	
RTCLASSTXT	String	60	Route Class Text	String - 10	Y	Y (N,Y)	
RTCLASSID	Integer	4	Route Class ID	SmallInteger - 2	Y	Y	
AOTCLASS	SmallInteger	2	Agency of Transportation Road Classification			Y	Y (N,Y)
NOTE	String	80	Not Up to Standard	String - 8	Y	Y	

VTrans - E911 Conflation



AOTCLASS	AOTCLASS_proposed_text	AOTCLASS_E911_text	AOTCLASS	AOTCLASS_proposed_text	AOTCLASS_E911_text
1	Town Highway Class 1	Town Arterial	50	Interstate Highway	Interstate Highway
2	Town Highway Class 2	Town Major Collector	51	Interstate Highway - North Bound	Interstate Highway - North Bound
3	Town Highway Class 3	Town Medium Volume	52	Interstate Highway - South Bound	Interstate Highway - South Bound
4	Town Highway Class 4	Town Low/Seasonal	53	Interstate Highway - East Bound	Interstate Highway - East Bound
5	State Forest Highway	State Forest Highway	54	Interstate Highway - West Bound	Interstate Highway - West Bound
6	National Forest Highway	National Forest Highway	55	Interstate Highway - On/Off Ramp	Interstate Highway - On/Off Ramp
7	Legal Trail	Legal Trail	56	Interstate Highway - Emergency U-Turn	Interstate Highway - Emergency U-Turn
8	Private Road - No Show	Private Road - No Show	57	Interstate Highway - Rest Area	Interstate Highway - Rest Area
9	Private Road	Private Road	59	Interstate Highway - Other	Interstate Highway - Other
10	Driveway (put in driveway)	Driveway (put in driveway)	65	Ferry	Ferry
11	Town Highway Class 1 - North Bound		70	Unconfirmed Legal Trail	
12	Town Highway Class 1 - South Bound		71	Unidentified Corridor	
13	Town Highway Class 1 - East Bound		80	Proposed Highway Unknown Class	
14	Town Highway Class 1 - West Bound		81	Proposed Town Highway Class 1	
15	Town Highway Class 1 - On/Off Ramp		82	Proposed Town Highway Class 2	
16	Town Highway Class 1 - Emergency U-Turn	Emergency U-Turn	83	Proposed Town Highway Class 3	Proposed
20		County Highway	84	Proposed State Highway	
21	Town Highway Class 2 - North Bound		85	Proposed US Highway	
22	Town Highway Class 2 - South Bound		86	Proposed Interstate Highway	
23	Town Highway Class 2 - East Bound		87	Proposed Interstate Highway - Ramp	
24	Town Highway Class 2 - West Bound		88	Proposed Non-Interstate Highway - Ramp	
25	Town Highway Class 2 - On/Off Ramp	County Highway - On/Off Ramp	89	Proposed Private Road	
30	State Highway	State Highway	90		
31	State Highway - North Bound		91	New - Class Unknown	New - Class Unknown
32	State Highway - South Bound		92	Military - no public access	Military
33	State Highway - East Bound		93	Public - Class Unknown	Public - Class Unknown
34	State Highway - West Bound		94		
35	State Highway - On/Off Ramp		95	Class Under Review	Class Under Review
40	US Highway	StateHighway - On/Off Ramp	96	Discontinued Road	Discontinued Road
41	US Highway - North Bound	Federal Highway	97	Discontinued Now Private	Private & Discontinued
42	US Highway - South Bound	Federal Highway - North Bound	98	Not a Road	Not a Road
43	US Highway - East Bound	Federal Highway - South Bound	99	Unknown	Unknown
44	US Highway - West Bound	Federal Highway - East Bound			
45	US Highway - On/Off Ramp	Federal Highway - West Bound			
46	US Highway - Emergency U-Turn	Federal Highway - On/Off Ramp			
47	US Highway - Rest Area	Federal Highway - Emergency U-Turn			
		Federal Highway Rest Area			



NAME	TYPE	LENGTH
OBJECTID	OID	4
SEGMENTID	Integer	4
STREETID	Integer	4
PD	String	10
PT	String	10
SN	String	80
ST	String	10
SD	String	10
GEONAMEID	Integer	4
USEGEONAMESALIASES	Integer	4
PRIMARYNAME	String	100
ALINAME	String	100
ALIAS1	String	60
ALIAS2	String	60
ALIAS3	String	60
ALIAS4	String	60
ALIAS5	String	60
COMMENTS	String	255
SURFACETYPE	SmallInteger	2
ONEWAY	String	1
ADDRESSLOCK	Integer	4
NO_MSAG	Integer	4
C1_EXCEPTION	Integer	4
MCODE	Integer	4
LESN	Integer	4
RESN	Integer	4
LTWN	String	50
RTWN	String	50
LLO_A	Integer	4
RLO_A	Integer	4
LHI_A	Integer	4
RHI_A	Integer	4

(list continued)

NAME	TYPE	LENGTH
LZIP	String	10
RZIP	String	10
LLO_T	Integer	4
RLO_T	Integer	4
LHI_T	Integer	4
RHI_T	Integer	4
ADDRSRANGEID	Integer	4
ROUTEINCLUDE	Integer	4
SPEEDLIMIT	Double	8
ROADCLOSED	String	15
MAPYEAR	Date	36
UPDATESOURCE	String	30
UPDATEDATE	Date	36
GPSUPDATE	String	1
GlobalID	SmallInteger	38
STATE	String	2
GAP	Integer	4
GAPMILES	Double	8
GAPSTREETID	Integer	4
RTNAME	String	12
RTNUMBER	String	4
RTNUMBER_N	Double	8
HWYSIGN	String	12
ARCID	Integer	4
FIPS8	Integer	4
FAID_S	Double	8
FAID_N	Double	8
RPCCLASS	SmallInteger	2
AOTCLASS	SmallInteger	2

