

# State of Vermont: FirstNet Data Collection -- Development of Coverage Objectives

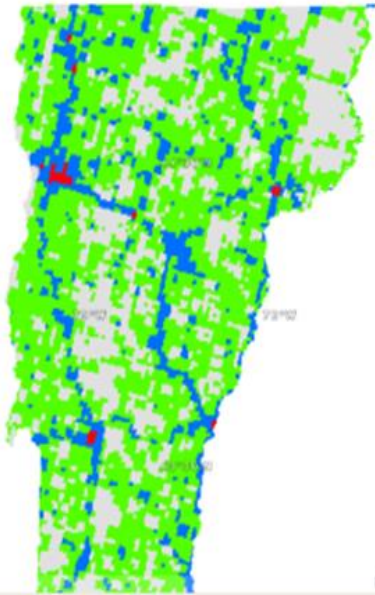


Figure 1 - FirstNet "Default" Coverage of Vermont

FirstNet deliverable [1a. Coverage Objectives](#) directs that the State of Vermont “document the changes made and/or the process taken in developing the provided coverage objectives.” Figure 1 is the “default” map of priorities provided to Vermont by FirstNet; this narrative describes the process we have taken in determining a different map of coverage objectives. Vermont has an established, by Executive Order, Public Safety Broadband Network Commission (PSBC) that is actively engaged in the management of public safety broadband development in Vermont. The Commission charged a coverage subcommittee with working with a consultant to determine Vermont's coverage objectives.

## Background

Vermont is fortunate to have a very rich set of geospatial data assets on which we could rely for the FirstNet planning process. In addition to the standard Federal sources of data (HSIP, Bureau of the Census, US Geologic Survey, etc.), Vermont is fortunate to have active development and use of detailed statewide databases based in the Vermont Center for Geographic Information (VCGI), our state Department of Public Service, Agency of Transportation, and in other agencies.<sup>1</sup>

As a consequence, an early phase of our mapping activity involved working with our GIS contractor to acquire all coverages that were possibly relevant, assembling them in the contractor’s processing environment for this project, and selecting those which appeared promising for use in our analysis. VCGI acts as a single portal for public geospatial data distribution in Vermont, offering hundreds of databases in many categories; a complete list of VCGI data offerings which were evaluated for possible inclusion in this project is provided in Annex 2.

Theme
Agriculture and Farming
Base Maps
Boundaries (Admin - Political)
Cadastral Boundaries
Climate Data
Demographic Information
Earth Surface Characteristics
Ecologic Information
Economic Information
Elevation and Derived Products
Emergency Management
Environmental Monitoring
Facilities and Structures
Fresh Water Resources
Geodetic Control
Geologic and Geophysical
Human Health and Disease
Imagery and Photographs
Tourism and Recreation
Transportation Networks
Utility Distribution Networks

Figure 2 - VCGI Data Categories

<sup>1</sup> See <http://vcgi.vermont.gov/opendata> , <http://vtransmaps.vermont.gov/> , and <http://publicservice.vermont.gov/topics/connectivity/broadbandvt/wireless>

## Pre-Processing Steps

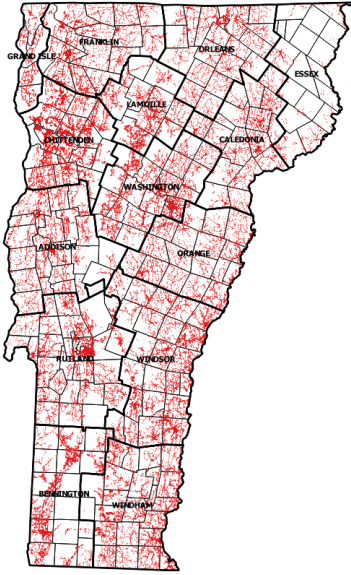


Figure 3 - Residential Structures in Vermont

**Hybrid Population** – In addition to US Census data (2010) on our population, Vermont has the benefit of a detailed point data coverage identifying the location of many feature types which are addressable under Vermont Enhanced 9-1-1 (E 9-1-1) rules; these include large buildings, but also fire hydrants, cell towers and many other feature types. A complete list of feature types is provided as Annex 1 to this document.

