4.18 Hazardous Material Incidents

4.18.1 Hazard Profile

A hazardous material (hazmat) is any solid, liquid, or gas that can harm people, other living organisms, property, or the environment. Chemical manufacturers, distributors and vendors are sources of hazardous materials, as are hazardous materials waste sites and many users, including service stations and hospitals. Spills or releases can occur during production, storage, transportation, use, or disposal. Most incidents occur at fixed facilities, such as an industrial plant, however, spills are also common along railroads, highways, pipelines, and waterways.

4.18.1.1 HazMat classification

The U. S. Department of Transportation (USDOT) has specific rules for shipping hazardous materials. Hazardous materials are defined by the U. S. Department of Transportation in accordance with the Federal Hazardous Material Law regulations. A USDOT hazardous material classification (see Table 4-156) is applied if a material, in a particular amount and form, poses an unreasonable risk to health, safety or property. [92]

4.18.1.2 Geographic Location/ Extent

4.18.1.2.1 Toxic Release Inventory Facilities

Hazardous materials can be found in any community, as they are used in homes, hospitals, and factories, and are shipped daily via land, air, railways, and pipelines (FEMA, 2019). If released, these materials can damage the environment, critical infrastructure, property, and people. The U.S. Environmental Protection Agency's (EPA) Toxic Release Inventory (TRI) tracks the management of certain chemicals that may pose a threat to human health and the environment. Industrial facilities must report how much of each chemical is recycled, combusted for energy recovery, treated for destruction, and disposed of or released on- and off-site. Figure 4-165, Figure 4-166, and Table 4-157 show the available georeferenced TRI facilities that are located throughout the CVPDC area.

4.18.1.2.2 Natural Gas and Hazardous Liquid Pipelines

There are two general types of energy pipelines – natural gas pipelines and hazardous liquid (or liquid petroleum) pipelines. Within the hazardous liquid pipeline network there are crude oil lines, refined product lines, highly volatile liquids lines, and carbon dioxide lines. Both types of energy pipelines traverse the CVPDC area (Figure 4-167). There are about 50 miles of natural gas pipeline operated by the Transcontinental Gas Pipe Line (Transco) Corporation, and about 85 miles of hazardous liquid pipeline operated by the Colonial Pipeline. Line 25 of Colonial Pipeline which was a subline delivering petroleum products to Bedford and Lynchburg terminals was disconnected from service in September 2018. [93]

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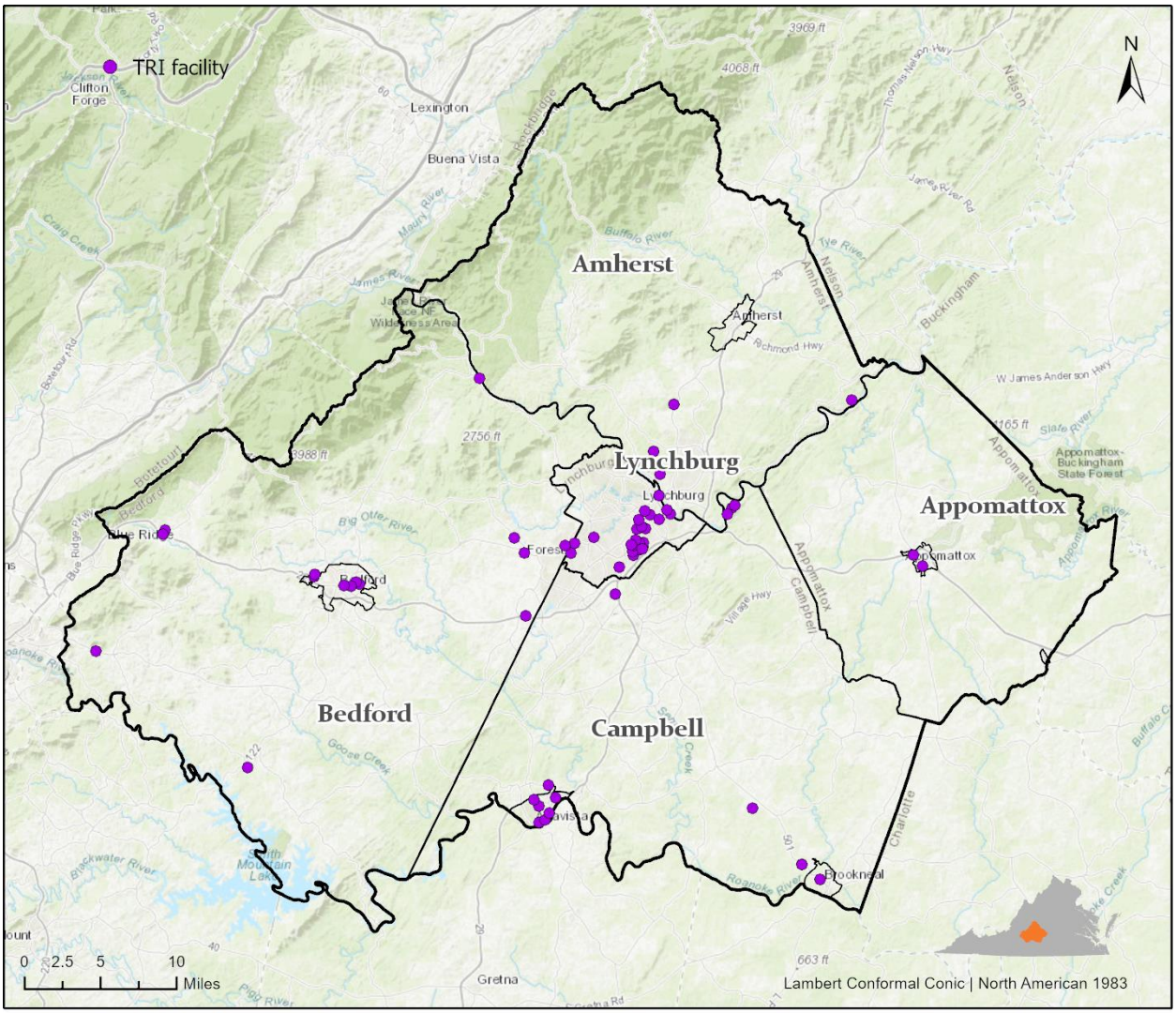
92 https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/Hazardous_Materials_Markings_Labeling_and_Placarding_Guide.pdf

93 Colonial Pipeline set to shut down section in Central Virginia. WSLS 10. May 31, 2018. https://www.wsls.com/news/virginia/bedford/colonial-pipeline-set-to-shut-down-section-in-central-virginia

