

APPENDIX III – ENVIRONMENTAL BENEFITS & BURDENS ANALYSIS

STATUTORY BASIS

The Vermont Environmental Justice Law (Act 154), passed in 2022, defines environmental justice and requires state agencies to implement environmental justice policies. 24 V.S.A § 4348 and 24 V.S.A. §4345a requires the regional planning commissions to assess the distribution of environmental benefits and burdens as defined under the Environmental Justice Law (V.S.A. Title 3 Chapter 72). The law directs particular focus on mitigating disproportionate impacts on environmental justice focus populations.

Key Definitions Under State Law

Environmental Benefits: The assets and services that enhance the capability of communities and individuals to function and flourish in society.

Environmental Burdens: Any significant impact to clean air, water, and land, including any destruction, damage, or impairment of natural resources resulting from intentional or reasonably foreseeable causes.

Environmental Justice Focus Populations: Any Census Block Group in which:

1. the annual median household income is not more than 80 percent of the State median household income;
2. Persons of Color and Indigenous Peoples comprise at least six percent or more of the population; or
3. at least one percent or more of households have limited English proficiency

DATA ANALYSIS

Initial Assumptions and Adjustments

NRPC developed an analysis of the impact of environmental benefits and burdens using the following assumptions.

Impact of Regional Plan

NRPC's regional future map generally aligns with either existing local conditions or local plans for development. Additionally, NRPC's plan has a more limited role in directing development than municipal development regulations, as its regulatory role is limited to projects reviewed under Act 250, Section 248, and Section 248a. As a result of these factors, NRPC believes it is unlikely that the Regional Future Land Use map will create a new environmental burden where none currently exist. For instance, all areas mapped as Enterprise on the Regional Future Land Use Map have existing industrial development and are locally planned for industrial uses. Therefore, NRPC's analysis focuses on identifying existing impacts and ensuring that the plan does not worsen these impacts and mitigates them to the extent feasible.

Environmental Benefits and Burdens

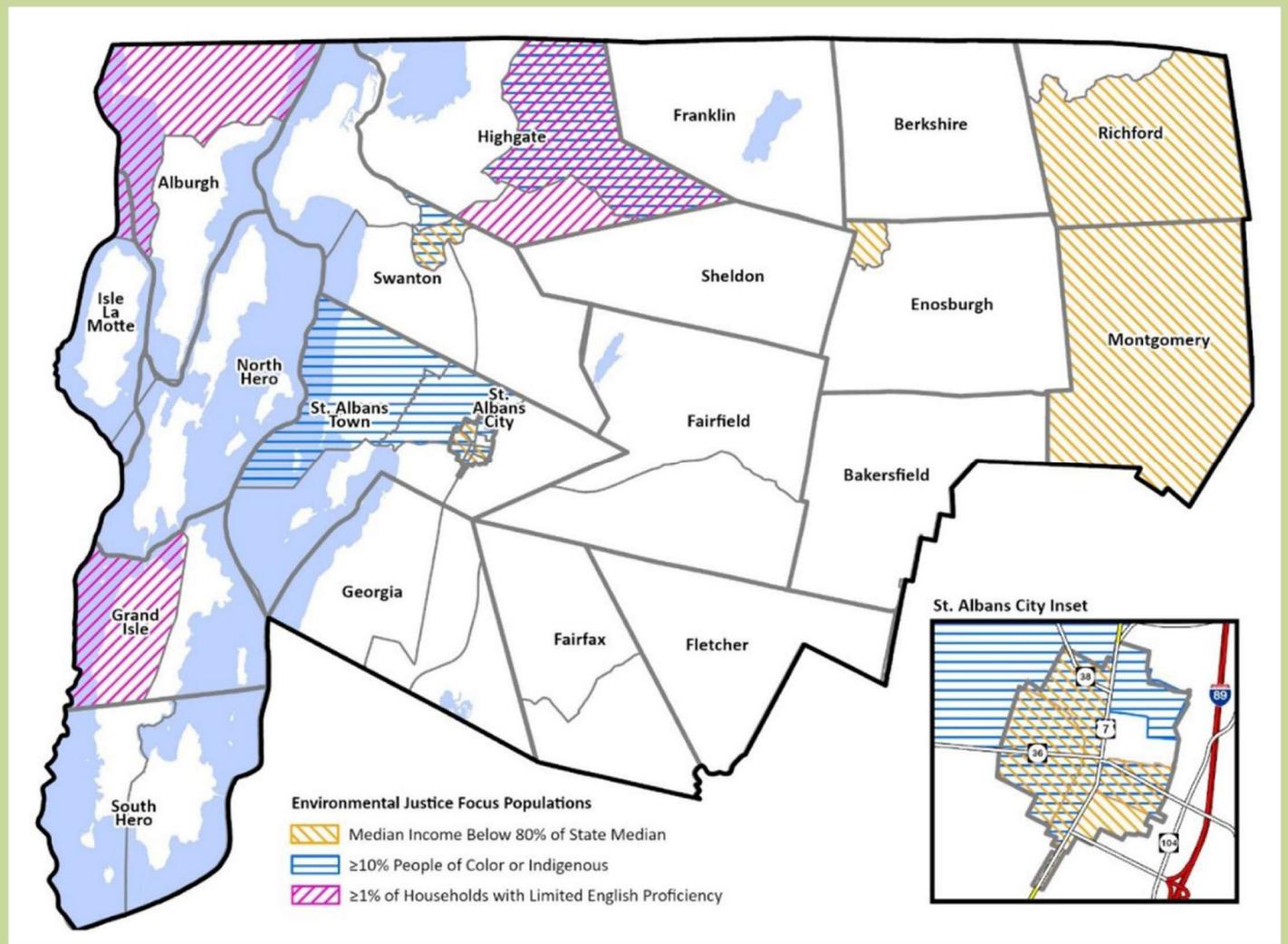
Vermont Statute define 36 examples of environmental benefits or burdens (24 V.S.A. §4345a). NRPC grouped similar benefits and burdens into 19 that could be impacted by the Regional Future Land Use map, which are described in Table 2.