Vermont was concerned that mapping of population in polygons corresponding to USCB (US Census Bureau) census blocks would be unacceptably imprecise; that is, rural populations could appear to be spread across numerous cells of our scoring grid, rather than being focused in villages surrounded by relatively unpopulated forests and fields. Therefore we determined to use a “hybrid” population weighting mechanism that would more precisely assign populations to the cells of the grid which include such small villages. Our methodology is summarized below:

1. Identify residential structures by filtering E 9-1-1 site types for a subset of residential types: **Condominium, Multi-Family Dwelling, Nursing Home / Long Term Care, Other Residential, Residential Farm, Seasonal Home, and Single Family Dwelling.**
2. Intersect resulting Residential Points with census blocks.
3. Take the total population of each census block, and divide by the number of Residential Points in that block, to compute the number of people per point – assign the value as an attribute of each point.
4. Intersect Residential Points with the one square mile grid.
5. Calculate the total population in each grid cell by adding up the point values of buildings in each cell of the grid.

Populations for each cell of the grid ranged from single numbers in remote areas up to nearly 11,987 in Vermont’s most urban areas. These values were used in our grid scoring algorithm to represent the priority based on population distribution.

**Developed Areas** – As our contractor proceeded to analyze the potential usefulness of VCGI and HSIP databases, he made repeated comparisons among multiple databases of great interest – including distribution of critical infrastructure, population, and responder incidents. Empirical analysis showed to be true something that is “common sense” to anyone familiar with the Vermont landscape and settlement. That is, historic development and investment in Vermont followed the extension of our transportation arteries – primarily in river valleys. Large unbroken areas of wild lands and mountainous areas contain few people, homes, infrastructure, and little human activity.

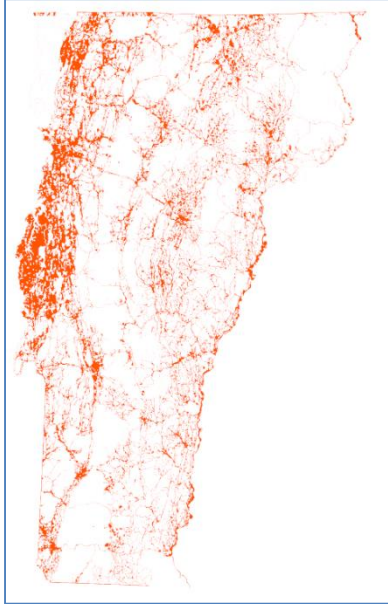


Figure 4 – Developed Lands in Vermont

Our contractor identified a single database developed by the Vermont Agency of Natural Resources -- Vermont Habitat Blocks and Wildlife Corridors<sup>2</sup> -- which very closely differentiates the “developed” areas of Vermont from the “undeveloped” areas. The metadata Abstract says:

*“Habitat blocks are areas of contiguous forest and other natural habitats that are unfragmented by roads, development, or agriculture. Vermont’s habitat blocks are primarily forests, but also include wetlands, rivers and streams, lakes and ponds, cliffs, and rock outcrops. . . .The defining factor is that there is little or no permanent habitat fragmentation from roads and other forms of development within a habitat block. This layer is a statewide representation of all habitat blocks larger than 20 acres, as derived from NOAA Coastal Change Analysis Program (CCAP) 2006 Era Land Cover Data and ancillary data (Vermont roads and E911, etc.).”*

The contractor used this data plus the National Hydro Dataset<sup>3</sup> available from USGS to identify the “developed” land of Vermont (see

Figure 4). They confirmed that included within these “developed” lands were:

- All paved/public roads
- 98.5% of all E 9-1-1 Buildings
- 99% of the Police Incident Locations

As a result of this analysis we determined that for purposes of further prioritizing our landscape for rollout of FirstNet, this database would serve as a useful proxy for the location of virtually all roads, emergency incidents, and critical infrastructure.

## Results of Pre-Processing

As a result of the research and pre-processing described above, Vermont determined that the five priority areas for FirstNet implementation could be defined based solely on:

1. The distribution of our population, as distributed in the “Hybrid” model described above,
2. The location within well-defined “developed” areas of virtually all of our emergency incidents, and critical infrastructure, and
3. The identification of stretches of highway lacking any cellular reception; by definition these highway stretches fall within our “developed” areas, and are available in a separate geospatial database from the Vermont Department of Public Service<sup>4</sup>.