EPA Toxic Release Inventory (TRI) Facilities in Central Virginia PDC

Central Virginia PDC Hazard Mitigation Plan Update 2020

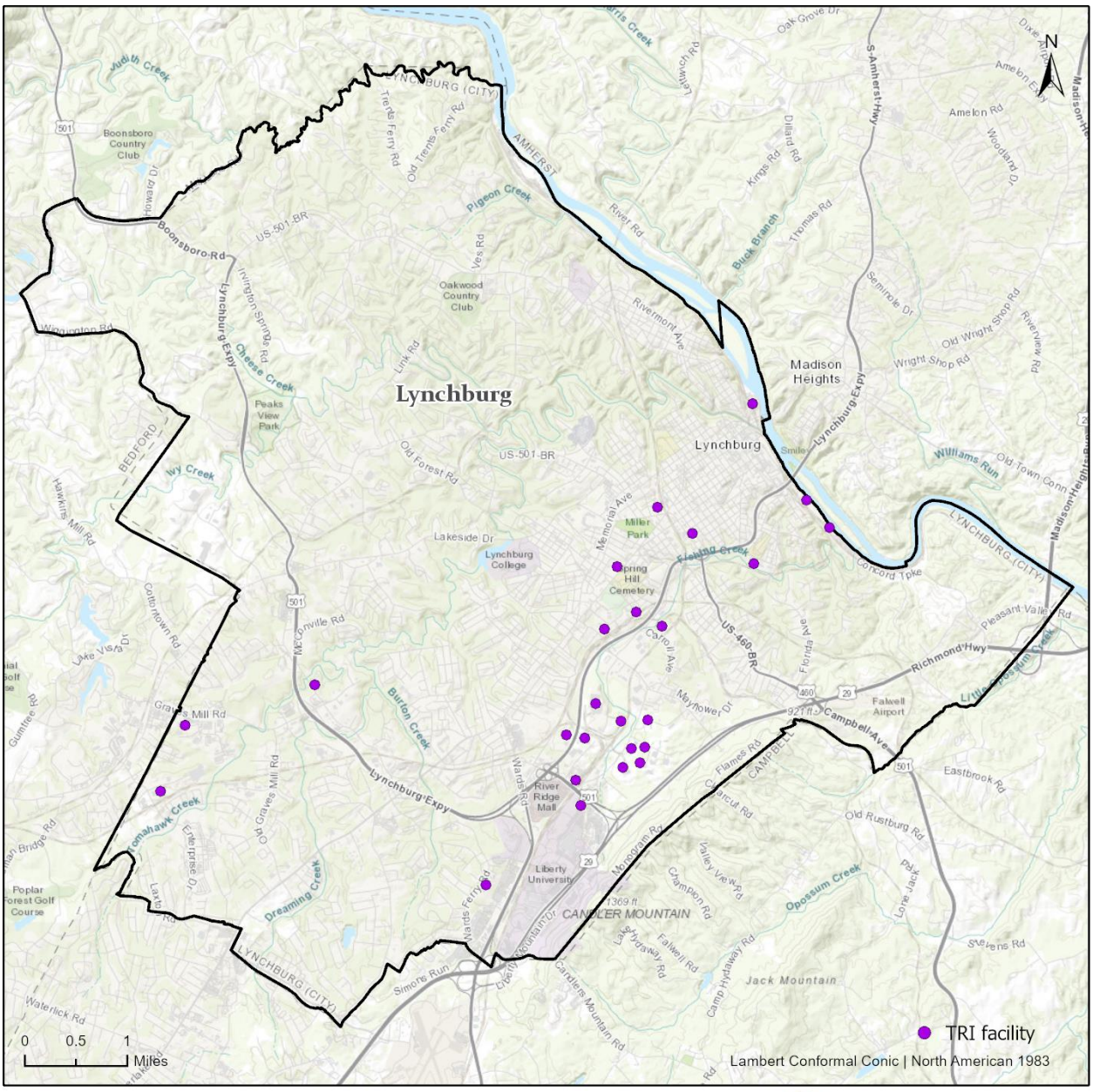


Data source: EPA Emergency Response Toxic Release Inventory, as of 02/2020
Center for Geospatial Information Technology at Virginia Tech. 05/2020

Figure 4-165 Location of EPA Toxic Release Inventory (TRI) Facilities in CVPDC

EPA Toxic Release Inventory (TRI) Facilities in City of Lynchburg

Central Virginia PDC Hazard Mitigation Plan Update 2020



Data source: EPA Emergency Response Toxic Release Inventory, as of 02/2020
Center for Geospatial Information Technology at Virginia Tech. 05/2020

Figure 4-166 Location of EPA Toxic Release Inventory (TRI) Facilities in City of Lynchburg

Table 4-156 Hazardous materials classification by the U. S. Department of Transportation

DOT Hazard Class	Division or Definition
Class 1: Explosives	Division 1.1: Mass Explosive Hazard
	Division 1.2: Projection Hazard
	Division 1.3: Fire and/or Minor Blast/Minor Projection Hazard
	Division 1.4: Minor Explosion Hazard
	Division 1.5: Very Insensitive With Mass Explosion Hazard
	Division 1.6: Extremely Insensitive; No Mass Explosion Hazard
Class 2: Gases	Division 2.1: Flammable Gases
	Division 2.2: Nonflammable Gases
	Division 2.3: Toxic Gases
	Division 2.4: Corrosive gases
Class 3: Flammable Liquid and Combustible Liquid	Division 3.1: Flashpoint below -18°C(0°F)
	Division 3.2: Flashpoint below -18°C and above, but less than 23°C(73°F)
	Division 3.3: Flashpoint 23°C and up to 61°C(141°F)
Class 4: Flammable Solid, Spontaneously Combustible, and Dangerous When Wet	Division 4.1: Flammable Solids
	Division 4.2: Spontaneously Combustible
	Division 4.3: Dangerous When Wet
Class 5: Oxidizer and Organic Peroxide	Division 5.1: Oxidizing Substances
	Division 5.2: Organic Peroxides
Class 6: Poison (Toxic) and Poison Inhalation Hazard	Division 6.1: Toxic Substances
	Division 6.2: Infectious Substances
Class 7: Radioactive	Any material, or combination of materials, that spontaneously gives off ionizing radiation. It has a specific activity greater than 0.002 microcuries per gram.
Class 8: Corrosive	A material, liquid or solid, that causes visible destruction or irreversible alteration to human skin or a liquid that has a severe corrosion rate on steel or aluminum.
Class 9: Miscellaneous Hazardous Materials	A material that presents a hazard during transport, but which is not included in another hazardous freight classification.

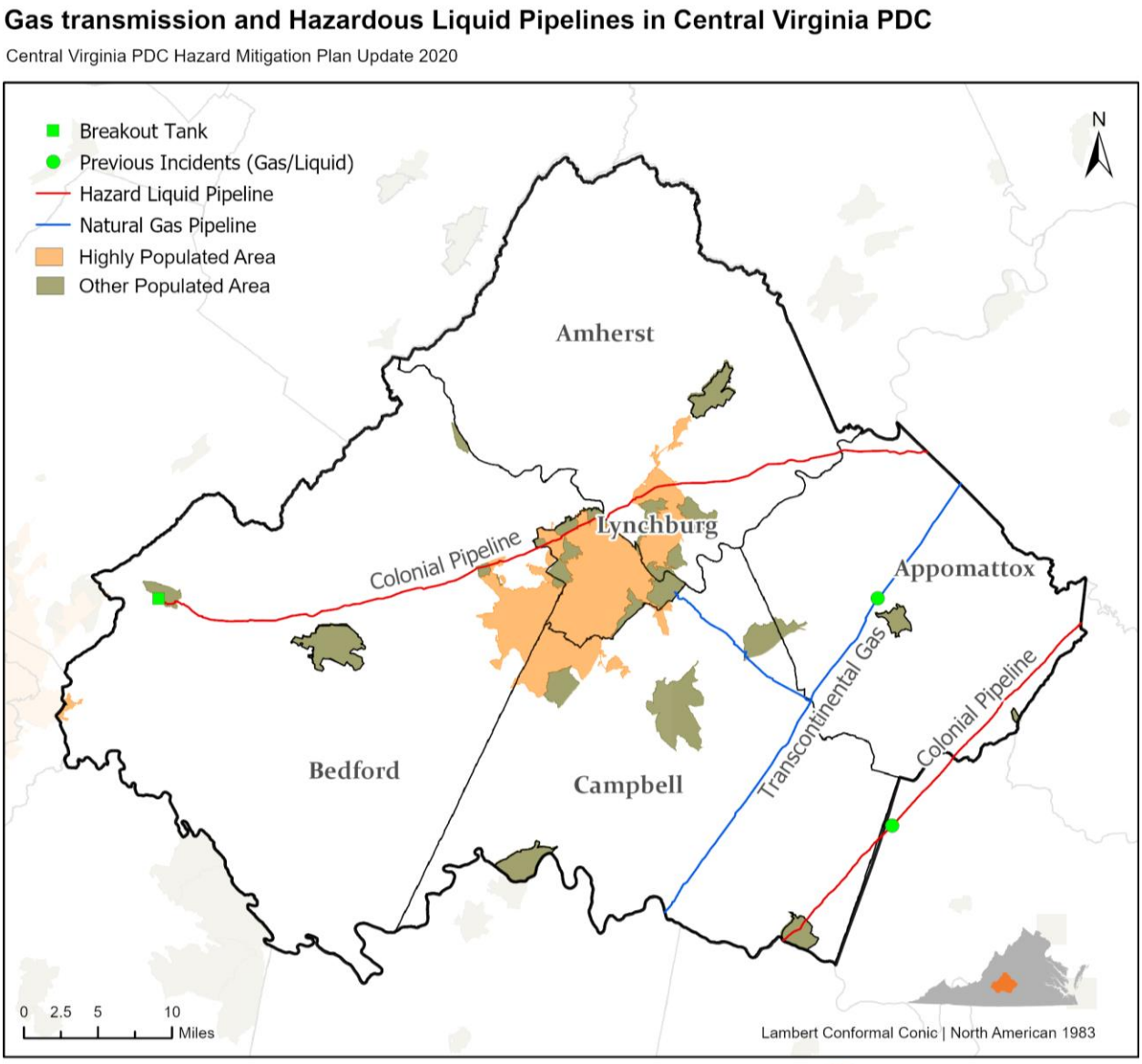
Table 4-157 EPA Toxic Release Inventory (TRI) Facilities in CVPDC Area

