



A HEALTH POLICY CHECKLIST FOR PLANNERS

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INTRODUCTION

There is a growing body of evidence to support the connection between health and planning-related regulatory decisions. This checklist identifies the common health issues that can be affected by regulatory decisions and creates a framework for decision makers to use when considering an alteration to existing regulations or adopting new regulations. There are two levels of planning that occur in every town: policy planning decisions and development applications. This checklist is designed to accommodate the different levels of planning by planning departments, municipal boards and committees and potential project leaders.

Policy planning generally refers to the work from municipal boards, ordinances, by-laws and overarching regulations from community decision makers. Development applications refer to the decisions made on site plans, physical infrastructure and code enforcement and zoning requirements. Both planning aspects directly affect health in different ways. Policy planning has a broad reach on health and the layout of a community, on the other hand, development applications are the actual site plans, materials and enforceable components of planning.

As planners and policy-makers have increasingly realized the connections between planning and health, they have worked with public health professionals to adopt a “Health in All Policies’ (HiAP) approach to their decision-making processes to identify and develop tools and strategies for integrating health information and expertise into planning-related decision-making processes. An increasingly common HiAP tool being used by planners is health impact assessment (HIA). HIA’s can provide a structured process for engaging stakeholders to consider how a decision can impact health, but can be time and resource intensive and are not suitable for every decision. Other increasingly common HiAP tools and strategies being used by planners include having public health professionals serve on advisory committees, preparing health-focused background reports and white papers, including public health goals in plans, and developing review checklists for proposed plans and policies. This document is an example of the latter HiAP tool and is meant to help ensure that key planning related health issues are considered as planning decisions are being made.

HEALTH ISSUES AND PLANNING DECISIONS

Health and health issues can often be impacted both positively and negatively by common planning-related regulatory decisions be they in the formulation of new regulatory policies or in review of new land use development projects under the local regulation.

The most common health issues, or determinants, affected by planning and regulatory decision include:

- Social Cohesion
- Exposure to Air Pollutants
- Water Quality
- Crime Safety
- Traffic Safety

- Physical Activity
- Housing Choices

Community planning policies and development applications can address health in various ways such as the inclusion of pocket parks in subdivisions, complete streets infrastructure and low impact development design. Each community must determine which health issues have the highest priority based on existing conditions and local vulnerable populations.

VULNERABLE POPULATIONS

Every community has populations that are vulnerable based on their age, race/ethnicity, functional ability and income level. Vulnerable populations are people of all ages and abilities, including youth, low income individuals, older adults, racial and ethnic minorities, veterans and persons with disabilities. Vulnerable groups are generally more likely to be at higher risk for poor health because of a variety of reasons such as lack of access to amenities, safety from vehicular crashes and crime, housing quality and affordability, and exposure to pollution, which can often be alleviated through planning decisions. For example, access to amenities can be a concerning issue for populations that depend upon alternative forms of transportation due to lack of access to a vehicle or the ability to drive placing quality food, necessary medical attention, schools and opportunities for safe play out of reach. Such planning-decisions that can impact the lives of vulnerable populations are specified in the corresponding sections.

HOW TO USE THE CHECKLIST

Community design, economic development, housing availability, transportation choices, and natural resources can influence residents' access to amenities and opportunities. Planners and communities should identify areas of limited access and pockets of vulnerable populations when proposing and implementing planning policies and reviewing development proposals. Decision makers ultimately determine the elements in neighborhood design that influence potential opportunities for residents residing in the area.

As planners, there are 10 major areas where positive health impacts can be achieved either through the policy framework or development applications. These include:

- Land Use and Community Design
- Economic Connections
- Housing Development and Redevelopment
- Vehicular Safety
- Transit
- Pedestrian Infrastructure
- Bicycle Infrastructure
- Environment
- Low Impact Development
- Recreation and Open Space

The following checklists can be pulled-out and easily used by planners working on policy and application decisions for each of these ten planning areas. The narrative and checklist for each identifies specific measures to determine whether the optimum health benefits are being achieved or promoted, or whether there are areas where draft land use regulations and ordinances might be strengthened. These performance measures might also be used by a board and a plan applicant to determine the potential health impacts of a development under review. The checklists do not include specific building level improvements that would be part of the building permit approval process nor are they intended to be an exhaustive list.