Overview of Analysis Process

Mapping

NRPC mapped the environmental focus group populations as defined in 3 V.S.A. § 6002. Using the definition of environmental justice focus populations found in 3 V.S.A §6002 resulted in all but 3 Census Block groups in the region being considered focus populations due to more than 6% of residents being Persons of Color or Indigenous People. To better identify disproportionate impacts, NRPC adjusted this definition to identify areas where more than 10% of residents are Persons of Color or Indigenous People.

MAP 1: Environmental Justice Focus Populations



SOURCE: U.S. Census

NRPC consolidated complementary environmental benefits and burdens into a single measure (e.g. access and limits to nutritious food). NRPC then identified data available for as many of the environmental benefits and burdens as possible. There was no data available for 9 measures, therefore they could not be mapped.

Table 2 below summarizes the results of this analysis. Based on available data, 6 environmental benefits and burdens disproportionately impact environmental justice focus populations in the Northwest Region: access to healthy air/air pollution, access to green spaces/limited access to green spaces, climate change impacts, increased flooding or stormwater flows, erosion risk, and water pollution.

Review of Regional Policies

NRPC reviewed its goals and policies in the 6 areas identified above and made changes necessary to ensure that the Plan addresses and mitigates disproportionate environmental burdens. (Table 2)

Limitations of Analysis

The identification of environmental justice focus populations relies on U.S. Census and U.S. Census American Community Survey data which can be unreliable at the Census Block Group level. Data for many of the environmental benefits and burdens may also not be representative of all of the potential need. For example, a Census Block Group may have access to a public bus, but that bus may not have all routes or hours needed by residents to access employment and basic services.

Finally, NRPC recognizes that this framework represents only one way to address equity. There are likely other environmental benefits or burdens which disproportionately impact historically marginalized residents or communities in the region. The Regional Plan Introduction includes a more robust discussion of equity.

TABLE 2: Environmental Benefits & Burdens Analysis - Part 1 of 4

	Data Source	Threshold for Environmental Benefit/Burden	Burden Direction	Regional Level	EJ Focus Population Level	Disproportionate Benefit/Burden	Policies	How the Regional Plan Mitigates Disproportionate Benefit/Burden
Access to Healthy Air/Air Pollution	EPA EJ Screen	% of population with >80th percentile PM2.5 concentration in their census tract	Higher	12%	29%	Yes	Economic Region-Energy, Goal 7, Policy F; Social Region-Community Health, Goal 1, Policy H; Physical Region-Natural and Cultural Resources, Goal 1 & Policies A-B	Regional plan policies address protecting clean air from negative impacts from development. Community health goals and policies specifically address limiting impacts of emissions to historically disadvantaged communities.
Access to Green Spaces/Limited Access to Green Spaces	VT Outdoor Recreation Sites Inventory	Number of public recreational sites per 1,000 population	Lower	2.93	2.51	No	Social Region-Infrastructure: Education, Libraries & Recreation Facilities, Goal 3 & Policies A-E; Social Region-Infrastructure: Education, Libraries & Recreation Facilities, Goal 3, Policy A; Social Region-Community Health, Goal 1 Policies B-C; Social Region-Community Health, Goal 1, Policy I	No disproportionate benefit or burden in the region.
	NRPC Trails Data	Miles of trails per 1,000 population	Lower	2.37	2.79	No		No disproportionate benefit or burden in the region.
	VT Conserved Lands Database	% of land area publicly conserved	Lower	3.7%	1.7%	Yes		Regional Plan policies specifically address access to recreational lands for all residents, including specifically addressing financial barriers and equity.