County/City	Town	Facility Name	Location	Coordinates
Amherst		Greif Packaging Containerboard Mill	861 Fibre Plant Rd	37.5107, -78.9101
Amherst		Lynchburg Steel & Specialty Co Inc	275 Francis Avenue	37.5075, -79.1230
Amherst		Old Virginia Brick Co	1324 Mitchell Bell Rd	37.4628, -79.1475
Amherst		Thomas Road Landfill (Amsted Ind-Griffin Pipe Products Co)	Thomas Road & Route 685	37.4411, -79.1398
Appomattox	Town of	Thomasville Furniture Ind Inc-	Founder'S Lane	37.3627,

County/City	Town	Facility Name	Location	Coordinates
	Appomattox	Virginia Operations (Closed)		-78.8375
Appomattox	Town of Appomattox	Tiger Fuel Company	130 Commerce St, Appomattox, Va 24522	37.3522, -78.8268
Bedford		Barr Laboratories Inc	2150 Perrowville Rd	37.3809, -79.3143
Bedford		Blue Ridge Wood Preserving Incorporated	1220 Hendricks Store Road	37.1622, -79.6325
Bedford		Buckeye Terminals, Llc - Roanoke Terminal	1070 Oil Terminal Rd	37.3842, -79.7342
Bedford		Commscope Technologies Llc	140 Vista Centre Dr	37.3734, -79.2536
Bedford		Custom Truck One Source	12660 E Lynchburg Salem Tpke	37.3065, -79.3008
Bedford		Georgia Pacific Corp - Big Island Mill	9363 Lee Jackson Highway	37.5328, -79.3556
Bedford		Nydree Flooring Llc (Closed)	1191 Venture Dr.	37.3664, -79.3023
Bedford		Safety-Kleen Systems	16090 Stewartsville Road	37.2727, -79.8138
Bedford		Transmontaigne - Montvale Piedmont Terminal	11685 W Lynchburg Salem Tpke	37.3881, -79.7316
Bedford		Wheelabrator Landfill (Winoa Usa, Inc.)	3 Abrasive Ave	37.3462, -79.5526
Bedford	Town of Bedford	Gran Tee Investments	906 Adams St.	37.3350, -79.5093
Bedford	Town of Bedford	Rubatex Corp Plant 2	Railroad Avenue At Grove Street	37.3356, -79.5178
Bedford	Town of Bedford	Sam Moore Furniture Llc	1556 Dawn Dr	37.3388, -79.5035
Bedford	Town of Bedford	Trident Seafoods Bedford Plant	940 Orange St	37.3369, -79.4993
Bedford	Town of Bedford	Winoa Usa (W Abrasives)	1 Abrasive Ave	37.3441, -79.5536
Campbell		Banker Steel Co Llc	351 Rangoon Rd	37.3269, -79.1939
Campbell		Brookneal Chip Mill	24 Price Ave	37.0687, -78.9728
Campbell		Bwx Technologies Inc - R&D (Closed)	1570 Mount Athos Road Route 726	37.4086, -79.0541
Campbell		Framatome Inc.	1724 Mount Athos Road	37.4111, -79.0506
Campbell		Georgia-Pacific Brookneal Osb	11795 Brookneal Highway	37.1225, -79.0313
Campbell		Lynchburg Casting Industries	1132 Mt Athos Rd	37.4027,

County/City	Town	Facility Name	Location	Coordinates
				-79.0595
Campbell		Timken Co Altavista Bearing Plant	2097 Dearing Ford Rd.	37.1453, -79.2742
Campbell	Town of Altavista	A.O. Smith Electrical Products Company (Closed)	201 Ogden Road	37.1314, -79.2916
Campbell	Town of Altavista	Abbott Laboratories - Ross Products Division	1516 Main St, Altavista	37.1333, -79.2658
Campbell	Town of Altavista	Bgf Industries	401 Amherst Avenue, Altavista	37.1122, -79.2782
Campbell	Town of Altavista	Dominion - Altavista Power Station	104 Wood Lane	37.1187, -79.2734
Campbell	Town of Altavista	Lane Home Furnishings	701 5Th St, Altavista	37.1097, -79.2855
Campbell	Town of Altavista	Schrader-Bridgeport International	205 Frazier Rd	37.1253, -79.2856
Campbell	Town of Brookneal	Dan River Inc - Brookneal Plant 2 (Closed)	813 Lynchburg Avenue	37.0543, -78.9513
Lynchburg		Allen-Morrison Signage Company	319 Rutherford Street	37.3889, -79.1678
Lynchburg		Banker Steel Co Llc - 30997	1619 Wythe Rd	37.3913, -79.1621
Lynchburg		C.R. Hudgins Plating, Inc.	3600 Candlers Mountain Rd	37.3639, -79.1721
Lynchburg		Cb Fleet Co	4615 Murray Place	37.3735, -79.1713
Lynchburg		Davis Frost Inc	3420 Candlers Mountain Rd	37.3675, -79.1730
Lynchburg		Delta Star Inc.	3550 Mayflower Drive	37.3693, -79.1646
Lynchburg		Flowserve Corporation	5114 Woodall Road	37.3739, -79.1746
Lynchburg		Gnb Inc	2800 Carroll Ave.	37.3893, -79.1575
Lynchburg		U.S. Pipe	10 Adams Street	37.4208, -79.1413
Lynchburg		Hanson Industries Inc	3300 John Capron Rd.	37.3721, -79.1607
Lynchburg		Lynchburg Foundry Co Lower Basin Plant	Garnet Street And Concord Turnpike	37.4071, -79.1318
Lynchburg		Norcraft Companies	One Millrace Drive	37.3755, -79.2423
Lynchburg		Old Dominion Wood Products	800 Craddock Street	37.4061, -79.1583
Lynchburg		Parker Hannifin Corporation - Powertrain Division	3700 Mayflower Dr	37.3719, -79.1631

County/City	Town	Facility Name	Location	Coordinates
Lynchburg		Pepsi Bottling Group	121 Bradley Dr	37.3760, -79.1601
Lynchburg		Porters Group Llc	3726 Cohen Pl	37.3699, -79.1615
Lynchburg		Rr Donnelley Printing Company	4201 Murray Place	37.3783, -79.1694
Lynchburg		Simplimatic Eng Co	1320 Wards Ferry Road	37.3527, -79.1890
Lynchburg		Slocum Adhesives Corporation	1409 Buchanan Street	37.4024, -79.1521
Lynchburg		Smith Mountain Industries Inc	1000 Dillard Drive	37.3661, -79.2467
Lynchburg		Tri Tech Laboratories Inc	1000 Robins Rd	37.3981, -79.1412
Lynchburg		Waytec Electronics Corp	1104 Mcconville Rd.	37.3811, -79.2192
Lynchburg		Westover Dairy	2801 Fort Ave	37.3977, -79.1655
Lynchburg		Westrock Converting Company	1801 Concord Turnpike	37.4032, -79.1277
Lynchburg		World Color Procurement Llc (Closed)	4225 Murray Pl	37.3758, -79.1649



(Source: PHMSA, US DOT, as of 11/15/2018)

Figure 4-167 Gas transmission and hazardous liquid pipelines in CVPDC Area

4.18.1.3 Magnitude/Severity

Unless exempted, facilities that use, manufacture, or store hazardous materials in the United States fall under the regulatory requirements of the Emergency Planning and Community Right to Know Act (EPCRA) of 1986. Under EPCRA regulations, hazardous materials that pose the greatest risk for causing catastrophic emergencies are identified as Extremely Hazardous Substances (EHSs). Releases of EHSs can occur during transport to and from fixed site facilities. Transportation-related releases are generally more troublesome because they may occur anywhere, including close to human populations, critical facilities, or sensitive environmental areas. Transportation-related EHS releases are also more difficult to mitigate due to the variability of locations and distance from response resources.

With any hazardous material release, the severity of an incident depends on several extenuating circumstances, including weather conditions, terrain, and compliance (or lack thereof) with codes, type of material released, and response time for emergency personnel. As a general guideline, there are three levels of hazardous materials incidents, ranging from easily contained by local responders to those that require vast amounts of resources (NFPA, 2008).

- Level 1: An incident involving hazardous materials that can be contained, extinguished, and/or abated using resources immediately available to the public sector responders. Level 1 incidents present little risk to the environment and/or public health with containment and cleanup.
- Level 2: An incident that is beyond the capabilities of the first responders on the scene and could be beyond the public sector responders having jurisdiction. Level 2 incidents might require the services of a state or regional response team or other state or federal assistance. This level can pose immediate and long-term risks to environmental and public health.
- Level 3: An incident that is beyond the capabilities of a single state or regional response team and requires additional assistance. Level 3 incidents can require resources from state and federal agencies and private industry. These incidents generally pose extreme, immediate, and/or long-term risks to the environment and public health.