There are two additional resources recommended for New Hampshire communities looking to learn more about the health impacts of planning policies and decisions:

- *2012 Livable Walkable Communities Toolkit*, by Southern NH Planning Commission, http://www.snhpc.org/index.php?page=land_use#LiveWalk
- *Policy Analysis: Helping to Achieve Healthier Communities*, Upper Valley Lake Sunapee RPC, http://healnh.org/images/pdffiles/ActiveTransportation/UVLSRPC_Municipal_Policy_Audit_Tool.pdf

LAND USE AND COMMUNITY DESIGN CHECKLIST

Land use planning and community and neighborhood design elements can significantly impact access to healthy choices as well as create social cohesion and minimize crime (Cutts, et. al, 2009). Innovative development design can entice developers to increase density resulting in reduced infrastructure needs and generating more cohesive neighborhoods, reduced environmental impacts, increased protected green space, and potentially reduced crime and increased personal safety (Rifaat, et. al, 2009).

Direct neighborhood design impacts can include:

- Increased walking and biking for all neighborhood residents
 - Increased options for alternative modes of transportation through walking, biking and ride sharing
 - Increased sense of security
 - Increased sense of well-being and contentment
 - Decreased stress and depression
 - Improved building design quality
 - Improved neighborhood design aesthetic
- (Tacoma-Pierce County Health Department, 2010)

A growing body of evidence exists to support that design elements in the built environment may affect opportunities for social interaction and overall health of the individuals who reside in the community (De Jesus, et.al, 2010; McNeill, et. al, 2006). Social cohesion can be described as social support or social networks. Social cohesion can also be recognized as, “the degree to which an individual is interconnected and embedded with in a community-is vital to an individual’s health and well-being...”(McNeill et al., 2006). Neighborhood design that creates opportunities for social interaction, such as front porches on homes set close to the street in a compact walkable neighborhood, can help to

create such social networks. At the community scale, the town green at the center of a community provides a gathering place for community events creating an opportunity for interaction for all age groups and income levels. Additionally schools, community centers and religious institutions located near to where people live provide another source of developing social cohesion.

Older adults have seen a rise in health concerns related to the built environment. Older adults and low-income citizens are less likely to own cars or drive. Those residing in rural communities and small towns with few transportation options have limited access to amenities and jobs. As a result, in the absence of transit options, these populations may be limited to choosing between walk or bike along high-speed roadways with few pedestrian accommodations or stay home. By limiting mobility to automobiles alone, these citizens risk isolation from community and the economy. Social support is increased for seniors in areas with sidewalks, paths and transit choices, either fixed route or demand-response service. As the ability to drive deteriorates, proximity to amenities becomes vital to maintain social interactions and decrease health issues such as obesity (Berke, Koepsell, Moudon, Hoskins, & Larson, 2007).

As architecture and technology have evolved, neighborhood design elements are a viable solution to deterring crime. "Community policing through environmental design (CPTED)," has gained support as effects of the built environment on health become more thoroughly researched. CPTED provides alternatives to typical crime situations through design alterations. Examples include neighborhoods with windows directly facing the sidewalk or street that offer a certain amount of safety by creating, "eyes on the street." The concept of "eyes on the street" deters crime and encourages neighbor social interaction (Fleissner & Heinzelmann, 1996).

Neighborhoods where residents perceive the area to be unsafe have demonstrated lower physical activity rates in children which can forward into higher obesity and type 2 diabetes rates (Franzini et al., 2009). Similar findings are suggested for park safety. Park safety has been shown to disproportionately decrease in lower income neighborhoods due to lack of maintenance and the perception of increased crime prospects (McNeill et al., 2006). It is perceived that mixed housing types that include lower income populations can alleviate poverty and the deterioration of park infrastructure associated with illicit drug use and increased crime opportunities (McNeill et al., 2006).

Residential density, land use mix and street connectivity is positively correlated with reduced crime rates (Christian et al., 2013). Conversely, loop and lollipop streets with minimal lighting can provide opportunities for illegal activity. Adequate lighting in and around neighborhood areas can hypothetically escalates a resident's perception of neighborhood safety.

Appropriate street lighting can deter nefarious activities. Maintenance of properties, landscaping and vegetation decrease dark corners and secluded areas. Reducing unkempt areas through vegetation maintenance and infrastructure upkeep can increase perceived neighborhood safety (Tacoma-Pierce County Health Dept, 2010).