<sup>2</sup> Source:

[http://dware.vcgi.org/search\\_tools/moreinfo.cfm?catalog\\_id=6&layer\\_id=20153&layer\\_name=EcologicHabitat\\_HABITATBLKS](http://dware.vcgi.org/search_tools/moreinfo.cfm?catalog_id=6&layer_id=20153&layer_name=EcologicHabitat_HABITATBLKS)

<sup>3</sup> National Hydrography Dataset (NHD) is a feature-based database that interconnects and uniquely identifies the stream segments or reaches that make up the nation's surface water drainage system; see <http://nhd.usgs.gov/data.html> .

<sup>4</sup> Source: <http://publicservice.vermont.gov/topics/connectivity/broadbandvt/06302014>

## Description of Phased Deployment

Vermont took a two-step approach to developing coverage objectives and prioritization for the state. The first step was to identify those areas of Vermont that the PSBC felt were critical to Vermont's coverage needs, and which would be prioritized as Phase 1. In order to develop this Phase 1 coverage area, multiple data analysis approaches were taken in parallel, and then combined.

- Part I: Collect and analyze statewide data related to population density, calls for service, number of first responders, general concentration of points of interest, etc. This analysis highlighted those small geographic areas of the state that are disproportionately urbanized. These areas correlate to the Burlington downtown area, along with some of the other more built up community centers in the state, and roads lined with residential structures and along which emergency incidents have occurred.
- Part II: Collect and identify those areas of the state where there is some development, but no commercial cellular service today. The PSBC felt strongly that in order to add value for the state's responders, the proposed network must cover those developed areas in which responders could not otherwise get service. In order to identify those areas, the PSBC staff reached out to the Vermont Public Service Department (PSD). For a related broadband mapping project, PSD had employed a contractor to drive test all of the major state roads; the contractor developed a point layer of where coverage dropped out. This project took that data layer, and matched it to the state road network to identify those segments of road network that are not adequately served.
- Part III was an opportunity for the PSBC to manually highlight critical areas that might not otherwise rise to the top of the list. These locations include hospitals, the Yankee Nuclear facility, major ski lifts, colleges, DPS (Vermont Department of Public Safety) headquarters, V-Trans (Vermont Agency of Transportation) regional offices and garages, etc.

These three data layers developed in Parts I, II, and III were combined to create VT's Phase 1 priority objective.

As our second step, after looking at the Phase 1 results, the decision was made to use VT's adjusted population density to help differentiate the rollout of Phases 2 through 5 of the state buildout. We used the Hybrid Population layer described on page two of this document to define the 20% of the 1x1mile cells which were the most populous, to define the 20% of cells which were the least populous, and to define the three groups in between. Prior to overlaying the results of our first step, each of the five groups had about the same number of cells.