4.18.1.4 Previous Occurrences

Pipeline Incidents

There are 4 documented pipeline incidents in or near CVPDC area, which included two gas transmission incidents and two hazardous liquid transmission incidents (Table 4-158). On November 14, 2008, a gas pipeline explosion and fire occurred in Appomattox that destroyed two homes and injured five people. This incident also brought 1 million dollars PHMSA fine to Williams Transco for safety regulation violations. [94]

Table 4-158 Gas transmission and hazardous liquid pipelines incidents in CVPDC Area

Incident	Locality	Date	Released type	Cause	Cost / loss
Gas Transmission	Campbell	1/21/1993	Natural Gas	Construction/Material Defect	73,000
Hazardous Liquid tank leaking	Bedford	11/12/2001	Kerosene	Tank Corrosion	54,000
Gas explosion	Appomattox	9/14/2008	Natural Gas	Pipe Corrosion	N/A
Hazardous Liquid leaking	Charlotte, Va (Near Campbell)	3/31/2010	Refined / Petroleum Product	Natural Force Damage	N/A

Ground Transportation Incidents

According to the Hazmat transportation incidents report released by the U.S. DOT, Hazmat incidents occurred every year in the CVPDC in the past decade (2009 - 2019), primarily in the City of Lynchburg. The

[94] http://spectrabusters.org/2014/05/18/williams-transco-explosion-in-appomattox-virginia-2008-11-14/

failures are caused for a variety of reasons including, a derailment, vehicular crash, rollover accident, forklift accident, improper preparation for transportation, and human error. Although no fatalities were reported, those documented incidents brought over 2 million damages (Table 4-159). The most significant incident occurred in 2014, as 16 cars of a 105-car train derailed in downtown Lynchburg and spilled crude oil into the James River. Officials noted that the situation could have been a lot worse had more than one tank car have ruptured and had most of the oil not quickly burned off. [95] The incident would also be worse if it had taken place on a warm, sunny day. There were no people on the trail and sitting on the Depot grille deck.

Table 4-159 Hazmat incidents in CVPDC Area, 2009 -2019

Locality	Date	Mode Of Transportation	Hazardous Class *	Commodity Long Name	Total Damages ($)
Lynchburg	1/24/2019	Air	3	Resin Solution	0
Lynchburg	7/10/2018	Highway	3	Isopropanol or Isopropyl Alcohol	0
Lynchburg	6/22/2018	Highway	5	Hydrogen Peroxide and Peroxyacetic Acid Mixtures	0
Lynchburg	4/23/2018	Highway	8	Potassium Hydroxide	0
Lynchburg	4/3/2018	Highway	6	Chloroform	$2,000
Lynchburg	9/11/2017	Highway	3	Paint	$4,500
Lynchburg	8/23/2016	Highway	3	Paint Related Material	$3,000
Lynchburg	6/23/2016	Highway	3	Petroleum Products, N.O.S.	$4,000
Lynchburg	1/28/2016	Highway	8	Potassium Hydroxide	$2,000
Lynchburg	12/4/2015	Highway	3	Paint	0
Lynchburg	6/30/2015	Highway	8	Corrosive Liquid	0
Lynchburg	6/24/2015	Highway	3	Adhesives	0
Lynchburg	3/15/2015	Rail	9	Sulfur, Molten	$2,500
Lynchburg	4/30/2014	Rail	3	Petroleum Crude Oil	$2,280,000
Lynchburg	7/18/2013	Highway	3	Paint Related Material	0
Lynchburg	2/8/2013	Highway	3	Diesel Fuel	$8,500
Lynchburg	5/23/2012	Highway	3	Paint	0
Lynchburg	3/23/2012	Rail	8	Sodium Hydroxide	0
Lynchburg	7/19/2011	Highway	3	Adhesive	0
Lynchburg	4/12/2011	Highway	3	Gasoline	$17,000
Lynchburg	6/18/2009	Highway	2	Aerosols	0
Amherst	1/2/2010	Highway	2	Petroleum Gases	$100,000

(Source: U.S. DOT. [96] See Table 4-156 *for USDOT hazardous Class)*

[95] https://www.newsadvance.com/news/local/csx-fined-over-lynchburg-train-derailment-oil-spill/article_eb126518-d708-11e4-b163-17911f8b40aa.html

[96] https://portal.phmsa.dot.gov/analytics/saw.dll?Portalpages&PortalPath=%2Fshared%2FPublic%20Website%20Pages%2F_portal%2FHazmat%20Incident%20Report%20Search

4.18.1.5 Relationship to Other Hazards

In addition to accidental human-caused hazardous material events, natural hazards may cause the release of hazardous materials and complicate response activities. The impact of earthquakes on fixed facilities or pipelines may be particularly serious due to the impairment or failure of the physical integrity of containment facilities. The threat of any hazardous material event may be magnified due to restricted access, reduced fire suppression and spill containment, and even complete cutoff of response personnel and equipment. In addition, the risk of terrorism involving hazardous materials is considered a major threat due to the location of hazardous material facilities and transport routes throughout communities and the frequently limited antiterrorism security at these facilities. Figure 4-168 shows the interrelationship (causation, concurrence, *etc.*) between this hazard and other hazards discussed in this plan update.

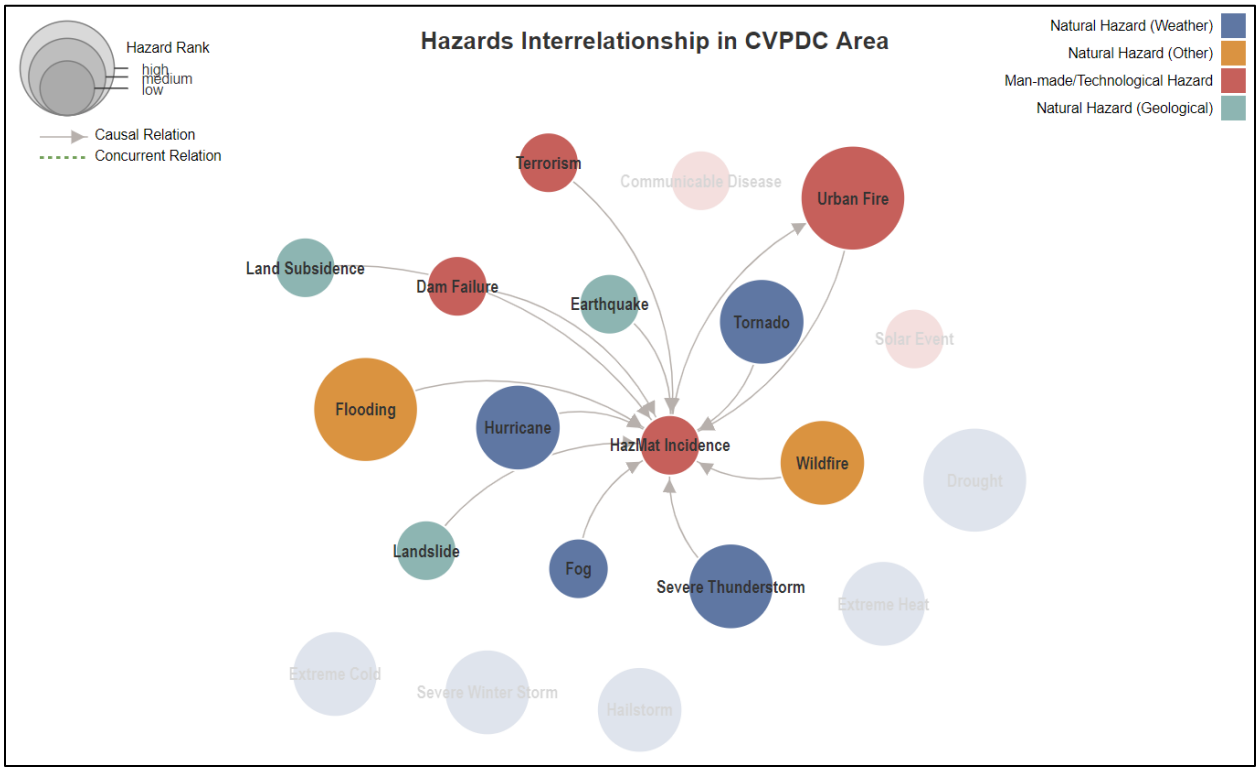


Figure 4-168 Hazards interrelationship

4.18.2 Impact & Vulnerability

Most hazardous material releases do not usually have a direct effect on critical facilities and infrastructure. Some critical infrastructure uses hazardous materials to operate such as chlorine for water treatment and PCB's for electric transformers. Similarly, the contamination of the water supply may be treated like a hazardous material release. Propane, oil, and natural gas, necessary fuels for heating, can also be hazardous if released during their delivery due to their explosive potential. Transportation may be limited if a key roadway or railway is blocked by an incident.