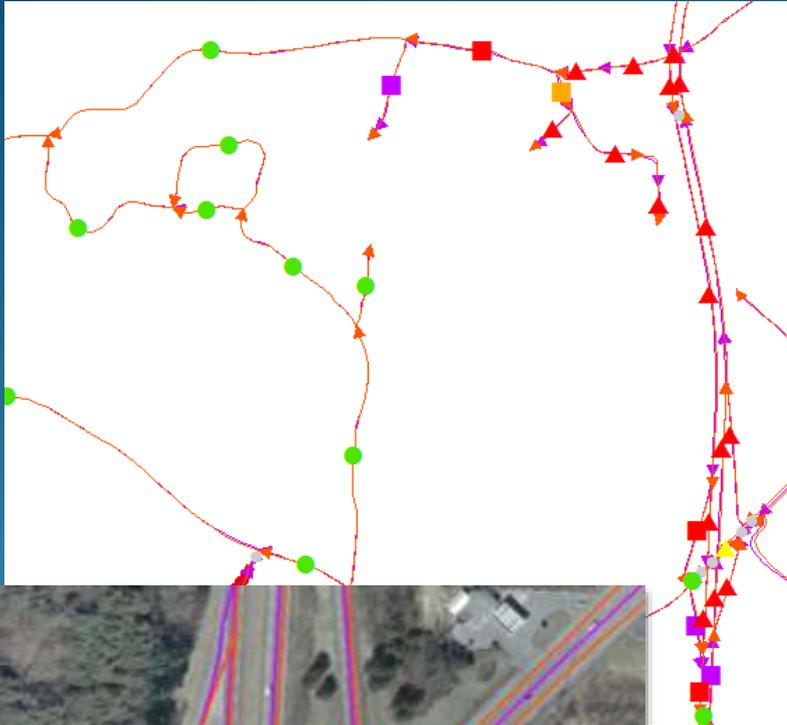
(list continued)

NAME	TYPE	LENGTH
NUTS	String	1
NHS	SmallInteger	2
FUNCL	SmallInteger	2
TWN_LR	String	15
ETE_LR	String	11
CTCODE	String	4
UA	SmallInteger	2
CTUA	String	6
CERTCODE	String	6
ARCMILES	Double	8
AOTMILES	Double	8
AOTMILES_CALC	Double	8
UPDACT	String	1
LOCMETH	SmallInteger	2
SRCORG	SmallInteger	2
SCENICHWY	SmallInteger	2
SCENICBYWAY	SmallInteger	2
FORMER_RTNAME	String	12
PROVISIONALYEAR	SmallInteger	2
ANCIENTROADYEAR	SmallInteger	2
CERTYEAR	SmallInteger	2
TRUCKROUTE	SmallInteger	2
INSET	String	1
ISVISIBLE	Integer	4
ISVISIBLE_UC	Integer	4
RDNAME	Integer	4
RDFLNAME	String	30
Shape	Geometry	8
Shape.STLength()	Double	0

E911 responsibility

VTrans responsibility

Data Merging - Conflation



Conflation begins to synchronize the two road datasets into one master with the best geometry and complete attributes.

Over 60% of the arcs have been conflated to date and the remaining 40% are in the process of being reviewed and updated.



This is not an automated process, as arcs need to be evaluated against orthophotos and other sources.

VTrans – E911 Conflation Status

We are not out of the woods yet, but have a clear path ahead of us. There are still some questions outstanding.

- Should there be nodes at grade separated intersections?
- How long should a divided section be before dual carriageway arcs are created?
- How to handle Arc Direction – which takes precedence, reference measure direction or E911 address direction?
- Defined split policy for arcs and decisions on what level of synchronicity