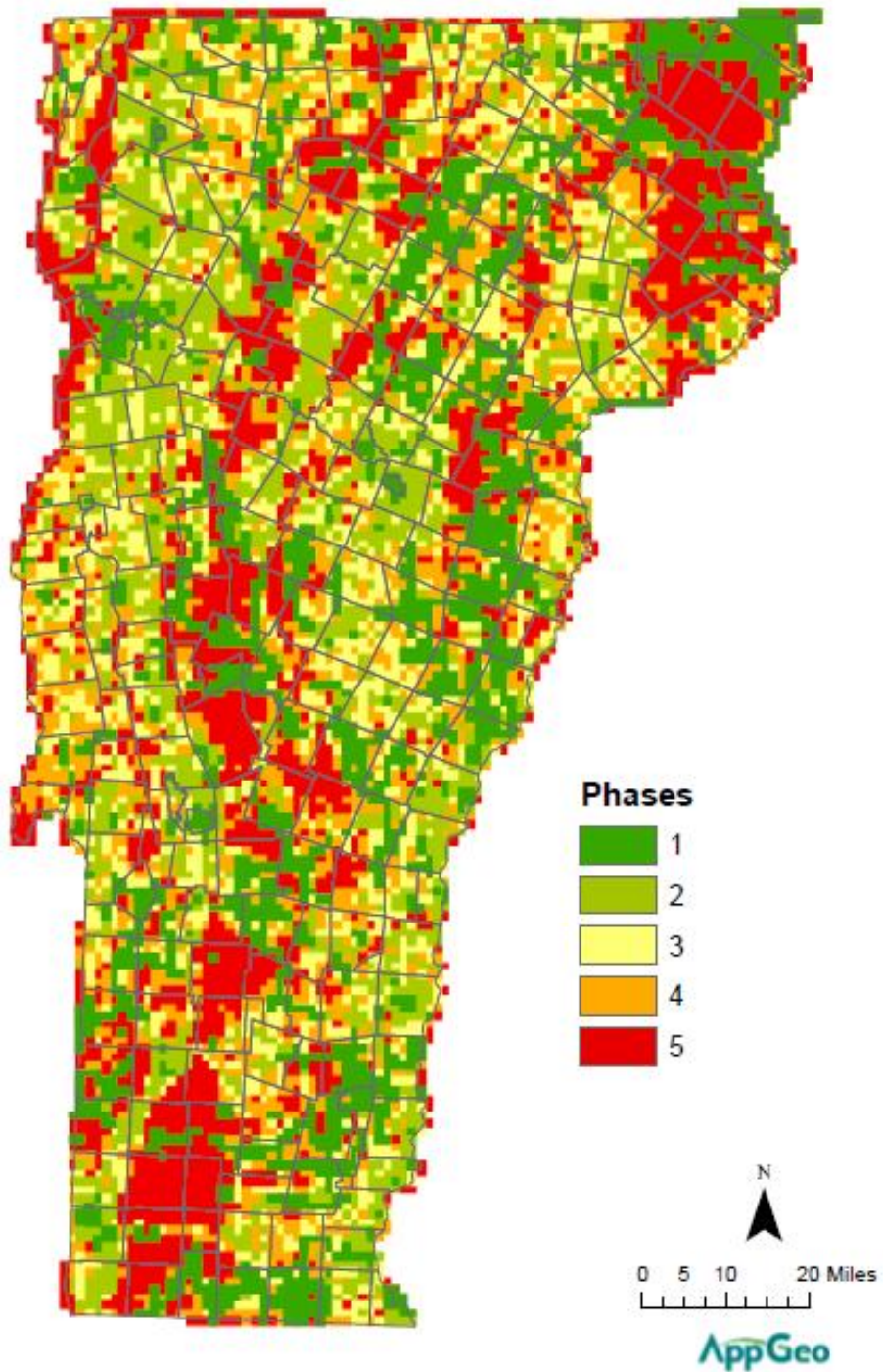
Vermont's proposed 5-phase deployment is summarized and mapped as follows:

- **Objective 1:** The State identified a select set of features that are Priority 1 locations. These included hospitals, the Yankee Nuclear facility, major ski lifts, colleges, DPS headquarters, V-Trans regional offices, etc. Vermont also wants to prioritize those areas of the state where we could demonstrate that the commercial providers do not presently provide service on the major state roads. Objective 1 covers essentially every 1 square mile cell that currently lacks commercial coverage on state roads, and which includes developed areas or which falls in the top quintile of population density.

- **Objective 2:** Second quintile of population density (not already included as a higher-priority cell)
- **Objective 3:** Third quintile of population density “
- **Objective 4:** Fourth quintile of population density “
- **Objective 5:** Fifth quintuple of population density “