A hazardous material release can bring possible losses to structure due to inaccessibility, contamination, and structural and contents losses if an explosion is present; and possible economic losses caused by business closures and associated business disruption losses.

A hazardous material release can also include significant environmental impacts, which are listed below.

- Hydrologic effects
  - Surface and groundwater contamination
  - Other effects on water quality such as changes in water temperature
  - Damage to streams, lakes, ponds, estuaries, and wetland ecosystems
- Air and soil quality effects
  - Pollutants, smoke, and dust
  - Loss of Quality in Landscape and Soil Quality
- Damage to plant communities
  - Loss of biodiversity
  - Damage to vegetation
- Damage to animal species
  - Animal fatalities
  - Degradation of wildlife and aquatic habitat
  - Pollution of drinking water for wildlife
  - Loss of biodiversity
  - Disease

4.18.3 Risk Assessment and Jurisdictional Analysis

4.18.3.1 Mobile HazMat Analysis

The areas along major hazmat transportation networks (including primary highways, railroads and energy pipelines) are considered to be risk-prone with respect to hazmat material ground transportation. In this risk analysis, two size buffers, 0.5 and 1 miles, were created for transportation networks and were assumed in respect to the different levels of impact area – immediate (primary) and secondary. The buffer sizes were adopted from the U.S. DOT 1996 HazMat Routing Guide (Table 4-160). Figure 4-169 and Figure 4-170 show the corridors and buffers of mobile hazardous materials overlaid with population density and critical facilities. Table 4-161 shows potential affected population in these impact areas of mobile hazard analysis. Table 4-162 lists total numbers of critical facilities within potential immediate impact area (0.5-mile transportation buffer) of hazmat release for each jurisdiction.

Table 4-160 Potential Impact area (buffer size) by HazMat Material Class

HazMat Class	Impact Area / Buffer size (mile)
Explosives	1.0
Flammable Gas	0.5
Poison Gas	5.0
Flammable/Combustible Liquid	0.5
Flammable Solid; Spontaneously Combustible; Dangerous when Wet	0.5
Oxidizer/Organic Peroxide	0.5
Poisonous, not gas	5.0

HazMat Class	Impact Area / Buffer size (mile)
Corrosive Material	0.5

(Source: USDOT 1996)

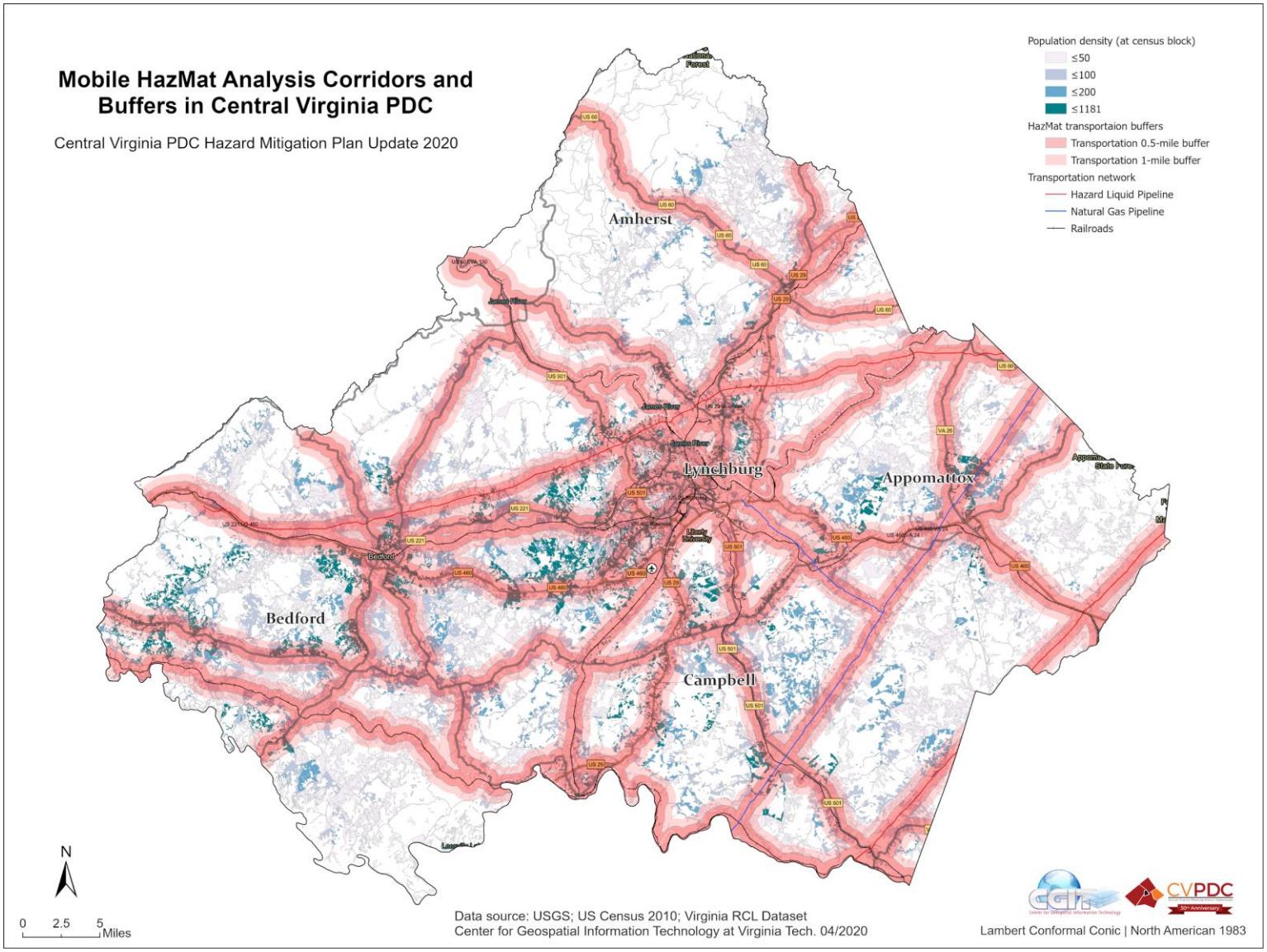


Figure 4-169 Mobile HazMat analysis corridors and buffers in CVPDC (overlay with population density)