TABLE 2: Environmental Benefits & Burdens Analysis - Part 2 of 4

	Data Source	Threshold for Environmental Benefit/Burden	Burden Direction	Regional Level	EJ Focus Population Level	Disproportionate Benefit/Burden	Policies	How the Regional Plan Mitigates Disproportionate Benefit/Burden
Transportation Access	GMTA Transit Data	% of population with transit stop in municipality	Lower	69%	88%	No	Economic Region- Energy, Goal 4 Policies A-C, E; H, Economic Region-Energy, Goal 5, Policy A, Social Region-Housing, Goal 2, Physical Region-Transportation, Goal 1 & Policy F, Physical Region-Transportation, Goal 1, Policies A-F, Physical Region-Transportation, Goal 2, Policy C, Physical Region-Transportation, Goal 3 & Policy B	No disproportionate benefit or burden in the region.
	NRPC Sidewalk Data	Feet of sidewalk per person	Lower	0.0	0.0	No		No disproportionate benefit or burden in the region.
Healthy Ecosystems/ Damage to Forests	VT Land Cover Database	% change in forest land cover 2016-2021	Lower	-0.11%	-0.05%	No	Economic Region-Energy, Goal 7, Policy F, Social Region-Housing, Goal 2, Policy B, Social Region-Housing, Goal 3 & Policy C, Physical Region-Transportation, Goal 3, Policy A, Physical Region-Natural and Cultural Resources, Goal 1, Policy E & G, Physical Region-Land Use, Goal 1, Policy C-D, Physical Region-Land Use, Goal 2 & Policies A-B, E, G	No disproportionate benefit or burden in the region.
Access to Health Care	NRPC Healthcare Data	% of population with federally qualified healthcare center in municipality	Lower	49%	76%	No	Social Region- Community Health, Goal 3 & Policy A	No disproportionate benefit or burden in the region.
Climate Change Impacts	Expected Building Loss Rate - Climate and Economic Justice Screening Tool	% of population that's in an area >75th percentile nationwide for building loss	Higher	18%	25%	Yes	Economic Region-Economic Development, Goal 2, Policy D, Physical Region-Transportation, Goal 2, Policies E-F, H, Physical Region-Disaster Resilience, Goal 1 & Policies A, G; Physical Region-Disaster Resilience, Goal 3 & Policy C; Physical Region-Infrastructure: Water, Wastewater & Solid Waste, Goal 2, Policy C	The Regional Plan recognizes the need to focus disaster resilience efforts on those most vulnerable under Goal 1 and its associated policies, including frontline underserved communities. Goals and policies allow for development in flood hazard areas in growth areas only if that development does not make flooding worse.
Increased Flooding or Stormwater Flows	FEMA 100-year Floodplain, UVM LIDAR 500-year Floodplain	% increase in floodplain land acres from 100-year to 500-year	Higher	21%	31%	Yes	Physical Region-Transportation, Goal 2, Policy F; Physical Region-Natural and Cultural Resources, Goal 1, Policy D; Physical Region-Natural and Cultural Resources, Goal 3, Policy B; Physical Region-Disaster Resilience, Goal 1, Policy D-E; Physical Region-Disaster Resilience, Goal 2 & Policies A-E, Physical Region- Disaster Resilience, Goal 3, Policy A-B & D-G, Physical Region-Infrastructure: Water, Wastewater & Solid Waste, Goal 2 & Policies C-F	
Erosion Risk	DEC River Corridors	% of land acreage in river corridors	Higher	3.53%	3.46%	No		No disproportionate benefit or burden in the region.
	USGS Slope Data	Acres of >15% slope per total land acres	Higher	27%	35%	Yes	Physical Region-Disaster Resilience, Goal 1, Policy E; Physical Region-Disaster Resilience, Goal 2, Policy C-E, G	The Regional Plan requires that all new development on steep slopes mitigates potential erosion risks.