YES	NO	N/A	FEATURE	HEALTHY INFRASTRUCTURE RECOMMENDATION
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Architecture	Architectural character compatible with the surrounding neighborhood and human scaled
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Neighborhood Connections	New developments connected to existing developments through pedestrian linkages and roadways
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Density Bonuses	Development densities are increased in exchange for preserved open space and enhanced social cohesion
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Eyes on the Street	Front porches and window provided in homes set close to the street in a compact walkable neighborhood
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Gathering Places	Schools, community centers and religious institutions are located near residential communities to provide local gathering places
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lighting	Street, site, and exterior lighting is adequate and even to minimize glare and/or blind spots
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mixed Income Development	Mix of housing options affordable to a range of incomes, ages and abilities within a single zoning district
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Neighborhood Green	Community centers or neighborhood greens are located at the heart of new development to maximize opportunities for community gatherings and events
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Regular Maintenance and Landscaping	Assurances for ongoing property maintenance and landscaping upkeep are provide
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Street Connectivity	Streets are interconnected to minimize the number of "blind" dead end streets

ECONOMIC CONNECTIONS CHECKLIST

Recently, studies have demonstrated the connection between streets that are accessible to all users and the inclusion of bike paths and trails increase local economies through tourism, local retail and safe places for individuals to recreate (Garrett-Peltier, 2011). Communities with congregating areas such as downtowns, parks and shopping areas not only increase the opportunities for social connections and create a sense of place and safety, but increase employment opportunities within the community. Communities where transportation networks divide sections of town or area not accessible for all users types decrease a sense of social connectedness the feeling of safety (Franzini et al., 2009). Alternative street designs such as complete streets, provide for maximized use of commercial space accessible for all users (Smart Growth America, 2014).

Similarly it is essential to have access to healthy food choices and supportive services such as medical care, pharmacies, and other health-care related services. Zoning out commercial activities can often lead to unintended consequences such as food deserts and a shortage of local health care providers. For those populations unable to drive or afford such resources, health implications may be further compounded without access to care.

Access to healthy food considers whether high quality foods are both available and affordable through a variety of means, be they grocery or convenience stores. Vulnerable populations are often at risk for not having access to high quality foods. Low income individuals may lack the resources to purchase healthy foods or drive to larger grocery stores and individuals with disabilities, seniors and children may have different dietary requirements that are not being met. A community devoid of access to healthy

foods is referred to as food deserts. Food deserts are common in areas of high crime, low income housing area, and rural areas.

Farmers markets and other vendor events are great ways to increase access to local foods and create a sense of community. Additionally, purchasing local foods increasing the nutritional value typically lost in shipping and reduces carbon emissions from the lack of travel. Buying foods locally increases local economies and preserves agricultural resources in the community. Community gardens provide not only greater access to local fresh foods but provide another opportunity to build social cohesion.

YES	NO	N/A	FEATURE	HEALTHY INFRASTRUCTURE RECOMMENDATION
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Agriculture	Food production, including home based, community food production and traditional and urban agriculture
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community Gardens	Community garden space available in all areas of town and included in new residential developments
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Downtowns And Shopping Centers	Downtowns, commercial and shopping centers provide for walkable access to multiple shops
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Grocery Stores/Commercial Zoning	Grocery stores included within commercial zoning districts and near residential areas
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Infill Development	Infill development employed where feasible to create new construction adjacent to and/or within existing neighborhoods
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Medical Facilities	Medical facilities included within commercial zoning districts and near residential areas
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mixed Use Development	Mixed use development and land use densities that support short distances between homes, workplaces, schools and recreation to maximize opportunity for people to bike and walk and increase commercial traffic
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Street Furniture	Sidewalk and park upgrades include street furniture appropriate for all users and community character

HOUSING DEVELOPMENT AND REDEVELOPMENT CHECKLIST

“Families who can only find affordable housing in very high-poverty areas may be prone to greater psychological distress and exposure to violent or traumatic events”(Ito, Kate, Sportiche, Noemie, Keppard, Barry, & James, Peter, 2013). Once housing stability is attained, stress reduction can occur. Historically, high poverty areas have a decreased housing stock quality, potentially exposing already vulnerable populations to environmental toxins such as lead, mold, and vermin. Furthermore, poor indoor air quality due to a deteriorating building infrastructure increases the likelihood of asthma and other respiratory illness (Ito, et al, 2013; Jacobs, et. al, 2007).