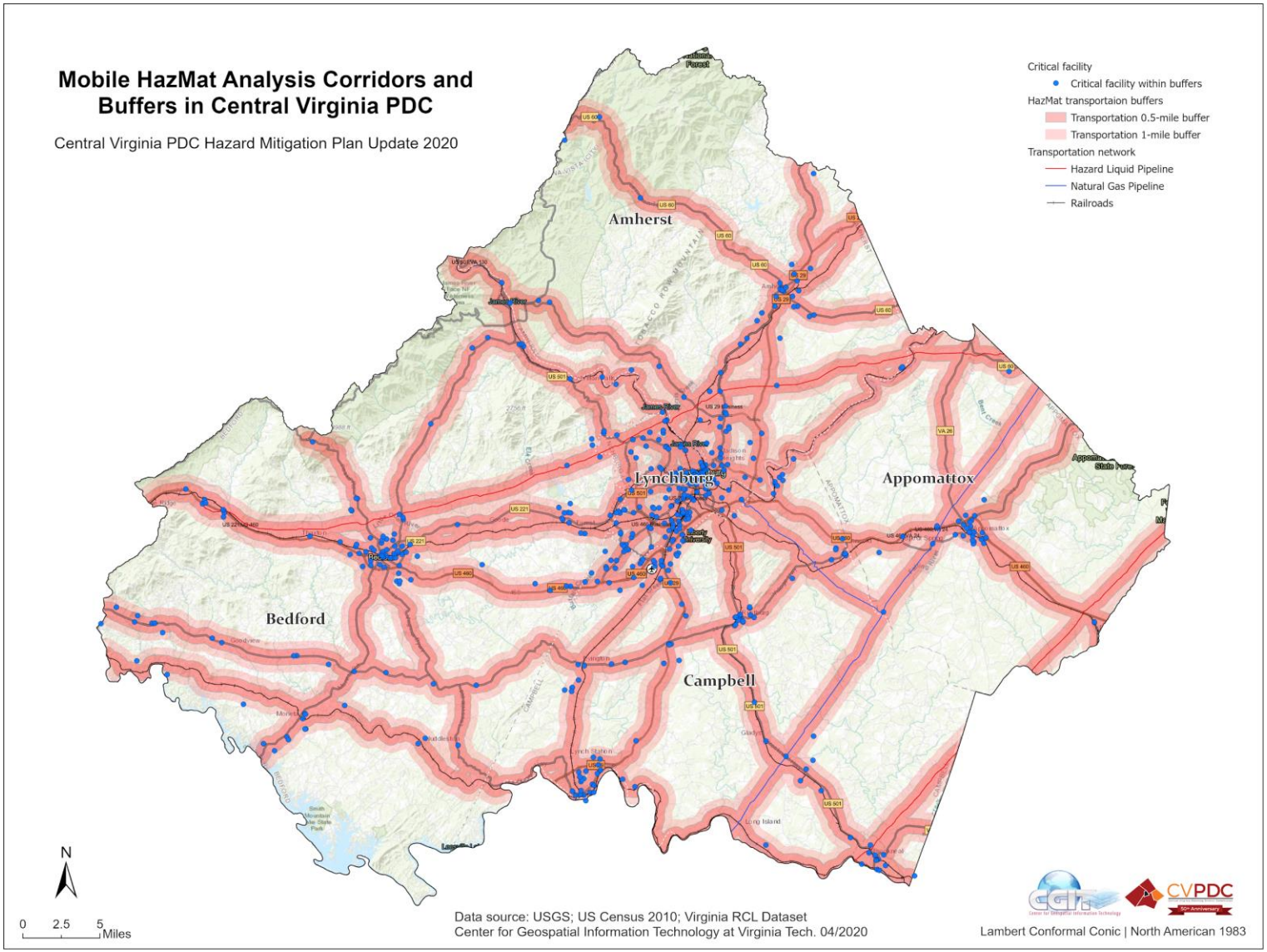


Figure 4-170 Mobile HazMat analysis corridors and buffers in CVPDC (overlay with critical facility)

Table 4-161 Potential affected population in impact area of mobile hazmat analysis

Jurisdiction	Population in immediate impact area (0.5-mile buffer)	Population in secondary impact area (1-mile buffer)
Amherst County	26,311	29,193
Appomattox County	9,730	11,642
Bedford County	49,934	59,765
Campbell County	42,514	50,209
Lynchburg City	71,905	75,528
Total	**200,394**	**226,337**

Table 4-162 Number of critical facilities within potential immediate impact area (0.5-mile transportation buffer) of hazmat release in mobile hazmat analysis

Critical Facility	Amherst County	Appomattox County	Bedford County	Campbell County	Lynchburg City
Airport	1	1	2	1	1
Attractions	1	1	1	1	7
Campground	3	0	6	0	0
College	1	1	1	0	9
Communication Facility	9	2	2	13	1
Electrical Substation	8	2	8	8	14
Emergency Operations Center	1	1	0	1	1
Energy Facility	2	0	3	1	1
Fire Stations	4	2	12	12	9
Gas Facility	1	1	0	2	1
HazMat Facility	3	2	14	15	25
Law Enforcement	3	2	2	5	5
Public Health	1	0	2	0	4
Schools	12	4	24	19	26
Service Authority	1	0	0	1	0
Sewer Pump Station	1	4	18	16	0
Nursing Home	2	1	5	3	9
Detention Facility	2	1	1	1	2
Wastewater Treatment Plant	3	1	3	7	1
Water Storage Facility	6	3	5	17	7
Water Booster Pump Station	0	1	2	2	0
Historic Site	0	0	0	12	0
Large Population Venue	0	0	0	1	3
Cooling Center	0	0	0	0	2
Transportation Hub	0	0	0	0	1
Total Count	**65**	**30**	**111**	**138**	**129**

4.18.3.2 Fixed HazMat Analysis

In fixed hazmat site analysis, the georeferenced EPA TRI toxic sites were analyzed and the circle buffers are drawn around each hazardous material site. The same buffer sizes, 0.5 and 1 miles are used to represent immediate and secondary impact areas. Figure 4-171 displays the fixed hazmat analysis locations and buffers in CVPDC, overlaid with population density at census block level. Table 4-163 shows potential affected population in these impact areas.

Figure 4-172 displays the impact area of fixed hazmat facilities in the City of Lynchburg. A network of six turnpikes, the James River, and three railroads have made the City of Lynchburg an important transportation hub for the CVPDC area. Over two dozen HazMat facilities (accounting for 42% of total HazMat facilities in CVPDC) are situated here (Table 4-164). Such unique characteristics makes the city at particular high risk of HazMat release incidents.

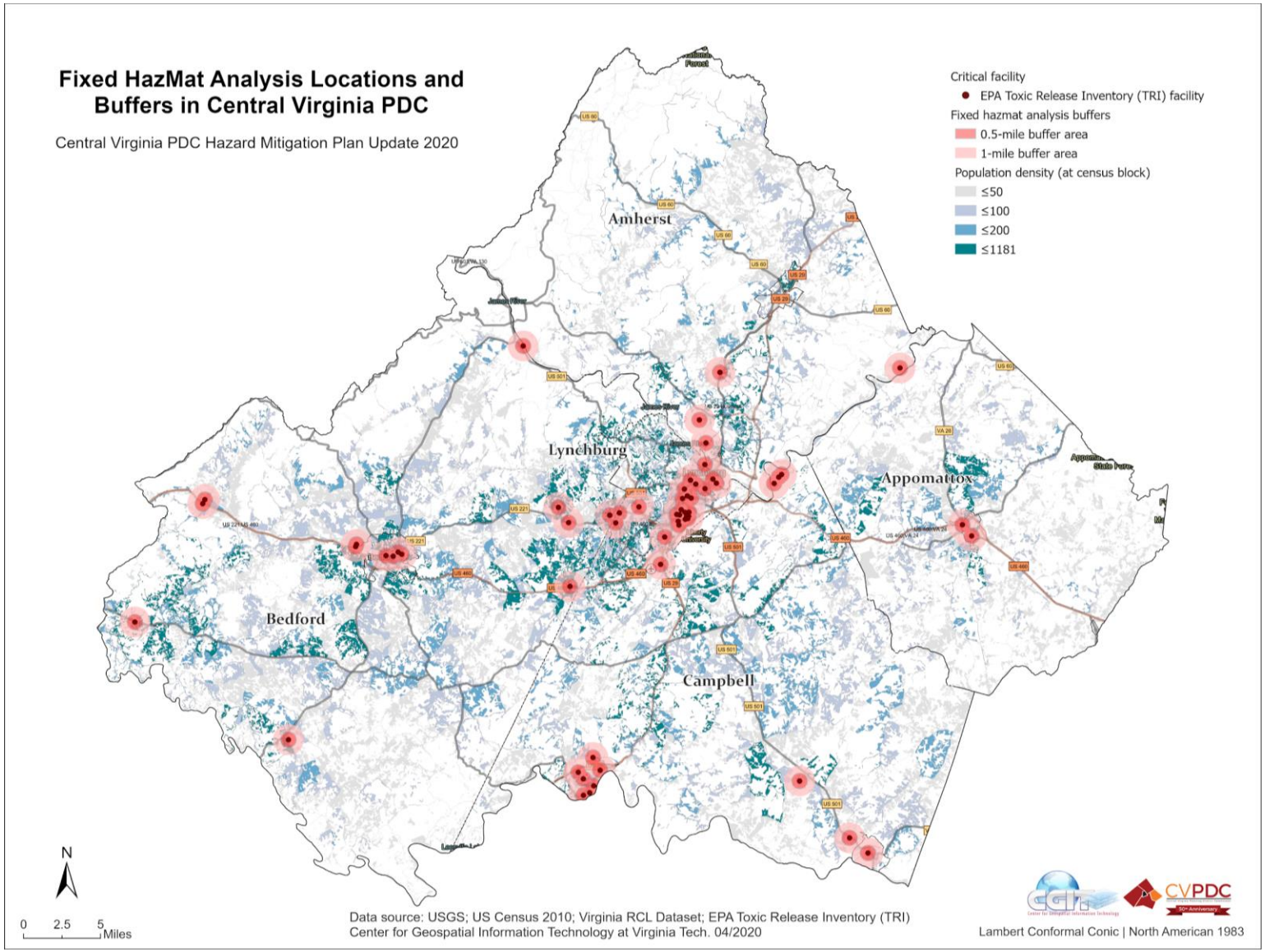
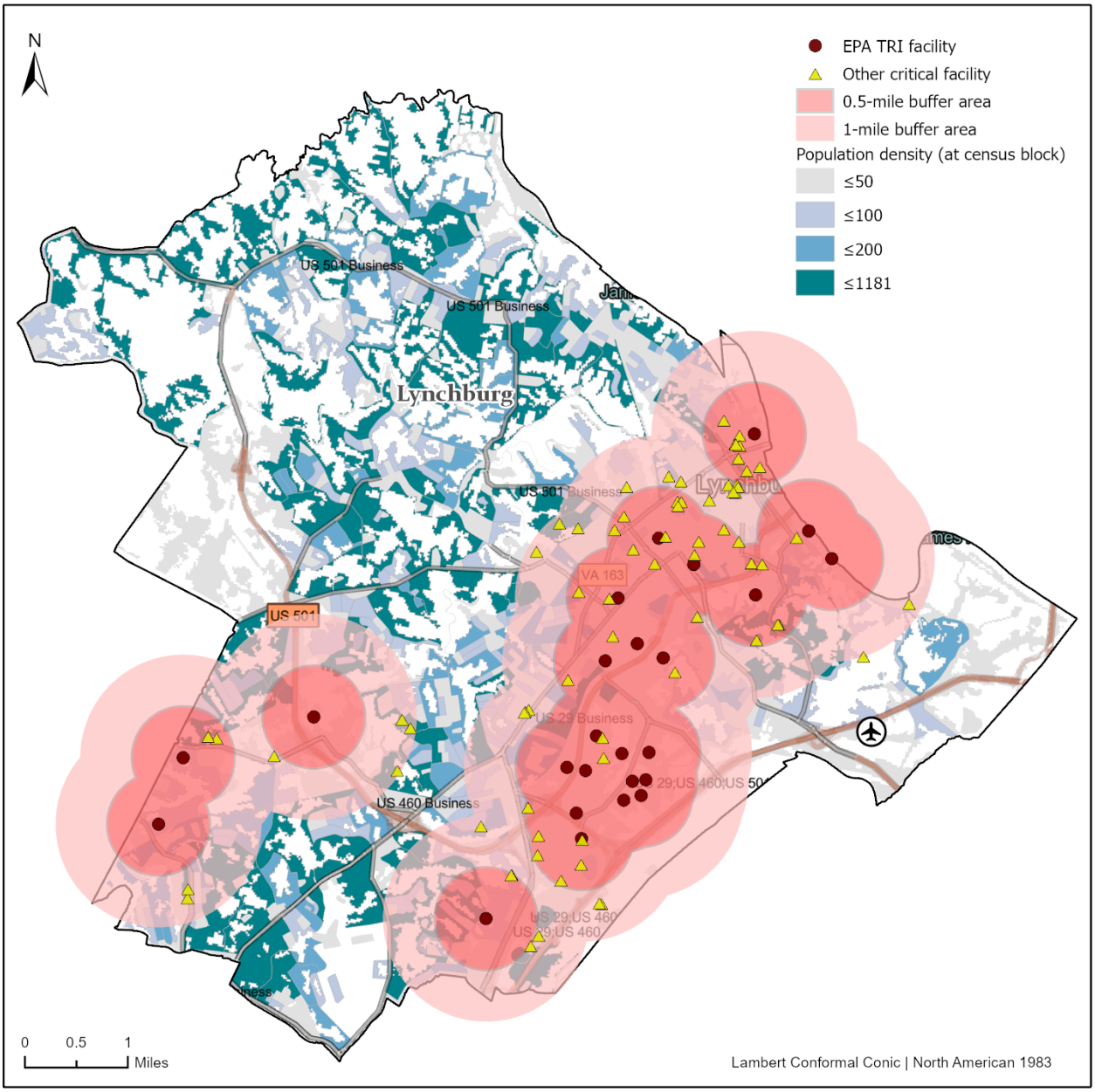