Improving the Accuracy and Quality

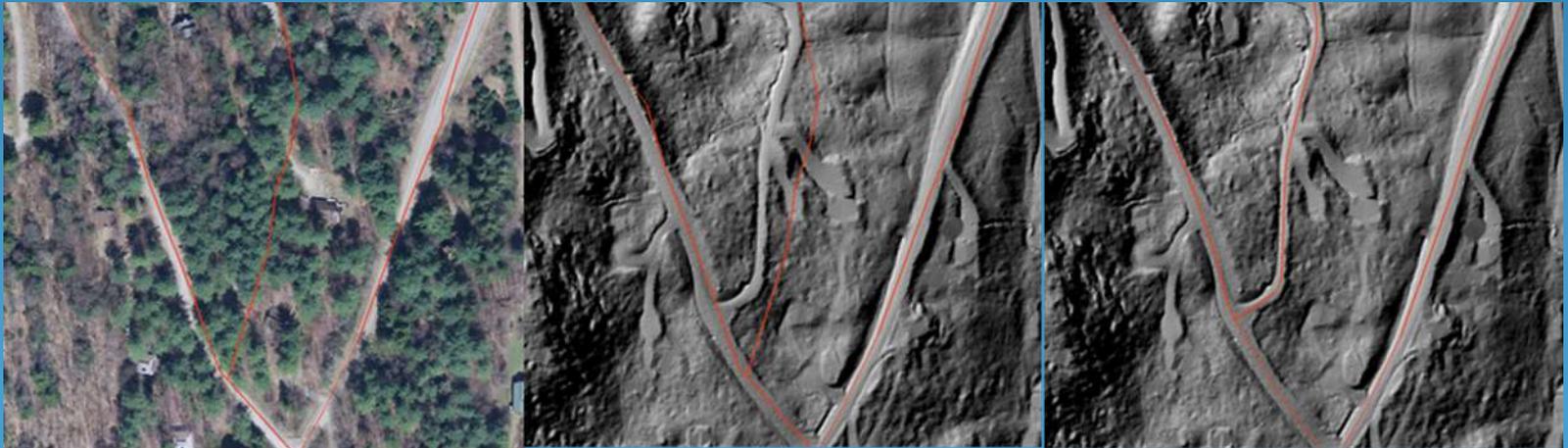
High Resolution Imagery and GPS Data



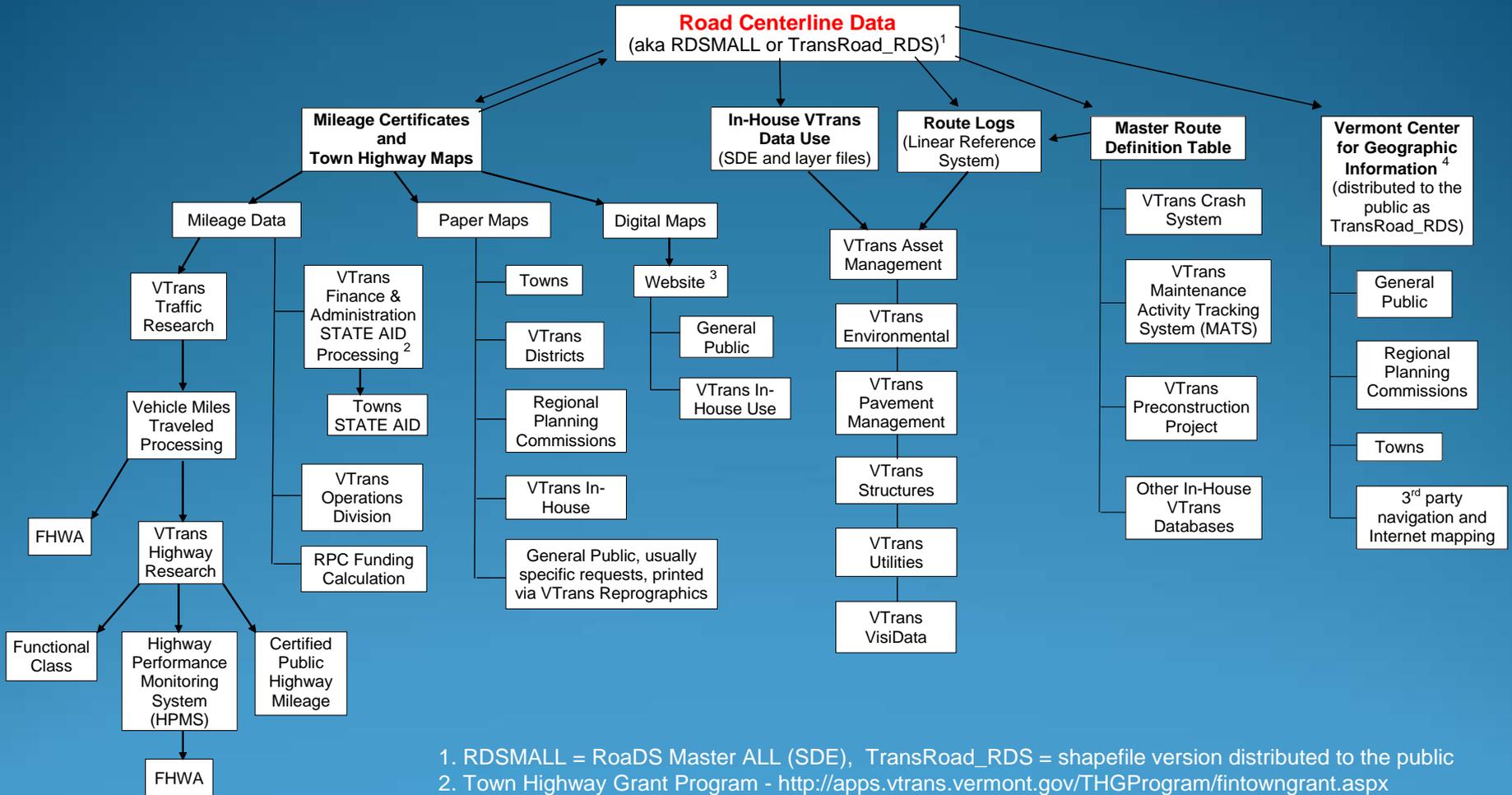
Integrating E911 Geometry & Direction



Use of LiDAR for better spatial accuracy



Derivatives



1. RDSMALL = RoaDS Master ALL (SDE), TransRoad_RDS = shapefile version distributed to the public
2. Town Highway Grant Program - <http://apps.vtrans.vermont.gov/THGProgram/fintowngrant.aspx>
3. Town Highway Maps - http://vtransplanning.vermont.gov/maps/town_maps
4. Vermont Center for Geographic Information - <http://vcgi.vermont.gov>

Annual Mileage Summary



VERMONT AGENCY OF TRANSPORTATION
DIVISION OF POLICY, PLANNING AND INTERMODAL DEVELOPMENT

STATE OF VERMONT - HIGHWAY MILEAGE - FOR YEAR OF 2014

Summarized by TOWN and COUNTY
Figures reported as of February 16, 2014

County	Lane Highway	Class 1	Class 2	Class 3	Class 4	Legal Trail	Unidentified Corridor	State Highway	Total Class 1,2,3 and St Hwy	Scenic Highway
ADDISON	0.518	7.964	242.920	382.88	86.41	18.73	0.00	188.834	1,823.598	14.418
BENNINGTON	0.587	12.964	148.400	445.21	84.29	25.16	0.00	189.435	787.029	0.800
CALEDONIA	0.046	8.268	195.075	701.33	113.57	21.18	0.00	234.830	1,318.404	0.800
CHITTENDEN	12.568	16.409	287.400	712.21	37.27	8.85	0.00	154.514	1,290.533	3.850
ESSEX	0.182	1.706	60.815	170.82	73.49	18.73	0.00	121.282	254.546	0.800
FRANKLIN	0.248	12.197	221.220	382.22	83.43	12.12	0.00	211.385	1,827.022	0.800
GRAND ISLE	0.000	0.000	44.970	81.22	3.27	0.32	0.00	41.000	173.290	0.800
LAMOILLE	0.405	4.371	95.140	380.36	80.35	16.61	0.00	119.833	590.704	14.285
ORANGE	0.000	2.480	215.080	737.98	221.70	51.88	0.00	228.812	1,284.392	0.800
ORLEANS	0.296	11.336	204.908	882.82	125.73	42.36	0.00	225.187	1,844.471	0.800
RUTLAND	1.738	16.488	305.930	754.40	138.80	30.93	0.00	233.281	1,310.177	1.580
WASHINGTON	1.236	18.631	213.121	727.89	147.82	56.01	0.00	181.757	1,212.399	0.800
WINDHAM	0.734	7.913	278.296	877.08	118.68	71.68	0.00	213.876	1,376.265	0.800
WINDSOR	3.408	17.500	284.575	1,189.37	280.78	58.83	0.00	358.981	1,822.226	14.582
TOTAL	13.988	119.819	3,779.838	8,539.16	1,833.84	488.44	0.00	2,797.337	14,168.388	97.898