Affordable, quality housing has been linked to a reduced risk to illness such as obesity, diabetes, anxiety and depression (Stronegger, et. al, 2010). Long term homelessness can manifest physical and mental health issues such as long term depression, anxiety and an exacerbation of severe mental issues due to limited health care access. Access to health care and support services is especially vital for vulnerable populations such as children, seniors and veterans and is deterred by eviction and foreclosure, frequent moves and overcrowding (Henwood, et. al, 2013; Ito, et. al, 2013). For example, in 2009, NH Homeless

Management Information System identified 428 veterans who were homeless with estimates ranging as high as 600. New Hampshire currently has 74 beds and 40 apartments designated as transitional housing (Veterans Homeless Committee, 2009).

Seniors can be particularly affected as the inability to maintain a large residence becomes a burden. Security, family and legacy are valued elements of aging in place (Guillory & Moschis, 2008). As health deteriorates, housing developments close to support services, amenities and health care facilities can increase social cohesion and well-being. Cottage and accessory housing units offer a variety of housing choices and reduce the burden of owning a home and associated costs (Luis, M., 2000).

Children and lower income populations can benefit greatly from higher quality housing and neighborhood amenities. Affordable, high quality and energy efficient homes relieve parental stress and increase disposable income providing opportunities to purchase higher quality foods and access necessary health care (Tacoma-Pierce County Health Department, 2010). Communities where more than 27% of the housing stock was constructed prior to 1950 are considered to be at high risk of increased prevalence of elevated blood lead levels within children. During 2012, 0.5% of all children screened for lead poisoning in had elevated blood lead levels (NH DHHS, 2012).

YES	NO	N/A	FEATURE	HEALTHY INFRASTRUCTURE RECOMMENDATION
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Accessory Dwelling Units	Accessory dwelling units are allowed and utilized to provide rental properties as appropriate
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Affordable Owner Occupied Housing	Housing choices are available for homeowners at or below 80% of the median household income
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Affordable Rental Housing	Housing choices are available for renters at or below 60% of the median household income
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Age Restricted Senior Housing	Supply of senior only housing is balanced so to help seniors "age in place" while still providing opportunities for families
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cluster Development	Cluster residential development to minimize infrastructure development costs and protect green space for recreation opportunities
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cottage Housing	Alternative housing designs, like cottage housing, are utilized where appropriate to enhance social cohesion and preserve open space
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lead Paint Remediation	Redevelopment remedies lead paint and other environmental health hazards within older existing housing stock

VEHICULAR SAFETY CHECKLIST

Transportation networks and street design vary by community but all populations in every community require safe streets and transportation choices. In the United States, over 30,000 people die every year from vehicle crashes and are the leading killer of youth, teens and young adults age 5-34 (Center for Disease Control, 2011). In New Hampshire, the cost of crash related deaths are \$143 million per year, \$2 million in medical costs and \$141 million in work loss costs. New Hampshire rates fourth for crash related death costs in New England, leading Vermont and Rhode Island by approximately double (Center for Disease Control, 2011). While the numbers of bicyclists and pedestrians killed has been in decline for the past decade, experts attribute this to a decline in the total number of people bicycling and walking.

The health benefits associated with automobiles are limited but can reduce the risk of exposure to air pollutants for those inside the vehicle. Additionally, for individuals who are at risk for heat related issues, traveling by vehicle on a hot day can be ideal. Unfortunately, vehicles are associated with a number of negative health issues, for example, decrease opportunities for physical activity and recreation, increase traffic accidents, reduce water quality, decrease in air quality, increase in obesity related diseases and increase in impervious surfaces (Baum, et. al, 2009; Smart Growth America, 2014). Slower streets and appropriate signage can decrease traffic accidents and be safer for all users (Smart Growth America).

Vehicular speed at the time of a crash has a direct impact on fatalities. A pedestrian hit by a car travelling 20 mph has a 5 percent chance of being killed when compared to an 85 percent chance of death at 40 mph. Injury rates increased 3 to 5 times for every 1,000 vehicles that are added to the road (Tacoma-Pierce County Health Department, 2010). Street connections are associated with decreased risk of collisions and automobile accidents when compared to, "loop and lollipop" road configurations (Tacoma-Pierce County Health Department, 2010).