# Weighted Overlay Analysis



## Annex 1: Vermont E-911 Site Types<sup>5</sup>

- Abandoned
- Access Point
- Accessory Building
- Air Support / Maintenance Facility
- Air Traffic Control Center / Command Center
- Airport Terminal
- Ambulance Service
- Auditorium / Concert Hall / Theater / Opera House
- Bank
- Boat Ramp / Dock
- Border Crossing
- Border Patrol
- Bus Station / Dispatch Facility
- Campground
- Cemetery
- City / Town Hall
- Coast Guard
- College / University
- Commercial
- Commercial Farm
- Commercial W/Residence
- Communication Box
- Communication Tower
- Community / Recreation Facility
- Court House
- Cultural
- Customs Service
- Day Care Facility
- Development Site
- Ebs Tower
- Educational
- Fair / Exhibition/ Rodeo Grounds
- Ferry Terminal / Dispatch Facility
- Fire Station
- Fish Farm / Hatchery
- Food Distribution Center
- Gas Station
- Gated W/Building
- Gated W/O Building
- Golf Course
- Government
- Gravel Pit
- Greenhouse / Nursery
- Grocery Store
- Harbor / Marina
- Hazardous Materials Facility
- Hazardous Storage Facility
- Health Clinic
- Helipad / Heliport / Helispot
- Historic Site / Point Of Interest
- Hospital / Medical Center
- House Of Worship
- Hydroelectric Facility
- Ice Arena
- Industrial
- Institutional Residence / Dorm / Barracks
- Landfill
- Law Enforcement
- Library
- Lodging
- Lookout Tower
- Lumber Mill / Saw Mill
- Manufacturing Facility
- Mine
- Mobile Home
- Morgue
- **Multi-Family Dwelling**
- Museum
- National Guard / Armory
- Nuclear Facility
- **Nursing Home / Long Term Care**
- Office Building
- Office Of Emergency Management
- Oil / Gas Facility
- Other
- Other Commercial
- **Other Residential**
- Outpatient Clinic
- Park And Ride / Commuter Lot
- Pharmacy
- Picnic Area
- Post Office
- Prison / Correctional Facility
- Private And Express Shipping Facility
- PSAP
- Public Gathering
- Public Telephone
- Public Water Supply Intake
- Public Water Supply Well
- Pump Station
- Race Track / Dragstrip
- Radio / TV Broadcast Facility
- Railroad Station
- **Residential Farm**
- Rest Stop / Roadside Park
- Restaurant
- Retail Facility
- RV Hookup
- School
- **Seasonal Home**
- **Single Family Dwelling**
- Ski Area / Alpine Resort
- Solar Facility
- Sports Arena / Stadium
- State Capitol
- State Garage
- State Government Facility
- Storage Units
- Substation
- Sugarhouse
- Temporary Structure
- Town Garage
- Town Office
- Trailhead
- Transfer Station
- Unknown
- US Forest Facility
- US Government Facility
- Utility
- Utility Pole W/Phone
- Veterinary Hospital / Clinic
- Visitor / Information Center
- Warehouse
- Waste / Biomass Facility
- Wastewater Treatment Plant
- Water Tank
- Water Tower
- Wind Facility / Wind Tower
- Youth Camp

NOTE: **Residential Site Types highlighted**

<sup>5</sup> Source: Vermont Center for Geographic Information:

[http://dware.vcgi.org/search\\_tools/moreinfo.cfm?catalog\\_id=1&layer\\_id=39&layer\\_name=EmergencyE911\\_ESITE](http://dware.vcgi.org/search_tools/moreinfo.cfm?catalog_id=1&layer_id=39&layer_name=EmergencyE911_ESITE)

## Annex 2: VCGI Data Layers Available<sup>6</sup>

Category	Database Name	Database Description
Base Maps	EmergencyE911_LANDMARKS	Landmarks captured for E911 use
Base Maps	EmergencyE911_SHEETS	E911 Atlas Map Sheets Boundaries
Boundaries	BoundaryOther_BNDHASH	Master village, town, county, RPC, and state boundary data
Boundaries	BoundaryOther_DTWNDIST	Designated Downtown Districts
Boundaries	BoundaryOther_LEPCBNDS	Local Emergency Planning Committee bnds (extract BNDHASH)
Boundaries	BoundaryOther_SCHLDIST	VT School Districts
Boundaries	BoundaryOther_SUNIONS	School supervisory union boundaries
Boundaries	BoundaryOther_ZCTA2000	ZIP Code Tabulation Areas (ZCTAs) for Vermont (2000 5-Digit)
Boundaries	UtilityTelecom_EXCHANGE	VT Telephone Exchange boundaries
Cadastral Boundaries	_ALL_IN_ONE_SHP_CadastralParcels_VTPARCELS	VT Parcel data provided by towns and RPCs
Cadastral Boundaries	CadastralConserved_PRCONLND	Private Conservation Lands in the Northern Forest Lands Area
Cadastral Boundaries	CadastralOther_LRGBLKS	Large forest land ownership blocks (Northern Forest Lands)
Cadastral Boundaries	CadastralPublands_ANRLANDS	ANR Lands Dataset (ALD)
Cadastral Boundaries	CadastralPublands_CONSPUB	Public Lands Extract from the "Vermont Conserved Lands DB"
Cadastral Boundaries	CadastralPublands_TOWNFORESTS	Public Town Forest Lands - (extracted from CONSPUB)
Demographic Information	BoundaryOther_SCHLDIST	VT School Districts
Demographic Information	BoundaryOther_SUNIONS	School supervisory union boundaries
Demographic Information	DemoCensus_BLCK2010	2010 Census Block boundaries and stats
Demographic Information	DemoCensus_BLCKGR2010	2010 Census Block Group boundaries and stats
Demographic Information	DemoCensus_CNTY2010	2010 Census County boundaries and stats
Demographic Information	DemoCensus_COUSUB2010	2010 Census County Subdivisions (towns) and stats
Demographic Information	DemoCensus_MCD1990	1990 Census Minor Civil Division boundaries and stats
Demographic Information	DemoCensus_MCDPLACE1990	1990 Census MCD & Place boundaries
Demographic Information	DemoCensus_MCDSUB1990	1990 MCDs with 18 (of 3619) 1990 Census variables from STF
Demographic Information	DemoCensus_STATE2010	2010 Census stats (statewide)
Demographic Information	DemoCensus_TRACT2010	2010 Census Tract boundaries and stats
Demographic Information	DemoHealth_CNTYSFTY	Vermont County Public Safety Stats
Demographic Information	DemoHealth_TOWNSFTY	Vermont Town Public Safety Stats
Demographic Information	DemoTrans_CNTYTRAN	Vermont County Transportation Stats, 1986-2001
Demographic Information	DemoTrans_TOWNTRAN	Vermont Town Transportation Stats
Demographic Information	FacilitiesBuildings_DENSITY	Building density - derived from E911 ESITE points
Demographic Information	FacilitiesSchools_PTSSCHOOL	VT school locations - K-12 & post-secondary
Demographic Information	TransOther_URBAREA	Urban areas of Vermont as defined by VTrans
Earth Surface Characteristics	CCLANDUSE08	Chittenden RPC Landuse data (2008) - parcel based
Earth Surface Characteristics	LandLandcov_IMPERV2001	2001 National Land Cover Dataset - Imperviousness - Vermont
Earth Surface Characteristics	LandLandcov_LCLU	Landcover/use for VT & Lake Champlain Basin (1992)
Earth Surface Characteristics	LandLandcov_LCLU2011	2011 NLCD clipped by union of WBD Subbasins and VT bound
Earth Surface Characteristics	LandLandcov_LCLULCB01	Generalized Landcover/use for Champlain Basin - SAL 2001
Earth Surface Characteristics	LandLandcov_LCLUSTREAMS	Landcover/use stream corridor dataset (5K)