County CHITTENDEN

2014 TOWN HIGHWAY MILEAGE

Town, City or Village	Lane Highway	Class 1	Class 2	Class 3	Class 4	Legal Trail	Unidentified Corridor	State Highway	Total Class 1,2,3 and St Hwy	Scenic Highway
BOLTON	0.000	0.000	8.580	12.01	0.30	0.30	0.00	11.306	31.896	0.000
BUELS GORE (UNORG)	0.000	0.000	0.450	0.00	0.00	0.00	0.00	2.745	3.195	0.000
BURLINGTON CITY	4.161	7.131	21.757	65.93	0.53	0.00	0.00	0.195	95.013	0.000
CHARLOTTE	0.000	0.000	31.790	42.45	0.20	0.46	0.00	6.550	80.790	3.050
COLCHESTER	0.000	0.000	21.750	69.94	1.27	0.48	0.00	22.864	114.554	0.000
ESSEX	0.000	0.000	10.830	64.60	3.40	0.00	0.00	22.312	97.742	0.000
ESSEX JCT. VILLAGE	1.289	5.013	2.006	27.64	0.00	0.00	0.00	0.600	35.259	0.000

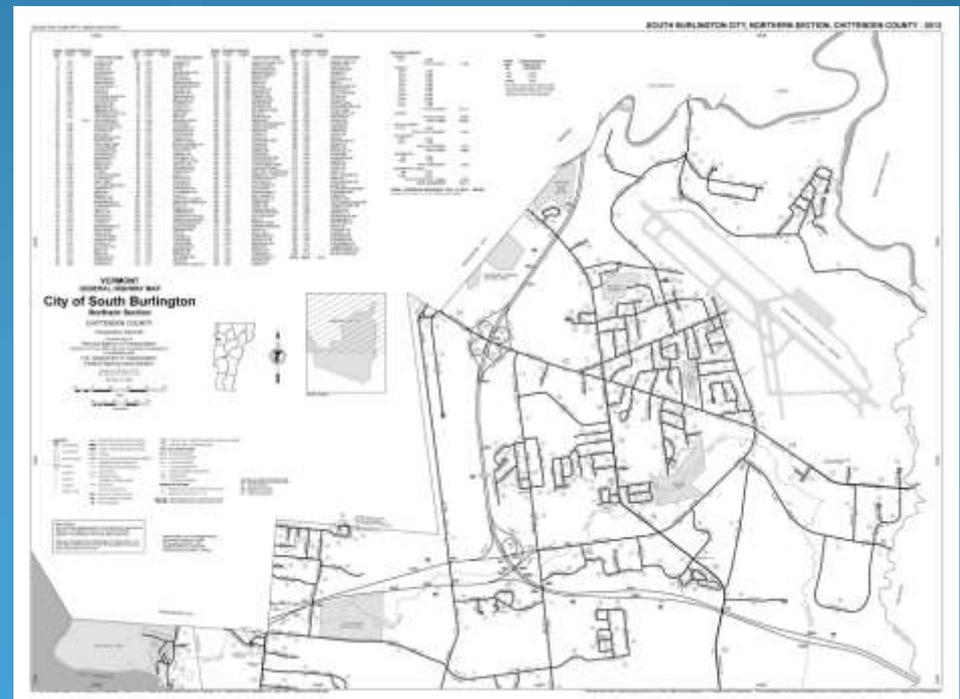
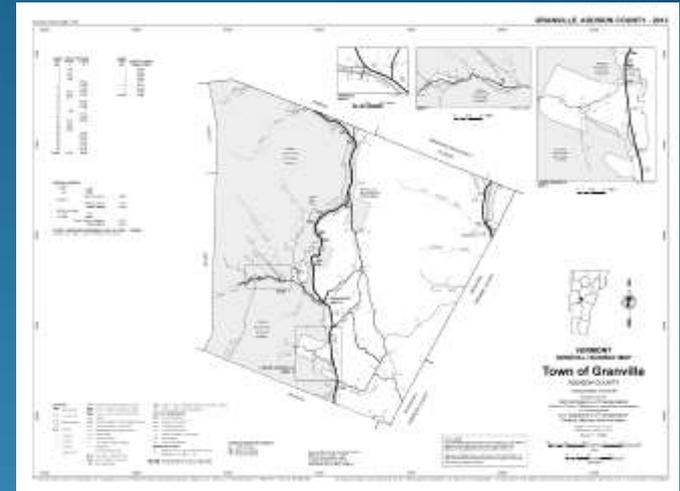
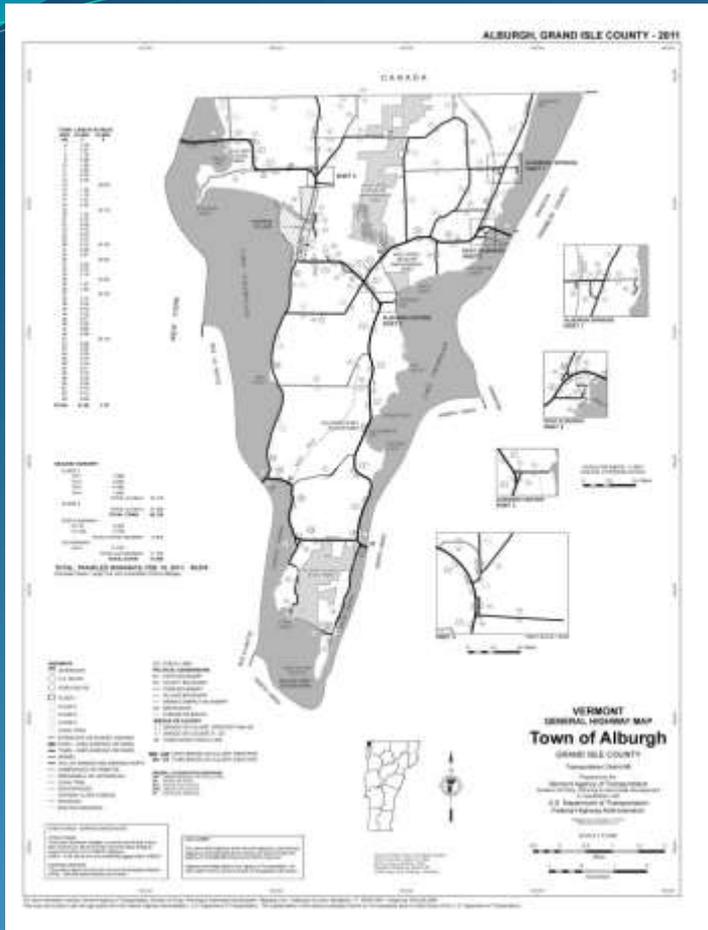
Certified Public Highway Mileage Highway Performance Monitoring System (HPMS)

The road centerline data layer stores mileage, as well as functional class, urban and rural codes and coding for the National Highway System (NHS).