There are many types of traffic calming devices that can be used to decrease vehicle speeds across a transportation corridor. Traffic calming has a positive correlation with decreasing traffic accidents due to lower speeds and improve traffic flow. The improved traffic flow can decrease idle times and emissions resulting in positive air quality changes (Smart Growth America). Surface treatments may cause an issue for an individual with disabilities to navigate textured road areas thus should be used appropriately. Traffic calming devices that include pedestrian infrastructure can provide an opportunity to navigate an intersection or cross a street which may have been inaccessible beforehand such as a rotary that includes crosswalks and medians.

YES	NO	N/A	FEATURE	HEALTHY INFRASTRUCTURE RECOMMENDATION
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Narrow Vehicle Lanes	Reduced lane widths are used to reduce traffic speeds where feasible
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Raised Medians	Raised medians are used for areas prone to higher speeds
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Refuge Islands	High traffic roads or large pedestrian areas use refuge islands as needed and are accessible to all users
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rotary Circles	High congestion areas use traffic circles or rotaries with built in pedestrian infrastructure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Surface Treatments	High pedestrian areas and environmentally sensitive areas use appropriate surface treatments such as paving blocks, textured asphalt and concrete to reduce traffic speeds and not inhibit access for all users
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Traffic Bumps	Areas prone to speeding, high pedestrian areas and schools include traffic bumps or speed tables to reduce traffic speed

TRANSIT CHECKLIST

Communities designed around vehicles can be limiting to vulnerable populations who are unable to drive. Commercial and residential development has the potential to generate new trips using all forms of transportation and consequently increasing the number of traffic related injuries (Ito, Kate et al., 2013). Alternative modes of transportation reduce emissions, improving air quality, and increase physical activity, reducing risk of obesity and associated diseases (Bedimo-Rung, et. al, 2005). There are opportunities to change existing transportation networks to meet the needs of all users.

Public transit is an alternative form of transportation for all users if vehicles are equipped to service individuals with bikes and wheelchairs. The use of public transportation can increase the quality of air compared to the use of a regular vehicle (Ito, Kate et al., 2013). Fixed route transit service depends upon ridership and therefore is typically limited to more urban communities. Rural communities often have available demand-response transit service that provides door-to-door service upon request or reservation. Transit timing is important and transit priority signaling offers strategies to prioritize public transit over other automobiles. Transit oriented lanes and signaling can decrease transit times for riders who rely on public transit to access amenities and for commuting.

YES	NO	N/A	FEATURE	HEALTHY INFRASTRUCTURE RECOMMENDATION
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dedicated Transit Lanes	Major traffic routes and high density areas will use dedicated transit lanes to reduce congestion and maximize transit times
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transit Priority Signalization	Traffic signals favor transit vehicles and implement a green wave to improve traffic flow
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transit Service	Transit options through either fixed route or demand response service is available for all users where feasible
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transit Stop Facilities	Covered transit stop facilities and signage for users provided within new development adjacent to fixed route transit lines or as a community pick up point for demand response service

PEDESTRIAN INFRASTRUCTURE CHECKLIST

Sidewalks and other pedestrian infrastructure provide many health benefits and opportunities for all users. Health benefits of pedestrian infrastructure can include an increase in social cohesion, increase recreation and physical activity opportunities, increase safety from traffic and offer alternative modes of travel or vulnerable populations (Berke et al., 2007; Christian et al., 2013). The installation of pedestrian infrastructure however, can expose users to an increase in air pollutants when the infrastructure is sited directly next to the road (Bhatia & Rivard, 2008). Mitigation efforts can be taken to reduce the negative effects of increased impervious areas from paved pathways such as stormwater infiltration sites, porous pavement, smaller roadways and placing sidewalks or shared use paths away from high traffic areas as applicable (New Hampshire Estuaries Project, 2007).

Children use walking and cycling as “active travel” to access a specific destination like a friend’s house, school and parks. Active travel significantly increases chances for physical activity. According to Panter, et. al, 2008 children who live within walking or biking distance of school were five times more likely to use an active travel mode to school when parents felt the streets were safe and provided sidewalk infrastructure. Seniors and lower income populations use active travel to acquire amenities and participate in social opportunities. As the ability to drive deteriorates due to age or income, safe, reliable transportation or adequate infrastructure can determine access to local amenities and mental wellbeing (Cutts et al., 2009; Fuzhong Li, et. al, 2005; Saelens, et. al, 2003).