TABLE 2: Environmental Benefits & Burdens Analysis - Part 3 of 4

	Data Source	Threshold for Environmental Benefit/Burden	Burden Direction	Regional Level	EJ Focus Population Level	Disproportionate Benefit/Burden	Policies	How the Regional Plan Mitigates Disproportionate Benefit/Burden
Inadequate Remediation of Pollution	VT Environmental Research Tool (ANR)	Active brownfield acres per 1000 land acres	Higher	0.427	0.438	No	Physical Region-Infrastructure: Water, Wastewater & Solid Waste, Goal 1 & Policy A-B	No disproportionate benefit or burden in the region.
Water Pollution	303(d) map in Tactical Basin Plans	Miles of impaired streams/rivers per 1000 land acres	Higher	1.52	2.42	Yes	Physical Region-Natural and Cultural Resources, Goal 3, Policy A-B; Physical Region-Disaster Resilience, Goal 3, Policy E; Physical Region-Infrastructure: Water, Wastewater & Solid Waste, Goal 1 & Policies A-C	The Regional Plan includes a map of impaired waters and a detailed table of factors leading to water quality impairment. Goals 3 of the Natural and Cultural Resource chapter addresses maintaining and improving quality of surface waters, including ensuring mitigation of the impacts of new development.
	303(d) map in Tactical Basin Plans	% of land acreage in impaired watersheds	Higher	30%	36%	No		No disproportionate benefit or burden in the region.
	303(d) map in Tactical Basin Plans	% of water acreage in impaired lakes/ponds	Higher	85%	88%	No		No disproportionate benefit or burden in the region.
Damage to Inland Waterways and Waterbodies and Wetlands	VT Land Cover Database	% change in impervious land cover 2016-2021	Higher	1.4%	1.5%	No	Physical Region-Natural and Cultural Resources, Goal 1; Physical Region-Natural and Cultural Resources, Goal 3, Policies C-E; Physical Region- Disaster Resilience, Goal 3, Policy B	No disproportionate benefit or burden in the region.
	VT Land Cover Database	% change in wetland land cover 2016-2021	Lower	-0.08%	-0.08%	No		No disproportionate benefit or burden in the region.
Healthy Homes/ Home and Building Health Hazards	Not mapped						Economic Region-Economic Development, Goal 4, Policy C; Social Region- Housing, Goal 1, Policies A-M; Social Region- Housing, Goal 2 & Policy C; Social Region- Housing, Goal 3, Policy A, D	The plan has comprehensive housing policies, including those that address improvements to substandard housing. The plan recognizes disproportionate rates of housing insecurity to BIPOC households, based on our 2023 Housing Needs Assessment.
Access to Clean Water	Not mapped						Physical Region-Natural and Cultural Resources, Goal 3 & Policy A; Physical Region-Infrastructure: Water, Wastewater & Solid Waste, Goal 1 & Policy A-C	The Regional Plan includes policies supporting protection of groundwater and improvements to public water systems to ensure clean water.
Affordable & Clean Renewable Energy Sources	Not mapped						Economic Region-Energy, Goal 1 & Policies A-E; Economic Region- Energy, Goal 2, Policy A & D; Economic Region- Energy Goal 6, Policy A-B	The energy chapter of the Regional Plan and the Regional Enhanced Energy Plan address renewable energy sources and affordability of the energy transition. The policies include ensuring environmental justice during the siting of energy generation projects.

TABLE 2: Environmental Benefits & Burdens Analysis - Part 4 of 4

	Data Source	Threshold for Environmental Benefit/Burden	Burden Direction	Regional Level	EJ Focus Population Level	Disproportionate Benefit/Burden	Policies	How the Regional Plan Mitigates Disproportionate Benefit/Burden
Access/Limits to Nutritious Food	Not mapped						Economic Region-Economic Development, Goal 2; Social Region-Community Health, Goal 1 & Policies D, G; Physical Region-Land Use, Goal 2, Policy B-D; Physical Region-Land Use, Goal 2 & Policies B-H	The Regional Plan includes a substantial number of policies related to protection of agriculture, as well as health policies related to food access.
Access to Healthy Buildings	Not mapped						Economic Region-Energy, Goal 3, Policy E; Social Region- Housing, Goal 1, Policy B & H; Physical Region-Disaster Resilience, Goal 2 & Policies A-E	New future land use areas planned for growth will qualify for incentives to improve building quality and accessibility through the Vermont Department of Housing and Community Development (DHCD).
Excessive Noise	Not mapped						Social Region-Community Health, Goal 1, Policy H; Physical Region-Natural and Cultural Resources, Goal 1, Policy C	The Regional Plan includes a policy specifically addressing the need to avoid disproportionate land use noise impacts.
Fulfilling & Dignified Jobs	Not mapped						Economic Region-Economic Development, Goal 1, Policy b; Economic Region-Economic Development Goal, 3, Policies A-C	The regional plan includes several policies that target underserved communities and workforce training for all people in the community.
Access/Lack of Access to Cultural Resources	Not mapped						Physical Region-Natural and Cultural Resources, Goal 2, Policies A-E	The regional plan includes several policies aiming to limit impacts to cultural sites to ensure they can continue to be accessed.