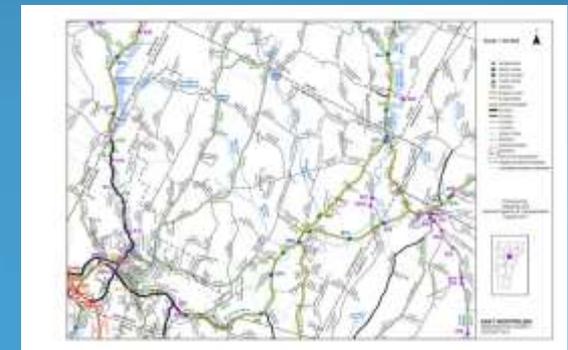
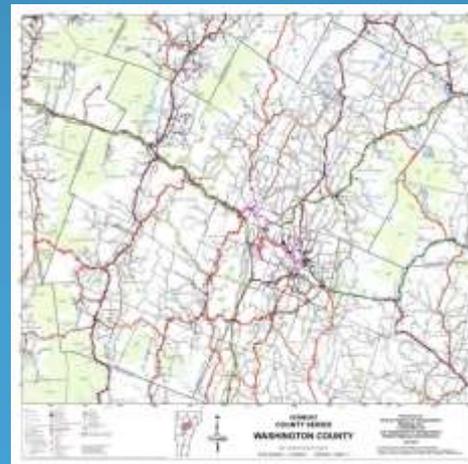
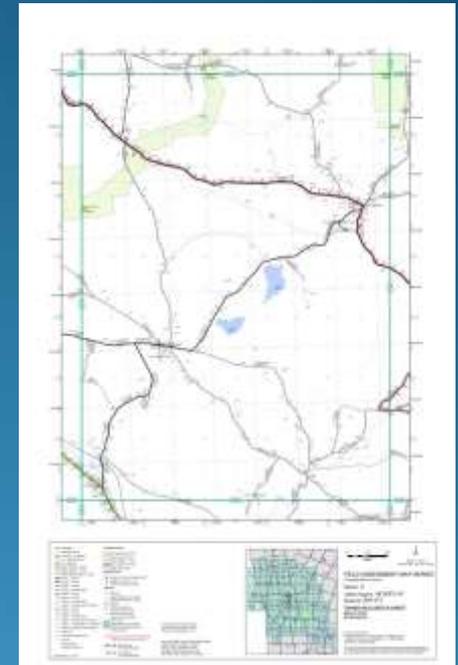
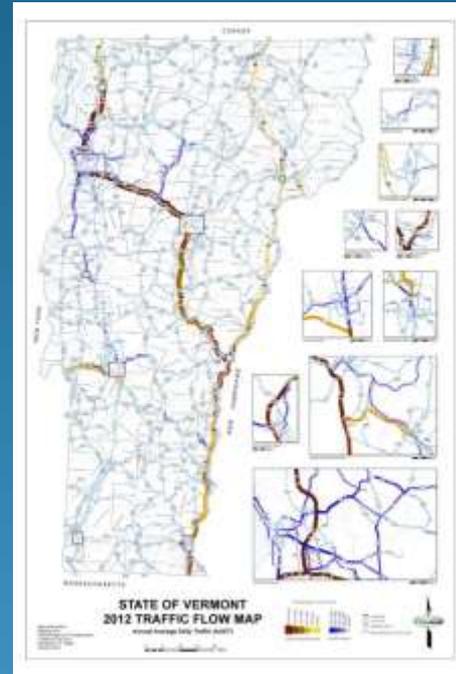
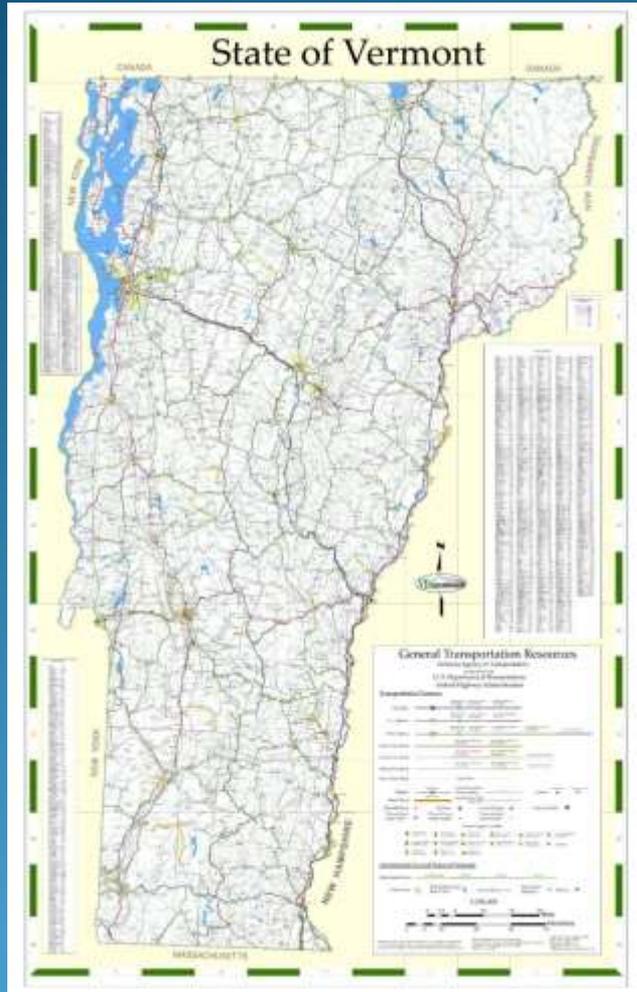
These fields are summarized and used in the Certified Public Highway Mileage reporting to FHWA and also in the HPMS reporting.