YES	NO	N/A	FEATURE	HEALTHY INFRASTRUCTURE RECOMMENDATION
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Accessible Curb Ramps	All sidewalks include accessible curb ramps particularly major municipal roads and intersections
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Bulb Out	Major intersections include bulb outs
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Crosswalks	Crosswalks are included in commercial, residential and school areas to connect sidewalks for all users
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Paved Shoulders	Rural roads or those lacking sidewalks include paved and striped shoulders for bicycles and pedestrians
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pedestrian and Traffic Signals	All intersections with vehicular traffic signals include pedestrian signaling
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sidewalks	Sidewalks that are accessible to all users are provided in new development and redevelopments

BICYCLE INFRASTRUCTURE CHECKLIST

Biking provides an alternative form of transportation for all age groups and users. Children and seniors who lack a vehicle can use biking as a form of commuting to access amenities, friends, schools and events (Romero, Vivian, 2010). Bicycle infrastructure provides recreation opportunities for families and all users types. Bicycle parking facilities are important to include for residents to store bikes while performing other tasks such as shopping, using a playground or eating out which can improve the local economy (Garrett-Peltier, 2011; Tilahun, et. al, 2007). One downside of bike lanes is the exposure to air pollutants especially in high traffic areas. Mitigation efforts to reduce exposure can include inserting a median or a buffer, vegetated or not, in between the auto lane and the bike lane (Bhatia & Rivard, 2008).

YES	NO	N/A	FEATURE	HEALTHY INFRASTRUCTURE RECOMMENDATION
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Bicycle Lanes	Commercial and large residential areas connected with bike lanes or paths
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Bicycle Racks	Bike racks are available in commercial and public areas including downtowns, parks, schools and shopping areas
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Planting Strips	New developments and redeveloped areas provide planting strips where appropriate to separate bicyclists and pedestrians from traffic
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shared Use Paths	Bicycle and pedestrian shared use paths are accessible to all users

ENVIRONMENT CHECKLIST

The protection of each community's natural resources and open spaces is important for maintaining water quality, reducing air pollution, increasing a sense of community and wellbeing and providing areas for recreation and relaxation. Green elements in transportation corridors are important deterrents of crashes and injuries, and contribute to a more comfortable and visually interesting street networks for all users. Low impact development elements and green features are important for restoring water infiltration areas, wildlife habitat and reduce the occurrence of respiratory related health issues.

Drainage and stormwater runoff issues are common on traditional streets and in developed areas. Optimal stormwater management looks beyond simply removing rainfall as quickly as possible, which risks negative environmental impacts associated with both stormwater quality and quantity, polluted runoff, sedimentation, and bank erosion. Instead it focuses on efforts to retain and treat, or eliminate, runoff at the source through cost-effective green infrastructure, improving water quality (Smart Growth America, 2014).

As the rain moves across the landscape it picks up and carries contaminants, which are finally deposited into lakes, rivers, wetlands, coastal waters, and underground sources of drinking water. When polluted stormwater is left untreated, it enters the water systems and can cause water quality impairments. Built environments store heat in addition to contaminants, therefore, stormwater moves over an impervious area storing heat and warming bodies of water when dispersed causing significant effects on wildlife and polluting drinking water sources (New Hampshire Department of Environmental Services, 2008b)

As the study of water quality and the built environment have evolved, stormwater and its effects on drinking water quality have emerged as a threat to public health. Impervious areas eliminate groundwater infiltration forcing water into storm drains, depriving residents downstream of clean, accessible ground water (New Hampshire Department of Environmental Services, 2008a, 2008b). Transportation poses a large threat to water quality in the form of stormwater runoff. Salts, deicers, car fluids and the like are deposited onto streets and sidewalks then transported during the next rain or snow event directly into storm drains and released into neighboring rivers, lakes and streams. The construction of new roads and impervious cover has expanded and the threat to water supplies has increased.

Air is a common resource shared by all. There are two different types of exposure to air pollutants, indoor and outdoor. Outdoor air pollutants occur from many sources such as transportation, industrial uses, natural causes and heating fuels. Additionally, indoor air pollutants exist from deterioration of building materials associated with an aged house, poor ventilation and indoor cleaners. Both types of exposures have health consequences.