<sup>6</sup> Source: <http://vcgi.vermont.gov/opendata>



Category	Database Name	Database Description
Earth Surface Characteristics	LandLandcov_NLCD2001	2001 National Land Cover Dataset - Vermont
Earth Surface Characteristics	LandLanduse_BUILTUP	Built-Up Lands in Grand Isle County, VT from 1941-2003
Earth Surface Characteristics	VT_2010_CCAP_LAND_COVER	NOAA C-CAP Landcover Change Analysis datasets
Ecologic Information	BoundaryOther_NFLBND	Northern Forest Land study area boundary
Ecologic Information	CadastralOther_LRGLKLS	Large forest land ownership blocks (Northern Forest Lands)
Ecologic Information	EcologicHabitat_HABITATBLKS	Vermont Habitat Blocks and Wildlife Corridors
Ecologic Information	EcologicHabitat_NATAREAS	Natural Areas designated by the State of Vermont
Ecologic Information	EcologicOther_ELT	Ecological Land Types - Green Mt. National Forest
Ecologic Information	EcologicStats_CNTYFRST	Vermont County Forest Data, 1966-1997
Emergency Management	_Index_EmergencyFlood_DFIRMC	FEMA Digital Flood Insurance Rate Map data (county-based)
Emergency Management	_Index_EmergencyFlood_DFIRMT	FEMA Digital Flood Insurance Rate Map data (town-based)
Emergency Management	BoundaryTile_USNGVT	U.S. National Grid Index - Vermont
Emergency Management	EmergencyE911_ALPINELIFTS	E911 alpine ski lifts data layer
Emergency Management	EmergencyE911_DW	Driveways captured for E911 use
Emergency Management	EmergencyE911_DWARCHIVE	Historical E911 DW Archive (driveways)
Emergency Management	EmergencyE911_ESA	E911 Emergency Service Agency Locations
Emergency Management	EmergencyE911_ESITE	E911 Site locations (buildings, hydrants, public phones, ..)
Emergency Management	EmergencyE911_ESITEARCHIVE	Historical E911 ESITE Archive (buildings,etc.)
Emergency Management	EmergencyE911_ESZ	E911 Emergency Service Zone data layer
Emergency Management	EmergencyE911_FOOTPRINTS	E911 building footprints layer (limited set of buildings)
Emergency Management	EmergencyE911_GDBE911	All E911 data layers in File Geodatabase format (v10.2.2)
Emergency Management	EmergencyE911_HYDRANTS	E911 Fire hydrants data layer
Emergency Management	EmergencyE911_JBOUND	E911 town boundaries data layer
Emergency Management	EmergencyE911_LANDMARKS	Landmarks captured for E911 use
Emergency Management	EmergencyE911_LKUPTABLES	E911 lookup tables - tabular
Emergency Management	EmergencyE911_RDS	E911 Road centerlines from 1:5000 orthophotos and GPS
Emergency Management	EmergencyE911_RDSARCHIVE	Historical E911 RDS Archive (road centerlines)
Emergency Management	EmergencyE911_SHEETS	E911 Atlas Map Sheets Boundaries
Emergency Management	EmergencyE911_TRAILS	E911 trails data layer
Emergency Management	EmergencyHazards_DAMINUND	High risk dam inundation areas
Emergency Management		Tropical Storm Irene 2011 - GIS Data and Resources
Emergency Management		High Water Marks 2011 - Lake Champlain flooding and TS Irene
Emergency Management		Flood Maps including TS Irene for the Winooski in Waterbury
Environmental Monitoring	EnvironHazmat_HAZSITES	Hazardous waste sites in Vermont
Environmental Monitoring	EnvironHazmat_HWFAC	Location of facilities where hazardous wastes are generated
Environmental Monitoring	EnvironMangareas_GMNFREAREAS	National Recreation Areas - Green Mountain National Forest
Environmental Monitoring	EnvironMangareas_GMNFWSR	Mgt Areas for Wild, Scenic, & Recreational rivers in GMNF
Environmental Monitoring	EnvironOther_HYDRO	Existing and potential hydro electric sites
Environmental Monitoring	EnvironPollution_ENVPTS2001	U.S. EPA Regulated Facilities Point Locations
Environmental Monitoring	EnvironSPA_GROUNDWATER	Water Supply Source Protection Areas - Groundwater
Environmental Monitoring	EnvironSPA_SURFACEWATER	Water Supply Source Protection Areas - Surface water