Town Highway Maps



Vermont Transportation Maps



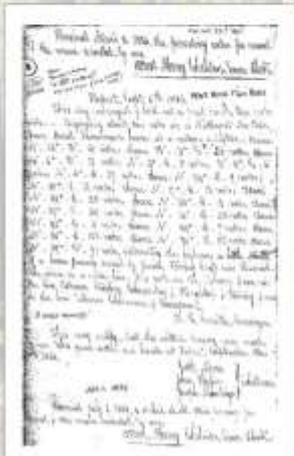
Ancient Roads

Adding an Ancient Road in Vermont

In response to Act 178 of 2006 (Unidentified Corridors), the Vermont Agency of Transportation (VTrans) Mapping Unit was presented with the challenge of mapping the additions of Class 4 town highways and legal trails using information provided from towns and any ancillary data that was available.

In most cases, a rudimentary sketch map accompanied the volumes of deeds, surveys, old maps, and other documents from the towns, providing a general idea of where to add the highway or trail.

A sophisticated suite of tools was employed to make the town highway map update possible, including ESRI's ArcInfo and Production Line Toolset (PLTS), plus running traverses using COGO tools.



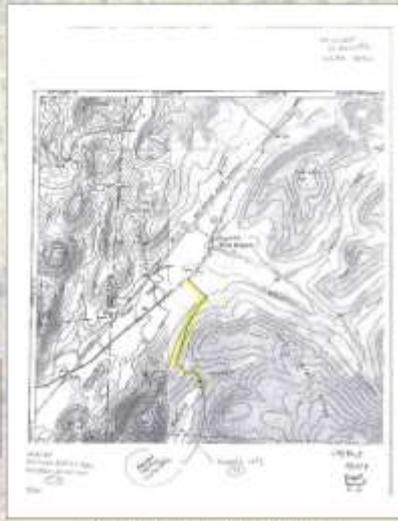
Copy of the original 1804 laying document from the town of Rupert records. This document includes the survey of the highway that describes its location and includes the selector's signature as part of the town's acceptance of this road as a public town highway.

← 1

The Town does extensive research of their records to determine if there is documentation of the legal establishment of a public highway that has not been mapped on the official General Highway Map (also known as the Town Highway Map).

2 →

The general location of the highway is sketched on a modern map base to give an indication of the starting and ending points and general layout.



A sketch of the road on a U.S. Geological Survey quad sheet was included with the Town's documentation.

3 →

The historical survey is converted into 2010 ArcGIS COGO traverse format.