Walking and bicycling for the shortest trips (less than 1 mile), rather than taking a car, could reduce CO₂ emissions, a major greenhouse gas (GHG) source, by 12 to 22 million tons per year in the United States. Replace cars with walking and biking for longer trips (1 to 3 miles), and the CO₂ savings add to 9 to 23 million tons annually in the United States. As infill development occurs, air quality can decrease due to traffic congestion and industrial pollutants. Busy roadways provide opportunities for commercial and residential development subsequently increasing potential exposure to vulnerable populations. Children and elderly populations living within 100-200 meters of a highway show poor lung function, asthma and cancers (Bhatia, R & Rivard, T, 2008). Air quality is linked with other diseases such as heart disease and atherosclerosis. Secondary effects of poor air quality include type 2 diabetes and obesity. Poor air quality limits outdoor activities obliging residents to remain indoors decreasing physical activity and social interaction (Giles et al., 2011).

Indoor building materials deteriorate overtime releasing harmful toxins hence creating poor environmental areas subjecting vulnerable populations to molds, fungi and vermin (Jacobs et al., 2007). “Indoor air pollution” can include the following: ozone, allergens, paints and other volatile organic compounds, cleaning products, tobacco smoke, soil gas intrusion (e.g. Radon) and bio-effluents (Jacobs et al., 2007). Such air quality contaminants are linked to adverse health impacts: asthma, radon poisoning, lead poisoning, systemic inflammation and oxidative stress (Giles et al., 2011; Jacobs et al., 2007). On average, United States citizens spend 90 percent of their time indoors where indoor pollutant levels can be worse than those outside (Jacobs et al., 2007). Extended time spent indoors expose residents to potentially harmful substances overtime.

In many areas of the country, households heat their homes with a combination of elements including oil, gas, electric, geothermal, solar and woodstoves. Wood is plentiful and a renewable resource which can decrease heating costs when compared to more expensive nonrenewable resources. Wood stoves are operated in the fall and winter while trees are in senescence. Deprived of leaf out from foliage, smoke and particulates accumulate in and around neighborhoods exacerbating health issues for vulnerable populations (Giles et al., 2011).

YES	NO	N/A	FEATURE	HEALTHY INFRASTRUCTURE RECOMMENDATION
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Planting and Landscaping Requirements	Planting strips and other landscaping used for stormwater collection and for aesthetic purposes
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Public Water And Sewer	Community water infrastructure services are extended to new developments where possible
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Stormwater Design	Design of roads and impervious surfaces is appropriate to manage stormwater

LOW IMPACT DEVELOPMENT CHECKLIST

Green building techniques and low impact development (LID) methods, multiply the opportunities for homeowners to collect and store rainwater, incorporate bio-retention cells and pervious or semi-pervious surfaces to increase ground water infiltration. Playgrounds, walking paths and sidewalks offer supplementary options for groundwater infiltration and landscaping techniques to reduce pollution, flooding and enhance neighborhood aesthetics. Children and others spending large quantities of time outside have higher risks of exposure to outdoor air pollutants, conversely, those spending large quantities of time inside have higher risk of exposure to indoor air pollutants. Green building techniques reduce indoor air pollutants by utilizing less toxic building and insulating materials.

Within the last decade, research has documented the propensity of lower income areas to occur near environmentally hazardous sites. Residential areas near industrial locations are more affordable to lower income populations due to their undesirability which exposes residents to harmful contaminants increasing potential health effects such as asthma and cancer. Nationally, New Hampshire has one of the highest rates of asthma. Current levels of asthma for Hillsborough County are 8.3 percent with children from low income household of \$20,000 or less are likely to have asthma than those from households with an income of over \$50,000 (Conley, A. & Daniels, D., 2011).

The process of green building incorporates environmental considerations into every phase of the building process. The impact to the environment is accounted for during the design, construction, and operation of a building. Other considerations include energy and water efficiency, lot development, resource efficient building design and materials, indoor environmental quality, maintenance and the building's overall impact on the environment. Green building techniques enhance healthy indoor air, durability/longevity of building materials, are cost effective, and provide exceptional energy performance through a high performance building enclosure, very high efficiency systems, design to maximize daylighting, and orientation for passive solar gain. Combined these investments can reduce the costs to the future home or building owner.