Figure 4-171 Fixed hazmat analysis locations and buffers in CVPDC (overlay with population density)

Fixed HazMat Analysis Locations and Buffers in City of Lynchburg

Central Virginia PDC Hazard Mitigation Plan Update 2020



Data source: USGS; US Census 2010; Virginia RCL Dataset; EPA Toxic Release Inventory (TRI)
Center for Geospatial Information Technology at Virginia Tech. 04/2020

Figure 4-172 Fixed hazmat analysis locations and buffers in City of Lynchburg

Table 4-163 Potential affected population in impact areas of fixed hazmat analysis

Jurisdiction	Population in immediate impact area (0.5-mile buffer)	Population in secondary impact area (1-mile buffer)
Amherst County	6,169	6,169
Appomattox County	3,602	3,602
Bedford County	21,043	21,077
Campbell County	9,558	9,558
Lynchburg City	48,982	48,982
Total	89,354	89,388

Table 4-164 Critical facilities within potential immediate impact area (0.5-mile round buffer) of fixed hazmat analysis

Jurisdiction	Facility Type	Facility Name	Location	Coordinates
Amherst	Fire Stations	Greif Brothers Packaging Corporation - Riverville Mill Fire Brigade And Emergency Medical Services	861 Fibre Plant Road	37.5120, -78.9083
Appomattox	College	Central Virginia Community College - Appomattox Center		37.3611, -78.8292
Appomattox	Emergency Operations Center	Appomattox County Emergency Operations Center	339 Court Street	37.3559, -78.8296
Appomattox	Law Enforcement	Appomattox County Sheriffs Office / Appomattox County Jail	179 Morton Lane	37.3555, -78.8307
Appomattox	Schools	Appomattox Middle	2020 Church Street	37.3558, -78.8254
Appomattox	Schools	Appomattox Primary	185 Learning Lane	37.3594, -78.8340
Appomattox	Sewer Pump Station	Pump Station	419 Jones St, Appomattox, Va 24522	37.3656, -78.8299
Appomattox	Sewer Pump Station	Pump Station	State Rte 1036, Appomattox, Va 24522	37.3481, -78.8272
Appomattox	Sewer Pump Station	Sewer Pump Station	7901 Richmond Hwy, Appomattox, Va 24522	37.3662, -78.8433
Appomattox	Nursing Home	Appomattox Health & Rehabilitation Center	215 Evergreen Avenue	37.3466, -78.8254
Appomattox	Detention Facility	Appomattox County Jail	179 Morton Lane	37.3555, -78.8308
Bedford	College	Central Virginia Community College - Bedford Center		37.3446, -79.4987
Bedford	Communicatio n Facility	Wslk - Am - Smile Broadcasting, Llc		37.1647, -79.6343

Jurisdiction	Facility Type	Facility Name	Location	Coordinates
Bedford	Electrical Substation	Electrical Substation		37.3356, -79.5225
Bedford	Electrical Substation	Electrical Substation		37.3334, -79.5123
Bedford	Electrical Substation	Electrical Substation		37.3401, -79.5042
Bedford	Energy Facility	Georgia-Pacific Big Island Plant	9363 Lee Jackson Highway	37.5351, -79.3573
Bedford	Fire Stations	Bedford Fire Department	315 Bedford Avenue	37.3365, -79.5242
Bedford	Fire Stations	Big Island Volunteer Fire Department Incorporated	10770 Lee Jackson Highway	37.5346, -79.3606
Bedford	Fire Stations	Montvale Volunteer Fire Department	1271 Volunteer Road	37.3850, -79.7305
Bedford	Law Enforcement	Bedford Police Department	215 East Main Street	37.3342, -79.5213
Bedford	Law Enforcement	Virginia State Police Division 6 Area 41 - Bedford	874 Blue Ridge Avenue	37.3377, -79.5496
Bedford	Public Health	Surgery Center Of Central Virginia	1835 Graves Mill Road	37.3773, -79.2442
Bedford	Schools	Bedford Middle	503 Longwood Avenue	37.3394, -79.5217
Bedford	Schools	Forest Elementary	1 Scholar Lane	37.3757, -79.3079
Bedford	Schools	Forest Middle	100 Ashwood Drive	37.3693, -79.3096
Bedford	Schools	New London Academy Elementary	12400 East Lynchburg-Salem Turnpike	37.3066, -79.3056
Bedford	Sewer Pump Station	Pump Station #3		37.3388, -79.4941
Bedford	Sewer Pump Station	Pump Station #9		37.3412, -79.5171
Bedford	Nursing Home	Campbell Rest Home	1350 Longwood Ave	37.3446, -79.5075
Bedford	Nursing Home	Runk & Pratt Of Forest Inc.	208 Gristmill Road	37.3758, -79.2467
Bedford	Detention Facility	Bedford Adult Detention Center	1000 Broad St	37.3375, -79.5083
Bedford	Wastewater Treatment Plant	Bedford Wastewater Treatment Plant	852 Orange St	37.3336, -79.5067
Bedford	Water Storage Facility	Cascade Forest Lt 14 B-2 Water Tank	Cascade Forest Lt 14 B-2	37.2786, -79.8101
Campbell	Airport	Lynchburg Rgnl/Preston Glenn Fld Airport		37.3254, -79.2012