Station	Distance	Bearing	Dist	Point	Notes
1	0.00				
2	100.00	N 00° 00' 00" E	100.00	100.00	
3	100.00	N 00° 00' 00" E	200.00	200.00	
4	100.00	N 00° 00' 00" E	300.00	300.00	
5	100.00	N 00° 00' 00" E	400.00	400.00	
6	100.00	N 00° 00' 00" E	500.00	500.00	
7	100.00	N 00° 00' 00" E	600.00	600.00	
8	100.00	N 00° 00' 00" E	700.00	700.00	
9	100.00	N 00° 00' 00" E	800.00	800.00	
10	100.00	N 00° 00' 00" E	900.00	900.00	
11	100.00	N 00° 00' 00" E	1000.00	1000.00	
12	100.00	N 00° 00' 00" E	1100.00	1100.00	
13	100.00	N 00° 00' 00" E	1200.00	1200.00	
14	100.00	N 00° 00' 00" E	1300.00	1300.00	
15	100.00	N 00° 00' 00" E	1400.00	1400.00	
16	100.00	N 00° 00' 00" E	1500.00	1500.00	
17	100.00	N 00° 00' 00" E	1600.00	1600.00	
18	100.00	N 00° 00' 00" E	1700.00	1700.00	
19	100.00	N 00° 00' 00" E	1800.00	1800.00	
20	100.00	N 00° 00' 00" E	1900.00	1900.00	
21	100.00	N 00° 00' 00" E	2000.00	2000.00	
22	100.00	N 00° 00' 00" E	2100.00	2100.00	
23	100.00	N 00° 00' 00" E	2200.00	2200.00	
24	100.00	N 00° 00' 00" E	2300.00	2300.00	
25	100.00	N 00° 00' 00" E	2400.00	2400.00	
26	100.00	N 00° 00' 00" E	2500.00	2500.00	
27	100.00	N 00° 00' 00" E	2600.00	2600.00	
28	100.00	N 00° 00' 00" E	2700.00	2700.00	
29	100.00	N 00° 00' 00" E	2800.00	2800.00	
30	100.00	N 00° 00' 00" E	2900.00	2900.00	
31	100.00	N 00° 00' 00" E	3000.00	3000.00	
32	100.00	N 00° 00' 00" E	3100.00	3100.00	
33	100.00	N 00° 00' 00" E	3200.00	3200.00	
34	100.00	N 00° 00' 00" E	3300.00	3300.00	
35	100.00	N 00° 00' 00" E	3400.00	3400.00	
36	100.00	N 00° 00' 00" E	3500.00	3500.00	
37	100.00	N 00° 00' 00" E	3600.00	3600.00	
38	100.00	N 00° 00' 00" E	3700.00	3700.00	
39	100.00	N 00° 00' 00" E	3800.00	3800.00	
40	100.00	N 00° 00' 00" E	3900.00	3900.00	
41	100.00	N 00° 00' 00" E	4000.00	4000.00	
42	100.00	N 00° 00' 00" E	4100.00	4100.00	
43	100.00	N 00° 00' 00" E	4200.00	4200.00	
44	100.00	N 00° 00' 00" E	4300.00	4300.00	
45	100.00	N 00° 00' 00" E	4400.00	4400.00	
46	100.00	N 00° 00' 00" E	4500.00	4500.00	
47	100.00	N 00° 00' 00" E	4600.00	4600.00	
48	100.00	N 00° 00' 00" E	4700.00	4700.00	
49	100.00	N 00° 00' 00" E	4800.00	4800.00	
50	100.00	N 00° 00' 00" E	4900.00	4900.00	
51	100.00	N 00° 00' 00" E	5000.00	5000.00	
52	100.00	N 00° 00' 00" E	5100.00	5100.00	
53	100.00	N 00° 00' 00" E	5200.00	5200.00	
54	100.00	N 00° 00' 00" E	5300.00	5300.00	
55	100.00	N 00° 00' 00" E	5400.00	5400.00	
56	100.00	N 00° 00' 00" E	5500.00	5500.00	
57	100.00	N 00° 00' 00" E	5600.00	5600.00	
58	100.00	N 00° 00' 00" E	5700.00	5700.00	
59	100.00	N 00° 00' 00" E	5800.00	5800.00	
60	100.00	N 00° 00' 00" E	5900.00	5900.00	
61	100.00	N 00° 00' 00" E	6000.00	6000.00	
62	100.00	N 00° 00' 00" E	6100.00	6100.00	
63	100.00	N 00° 00' 00" E	6200.00	6200.00	
64	100.00	N 00° 00' 00" E	6300.00	6300.00	
65	100.00	N 00° 00' 00" E	6400.00	6400.00	
66	100.00	N 00° 00' 00" E	6500.00	6500.00	
67	100.00	N 00° 00' 00" E	6600.00	6600.00	
68	100.00	N 00° 00' 00" E	6700.00	6700.00	
69	100.00	N 00° 00' 00" E	6800.00	6800.00	
70	100.00	N 00° 00' 00" E	6900.00	6900.00	
71	100.00	N 00° 00' 00" E	7000.00	7000.00	
72	100.00	N 00° 00' 00" E	7100.00	7100.00	
73	100.00	N 00° 00' 00" E	7200.00	7200.00	
74	100.00	N 00° 00' 00" E	7300.00	7300.00	
75	100.00	N 00° 00' 00" E	7400.00	7400.00	
76	100.00	N 00° 00' 00" E	7500.00	7500.00	
77	100.00	N 00° 00' 00" E	7600.00	7600.00	
78	100.00	N 00° 00' 00" E	7700.00	7700.00	
79	100.00	N 00° 00' 00" E	7800.00	7800.00	
80	100.00	N 00° 00' 00" E	7900.00	7900.00	
81	100.00	N 00° 00' 00" E	8000.00	8000.00	
82	100.00	N 00° 00' 00" E	8100.00	8100.00	
83	100.00	N 00° 00' 00" E	8200.00	8200.00	
84	100.00	N 00° 00' 00" E	8300.00	8300.00	
85	100.00	N 00° 00' 00" E	8400.00	8400.00	
86	100.00	N 00° 00' 00" E	8500.00	8500.00	
87	100.00	N 00° 00' 00" E	8600.00	8600.00	
88	100.00	N 00° 00' 00" E	8700.00	8700.00	
89	100.00	N 00° 00' 00" E	8800.00	8800.00	
90	100.00	N 00° 00' 00" E	8900.00	8900.00	
91	100.00	N 00° 00' 00" E	9000.00	9000.00	
92	100.00	N 00° 00' 00" E	9100.00	9100.00	
93	100.00	N 00° 00' 00" E	9200.00	9200.00	
94	100.00	N 00° 00' 00" E	9300.00	9300.00	
95	100.00	N 00° 00' 00" E	9400.00	9400.00	
96	100.00	N 00° 00' 00" E	9500.00	9500.00	
97	100.00	N 00° 00' 00" E	9600.00	9600.00	
98	100.00	N 00° 00' 00" E	9700.00	9700.00	
99	100.00	N 00° 00' 00" E	9800.00	9800.00	
100	100.00	N 00° 00' 00" E	9900.00	9900.00	

The survey was entered into a spreadsheet with the original measurement of rods converted into feet and inches. Also, note that two of the bearings are "West dominant" instead of North or South dominant. For example, the bearing W 12° E had to be converted into the current standard format of S 77° W. The left most column of the spreadsheet was used for the ESRI COGO traverse file.