Category	Database Name	Database Description
Environmental Monitoring	FacilitiesOther_USTSITES	Underground storage tanks in Vermont
Facilities and Structures	CCHOUSEPTS10	Chittenden RPC Housing/Dwelling units data layer (2010)
Facilities and Structures	EmergencyE911_ESITE	E911 Site locations (buildings, hydrants, public phones, ..)
Facilities and Structures	EmergencyE911_ESITEARCHIVE	Historical E911 ESITE Archive (buildings,etc.)
Facilities and Structures	EmergencyE911_FOOTPRINTS	E911 building footprints layer (limited set of buildings)
Facilities and Structures	EnvironHazmat_HWFAC	Location of facilities where hazardous wastes are generated
Facilities and Structures	FacilitiesBuildings_DENSITY	Building density - derived from E911 ESITE points
Facilities and Structures	FacilitiesBuildings_VTPUBLIB	Vermont Public Libraries
Facilities and Structures	FacilitiesHospitals_HOSPITAL	Hospital Site Locations in Vermont
Facilities and Structures	FacilitiesOther_LANDFILLS	Current and historic landfills/waste disposal storage sites
Facilities and Structures	FacilitiesOther_USTSITES	Underground storage tanks in Vermont
Facilities and Structures	FacilitiesSchools_PTSCCHOOL	VT school locations - K-12 & post-secondary
Facilities and Structures	FacilitiesSchools_VTCOLLEGE	Vermont College Campus Buildings
Facilities and Structures	TransAir_AIRPORTS	Airport locations in the state of Vermont
Facilities and Structures	TransOther_MAINTFAC	VTrans maintenance facilities (operational sites)
Fresh Water Resources	Utility_STORMSEWER	Stormwater Infrastructure
Fresh Water Resources	WaterHydro_WBD12VT	VT Subwatershed boundaries (HUC12)
Fresh Water Resources	WaterHydro_WBD8VT	VT Subbasin boundaries (HUC8)
Fresh Water Resources	WaterOther_DAMS	Vermont Dam Inventory (VDI)
Fresh Water Resources	WaterOther_PVTWELLS	Private well information submitted by licensed well drillers
Fresh Water Resources	WaterOther_SWOUTFALLS	Stormwater outfalls within "Stormwater" impaired watersheds
Fresh Water ResourcesMgt Areas for Wild, Scenic, & Recreational rivers in GMNF	EnvironMangareas_GMNFWSR	Mgt Areas for Wild, Scenic, & Recreational rivers in GMNF
Geologic and Geophysical	GeologicOther_MRDSVT	Mineral Resources Data System (MRDS) extract for Vermont
Geologic and Geophysical	TransRoad_EROSIONRISK	Potential road erosion locations on unpaved Class 2-4 roads
Human Health and Disease	HealthStats_CNTYHEAL1	Vermont County Health Data, 1986-2000
Human Health and Disease	HealthStats_CNTYHEAL2	Vermont County Health Data, 1986-2000
Tourism and Recreation	TourismRecreation_FISHACCESS	Fishing Access Areas
Tourism and Recreation	TourismRecreation_RECSITES	Vermont Outdoor Recreation Sites Inventory
Tourism and Recreation	TourismTrails_GMNFTRAILS	Trails and minor roads in the Green Mountain National Forest
Tourism and Recreation	TourismTrails_LTSYSTEM	Long Trail System trail network
Tourism and Recreation	TourismTrails_TRAILS	Trails in Vermont
Tourism and Recreation	TourismTrails_VASTINTRSEC	Intersection points along VAST Trail Network (for GPS use)
Tourism and Recreation	WaterHydro_WHITEH2O	Whitewater Rivers of Vermont - Biology, Geography & Rec Use
Tourism and Recreation	WaterOther_WATCASGO	The Waterfalls, Cascades and Gorges, of Vermont
Transportation Networks	EmergencyE911_RDS	E911 Road centerlines from 1:5000 orthophotos and GPS
Transportation Networks	TransAir_AIRPORTS	Airport locations in the state of Vermont
Transportation Networks	TransOther_MAINTFAC	VTrans maintenance facilities (operational sites)
Transportation Networks	TransOther_PARKRIDE	Park and ride locations in VT
Transportation Networks	TransOther_RESTAREAS	Rest areas along VT Interstate Highways
Transportation Networks	TransRoad_EROSIONRISK	Potential road erosion locations on unpaved Class 2-4 roads
Transportation Networks	TransRoad_MILEPOST2002	VT highway mileposts 2002
Transportation Networks	TransRoad_RDS	VTrans Master Road Centerline Dataset