Jurisdiction	Facility Type	Facility Name	Location	Coordinates
Campbell	Attractions	Avoca Museum	1514 Main St, Altavista, Va 24517	37.1300, -79.2697
Campbell	Communicatio n Facility	Wkde - Am - D.J. Broadcasting, Inc.,		37.1225, -79.2890
Campbell	Electrical Substation	Electrical Substation		37.4043, -79.0595
Campbell	Energy Facility	Altavista Power Station	104 Wood Lane, Altavista	37.1188, -79.2735
Campbell	Fire Stations	Altavista Fire Company	1280 Main Street, Altavista	37.1199, -79.2755
Campbell	Fire Stations	Bwx Technologies Nuclear Operations Division Emergency Team	1570 Mount Athos Road	37.4006, -79.0568
Campbell	Fire Stations	Lynchburg Regional Airport Aircraft Rescue Fire Fighting	984 Airport Road	37.3289, -79.2016
Campbell	Historic Site	Mount Athos	General Location	37.4057, -79.0501
Campbell	Large Population Venue	Altavista Area Ymca Family Center	1000 Franklin Ave, Altavista, Va 24517	37.1140, -79.2889
Campbell	Law Enforcement	Altavista Police Department	510 7Th Street, Altavista	37.1103, -79.2899
Campbell	Law Enforcement	Lynchburg Regional Airport Police Department	4308 Wards Road	37.3304, -79.1938
Campbell	Schools	Altavista Elementary	1003 Lynch Mill Road	37.1324, -79.2831
Campbell	Schools	Brookneal Elementary	133 Charlotte Street	37.0521, -78.9443
Campbell	Sewer Pump Station	Sheetz Pump Station	601	37.3254, -79.1924
Campbell	Nursing Home	Autumn Care Of Altavista	1317 Lola Avenue	37.1240, -79.2881
Campbell	Wastewater Treatment Plant	Altavista Wastewater Plant	Ln Access Rd, Altavista	37.1123, -79.2740
Campbell	Wastewater Treatment Plant	Altavista Water Treatment Plant	20 Ricky Van Shelton Dr, Hurt, Va 24563	37.1045, -79.2833
Campbell	Water Storage Facility	Altavista Water Tower	Tardy Mtn Rd And Dearingford Rd	37.1437, -79.2665
Campbell	Water Storage Facility	Water Tank	Melinda Drive	37.1270, -79.2904
Campbell	Water Storage Facility	Water Tank	Clarion Road	37.1382, -79.2685
Campbell	Water Storage	Water Tank #2	Melinda Drive	37.1271,

Jurisdiction	Facility Type	Facility Name	Location	Coordinates
	Facility			-79.2903
Lynchburg	Attractions	Amazement Square Child Museum	27 9Th St	37.4162, -79.1403
Lynchburg	Attractions	Ann Spencer House & Garden Museum	1313 Pierce St	37.4038, -79.1520
Lynchburg	Attractions	Point Of Honor Museum	112 Cabell St	37.4206, -79.1439
Lynchburg	College	Central Virginia Community College		37.3589, -79.1844
Lynchburg	College	Sylvain Melloul International Hair Academy		37.3644, -79.1797
Lynchburg	Electrical Substation	Electrical Substation		37.3754, -79.1681
Lynchburg	Electrical Substation	Electrical Substation		37.3873, -79.1555
Lynchburg	Electrical Substation	Electrical Substation		37.4062, -79.1339
Lynchburg	Electrical Substation	Electrical Substation		37.4194, -79.1447
Lynchburg	Electrical Substation	Electrical Substation		37.4192, -79.1439
Lynchburg	Electrical Substation	Electrical Substation		37.4194, -79.1446
Lynchburg	Electrical Substation	Electrical Substation		37.3617, -79.1798
Lynchburg	Electrical Substation	Electrical Substation		37.4093, -79.1644
Lynchburg	Emergency Operations Center	Lynchburg City Emergency Communication Center	3621 Candlers Mountain Road	37.3638, -79.1720
Lynchburg	Fire Stations	Lynchburg Fire Department Station 2 - Grace Street	2006 Grace Street	37.4025, -79.1400
Lynchburg	Fire Stations	Lynchburg Fire Department Station 6 - Miller Park	2084 Fort Avenue	37.4026, -79.1590
Lynchburg	Fire Stations	R R Donnelley Incorporated Fire Brigade	4201 Murray Place	37.3782, -79.1683
Lynchburg	Large Population Venue	Academy Center Of The Arts	600 Main St, Lynchburg, Va 24504	37.4174, -79.1441
Lynchburg	Large Population Venue	City Stadium	3176 Fort Ave, Lynchburg, Va 24501	37.3924, -79.1664
Lynchburg	Law Enforcement	Babcock And Wilcox Police Department	800 Main Street	37.4156, -79.1427
Lynchburg	Law	Central Virginia Community	3506 Wards Road	37.3589,

Jurisdiction	Facility Type	Facility Name	Location	Coordinates
	Enforcement	College Police		-79.1845
Lynchburg	Law Enforcement	Liberty University Police Department	1971 University Boulevard	37.3581, -79.1757
Lynchburg	Public Shelter - Cooling Center	Salvation Army	2215 Park Ave, Lynchburg, Va 24501	37.4047, -79.1628
Lynchburg	Schools	Crossroads / Single Point Of Entry	405 Cabell Street	37.4227, -79.1467
Lynchburg	Schools	E.C. Glass High	2111 Memorial Avenue	37.4074, -79.1660
Lynchburg	Schools	Fort Hill Community School	1350 Liggates Road	37.3863, -79.1744
Lynchburg	Schools	Liberty Christian Academy	100 Mountain View Road	37.3603, -79.1722
Lynchburg	Schools	Lynchburg Day Services	1517 Jackson Street	37.4057, -79.1441
Lynchburg	Schools	Lynchburg Juvenile Detention Home	1400 Florida Avenue	37.3940, -79.1373
Lynchburg	Schools	New Vistas School	520 Eldon St	37.3987, -79.1724
Lynchburg	Schools	Paul Laurence Dunbar Middle For Innovation	1208 Polk Street	37.4074, -79.1467
Lynchburg	Schools	Robert S. Payne Elementary	1201 Floyd Street	37.4057, -79.1512
Lynchburg	Schools	T.C. Miller Elementary For Innovation	600 Mansfield Avenue	37.3978, -79.1670
Lynchburg	Schools	William M. Bass Elementary	1730 Seabury Avenue	37.3918, -79.1410
Lynchburg	Nursing Home	Bentley Commons At Lynchburg	1604 Graves Mill Road	37.3782, -79.2364
Lynchburg	Nursing Home	Guggenheimer Health And Rehab Center	1902 Grace Street	37.4026, -79.1419
Lynchburg	Nursing Home	Heritage Green Assisted Living	201 Lillian Lane	37.3785, -79.2379
Lynchburg	Nursing Home	Lynchburg Health & Rehabilitation Center	5615 Seminole Avenue	37.3684, -79.1815
Lynchburg	Detention Facility	Lynchburg Regional Juvenile Detention Center	1400 Florida Ave	37.3940, -79.1371
Lynchburg	Transportation Hub	Kemper Street Station	825 Kemper St	37.4065, -79.1571
Lynchburg	Water Storage Facility	Ground Storage Tank, 1,400,000 Gallon	525 Taylor Street	37.4114, -79.1549
Lynchburg	Water Storage Facility	Ground Storage Tank, 4,500,000 Gallon	525 Taylor Street	37.4107, -79.1548
Lynchburg	Water Storage Facility	Reservoir 10,500,000 Gallon	525 Taylor Street	37.4113, -79.1542

4.18.4 Probability of Future Occurrences

Based on the frequency of historical incidents of pipeline and ground transportation hazmat release in the CVPDC area, hazmat release hazard is highly likely to occur, meaning that an event is probable within the next year.

4.18.5 References

- Ale Rohr. *CSX fined over Lynchburg train derailment, oil spill*. www.newsadvance.com. March 30, 2015. https://www.newsadvance.com/news/local/csx-fined-over-lynchburg-train-derailment-oil-spill/article_eb126518-d708-11e4-b163-17911f8b40aa.html. (Accessed on June 18, 2019)
- FEMA. *Fact Sheet - Hazardous Materials*. June 2007. https://www.fema.gov/media-library-data/20130726-1622-20490-9118/hazardousmaterialsfactsheet_final.pdf
- Local Emergency Planning Committee of Lynchburg, Virginia. *Lynchburg Hazardous Materials Commodity Flow Study*. August 2017. http://www.lynchburgva.gov/sites/default/files/COLFILES/Emergency-Services/Documents/Lynchburg%20HMCFS%20Report-Final%20September%202017.pdf
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