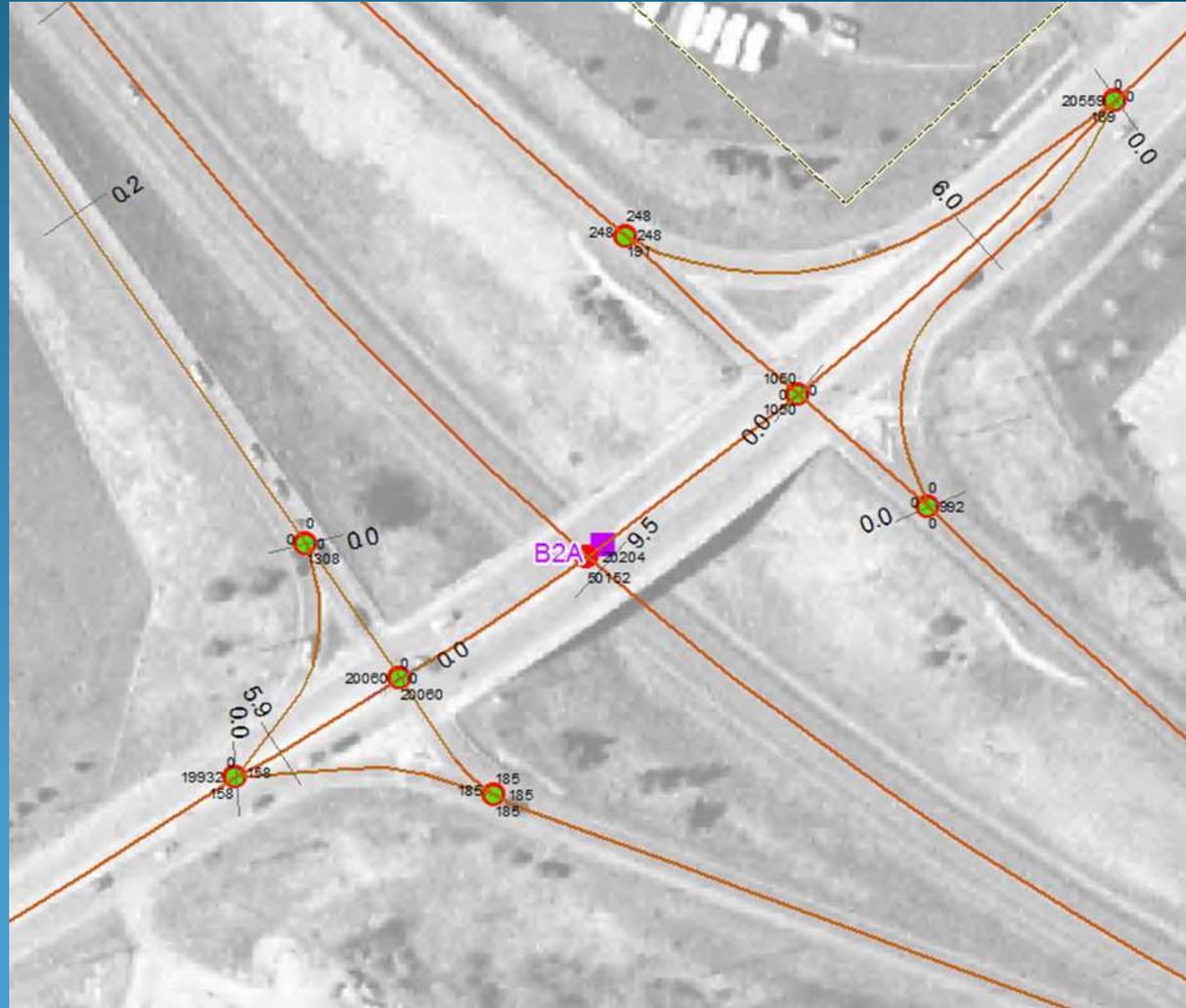
→ → → 4

The highway is generated and entered into the master road centerline data layer.

Station	Distance	Bearing	Dist	Point	Notes
1	0.00				
2	100.00	N 00° 00' 00" E	100.00	100.00	
3	100.00	N 00° 00' 00" E	200.00	200.00	
4	100.00	N 00° 00' 00" E	300.00	300.00	
5	100.00	N 00° 00' 00" E	400.00	400.00	
6	100.00	N 00° 00' 00" E	500.00	500.00	
7	100.00	N 00° 00' 00" E	600.00	600.00	
8	100.00	N 00° 00' 00" E	700.00	700.00	
9	100.00	N 00° 00' 00" E	800.00	800.00	
10	100.00	N 00° 00' 00" E	900.00	900.00	
11	100.00	N 00° 00' 00" E	1000.00	1000.00	
12	100.00	N 00° 00' 00" E	1100.00	1100.00	
13	100.00	N 00° 00' 00" E	1200.00	1200.00	
14	100.00	N 00° 00' 00" E	1300.00	1300.00	
15	100.00	N 00° 00' 00" E	1400.00	1400.00	
16	100.00	N 00° 00' 00" E	1500.00	1500.00	
17	100.00	N 00° 00' 00" E	1600.00	1600.00	
18	100.00	N 00° 00' 00" E	1700.00	1700.00	
19	100.00	N 00° 00' 00" E	1800.00	1800.00	
20	100.00	N 00° 00' 00" E	1900.00	1900.00	
21	100.00	N 00° 00' 00" E	2000.00	2000.00	
22	100.00	N 00° 00' 00" E	2100.00	2100.00	
23	100.00	N 00° 00' 00" E	2200.00	2200.00	
24	100.00	N 00° 00' 00" E	2300.00	2300.00	
25	100.00	N 00° 00' 00" E	2400.00	2400.00	
26	100.00	N 00° 00' 00" E	2500.00	2500.00	
27	100.00	N 00° 00' 00" E	2600.00	2600.00	
28	100.00	N 00° 00' 00" E	2700.00	2700.00	
29	100.00	N 00° 00' 00" E	2800.00	2800.00	
30	100.00	N 00° 00' 00" E	2900.00	2900.00	
31	100.00	N 00° 00' 00" E	3000.00	3000.00	
32	100.00	N 00° 00' 00" E	3100.00	3100.00	
33	100.00	N 00° 00' 00" E	3200.00	3200.00	
34	100.00	N 00° 00' 00" E	3300.00	3300.00	
35	100.00	N 00° 00' 00" E	3400.00	3400.00	
36	100.00	N 00° 00' 00" E	3500.00	3500.00	
37	100.00	N 00° 00' 00" E	3600.00	3600.00	
38	100.00	N 00° 00' 00" E	3700.00	3700.00	
39	100.00	N 00° 00' 00" E	3800.00	3800.00	
40	100.00	N 00° 00' 00" E	3900.00	3900.00	
41	100.00	N 00° 00' 00" E	4000.00	4000.00	
42	100.00	N 00° 00' 00" E	4100.00	4100.00	
43	100.00	N 00° 00' 00" E	4200.00	4200.00	
44	100.00	N 00° 00' 00" E	4300.00	4300.00	
45	100.00	N 00° 00' 00" E	4400.00	4400.00	
46	100.00	N			

Linear Reference System

The Road Centerline Data is the base for the Linear Reference System, with three linear reference methods being produced, including the End-to-End (ETE) for continuous mileage on routes, Town-based (TWN) for mileage that restarts at each town line and matches the reference markers, and the Local Roads LRS which begins to meet the requirements for ARNOLD.



Summary

- The Road Centerline Data is an essential data layer at VTrans and has wide reaching uses.
- Conflating the road centerline data with E911 is not easy and we have not completed the process yet, and there is considerable work ahead.
- The data continues to improve as new imagery becomes available, and new technology and field inventory methods are leveraged, including LiDAR and high accuracy GPS.
- VTrans and E911 continue to work together toward a master road centerline data layer that functions for both organizational missions.
- The data is available free for download from the Vermont Center for Geographic Information at www.vcgi.vermont.gov

Questions???



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Mapping Section

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