Category	Database Name	Database Description
Transportation Networks	TransRoad_SPEEDZNS2000	Designated speed zones along VT highways 2000
Transportation Networks	TransStats_ACC19982001	Accident locations 1998 - 2001
Transportation Networks	TransStats_HALS94	High Accident Locations: 1990 - 1994
Transportation Networks	TransStats_HCL20082012	High Crash Locations: 2008 - 2012
Transportation Networks	TransStructures_BCVOBCIT	VT Town Bridges and Culverts
Transportation Networks	TransStructures_BCVTRANS	VTrans Bridge & Culvert Inventory
Utility Distribution Networks	TransStats_ACC19982001	Stormwater Infrastructure
Utility Distribution Networks	UtilityOther_CVPSLIGHTS	Central VT Public Service (CVPS) lights
Utility Distribution Networks	UtilityOther_ELCFRANCHISE	Vermont Electric Utility Franchise Areas
Utility Distribution Networks	UtilityTelecom_CABLE2013	Vermont Cable Systems 2013 - broadband & cos. w/o broadband
Utility Distribution Networks	UtilityTelecom_CABLEMOD2007	Vermont Cable Modem Systems 2007
Utility Distribution Networks	UtilityTelecom_CABLEMOD2013	Vermont Cable Systems 2013
Utility Distribution Networks	UtilityTelecom_DSL2007	Vermont DSL Systems 2007
Utility Distribution Networks	UtilityTelecom_EXCHANGE	VT Telephone Exchange boundaries
Utility Distribution Networks	UtilityTelecom_TELEFAC	Telecommunication Facilities in Vermont
Utility Distribution Networks	UtilityTelecom_WISP2007	Vermont Wireless Internet Service Providers layer 2007
Utility Distribution Networks	UtilityTransmit_CVPSPoles	Central VT Public Service (CVPS) utility poles
Utility Distribution Networks	UtilityTransmit_DLGMTT	DLG Miscellaneous Transmission Lines
Utility Distribution Networks	UtilityTransmit_ELTRN	Electric Transmission Line corridors
Utility Distribution Networks	UtilityTransmit_VECDISTLINES	VEC Primary Overhead and Underground Distribution Lines