YES	NO	N/A	FEATURE	HEALTHY INFRASTRUCTURE RECOMMENDATION
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Alternative Parking Design	Innovative parking designs are encouraged to infiltrate stormwater, reduce salt use and reduce impervious surface through maximum parking requirements or shared lots
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Green Building	Innovative building design is employed to preserve open space, protect water quality and reduce exposure to air pollutants
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low Impact Development	Low impact development methods are used to curb stormwater runoff in residential and commercial areas
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Passive Solar Design	Site design to maximize passive solar and natural ventilation opportunities for new construction
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reduced Footprint	Increased building height with smaller footprint to minimize stormwater runoff and natural resource impacts while preserving open space

RECREATION AND OPEN SPACE CHECKLIST

Approximately 38 percent of adults in NH are classified as overweight and 25 percent are classified as obese. Recreation and access to outdoor space provide much needed exercise opportunities for New Hampshire's growing obese population. Diseases associated with obesity such as diabetes and stroke are reduced with daily physical activity. Sources: (Anderson, Ludmila, 2010; Berke, et al., 2007; Conley, A. & Daniels, D., 2011; McNeill, et al., 2006; NH Division of Parks and Recreation & NH OEP, 2013)

The built environment, or how we design our communities has a direct impact on the health and physical activity levels of residents based on the ability to access walkable areas, open space and recreation facilities. Walkability and physical activity levels are related to the degree in which the built environment is friendly to the presence of people living, shopping, visiting, enjoying or spending time in an area. A comprehensive study of walkability has found that people in walkable neighborhoods did about 35-45 more minutes of moderate intensity physical activity per week and were substantially less likely to be overweight or obese than similar people living in low-walkable neighborhood (Fisher & Fuzhong Li, 2004). Often however, many communities lack design and land use features to enable active living, placing priority on auto-centric policies. Community design that supports the co-location of essential services, healthy food choices, job opportunities and housing within proximity to one another enable residents to walk or bike more frequently.

Physical activity in childhood establishes health lifestyle choices and prevents childhood diseases such as obesity and Type 2 diabetes (Franzini et al., 2009). Being overweight or obese increases the risk for chronic illness such as heart disease, stroke, hypertension, type 2 diabetes, osteoarthritis and cancer. Neighborhood design features, such as playgrounds and open fields connected with sidewalks and bike trails, provide opportunities for safe play; children and other vulnerable populations use these amenities as modes of transportation to and from destinations (Franzini et al., 2009). According to the New Hampshire Office of Energy and Planning the 2011 top activities for New Hampshire residents age six and older are: running, jogging, and trail running.

Recreation includes passive activities which are low impact and relaxing such as walking or light gardening, up to high impact activities such as running, biking and competitive sports. It is important to have parks located throughout a community. The proximity of a half mile to one mile of an amenity indicates the relative distance a person will use alternative transportation to a destination like a park.

Parks provide a variety of recreational opportunities, act as sound buffers for traffic, provide wildlife habitats and offer locations for arts and culture festivals which increase opportunities for social cohesion. Open spaces serve as meeting places for all populations which promotes positive social networks and an enhanced sense of wellbeing. Furthermore, increased social networks can provide child services such as increased physical activity opportunities and resources to help relieve poverty and parental stress. Additionally, social networks are improved for seniors residing near paths and open space. Typical parks types include forested areas, riparian buffers, skate parks, athletic fields, dog parks and open space areas. Parks can be public or private and be reclaimed from forgotten or tainted spaces such as brownfields and landfills.

Regionally, open space provides a number of services to protect public health and environment. Open space can promote tourism and economic development and improve the health of a local population. Wildlife is a draw for residents and tourists for hunting, fishing, bird watching and hiking. State parks and recreation contribute \$545 million through spending and tax revenues to New Hampshire. (NH Division of Parks and Recreation & NH OEP, 2013)

YES	NO	N/A	FEATURE	HEALTHY INFRASTRUCTURE RECOMMENDATION
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Parks	Conserve or create open fields, green spaces, small pocket parks, or open space that are easy to get to and can be accessed by all users
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Playgrounds	Playgrounds in major residential areas and around schools that are accessible to all user types
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Recreation Facilities	There are areas for recreation of all types which include facilities such as bathrooms or storage as appropriate
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Trail Connections	Trails are interconnected to the greatest degree possible
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Trails	Trails and green corridors exist around major natural resources that allow public access and year round use for walking, hiking, biking, cross-country skiing, and snow shoeing
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vacant Lot Redevelopment	Redevelop vacant lots for recreational activities such as basketball, skate parks, tennis, and playgrounds or as green space for passive recreation or gardening

APPENDIX A: HEALTH IMPACTS OF PLANNING DECISIONS

Decision Features	Impacts on Health Related Issues (Determinants)							Health Outcomes						Health of Vulnerable Populations			
	Social Cohesion	Exposure to Air Pollutants	Water Quality	Crime Safety	Traffic Safety	Physical Activity	Housing Choices	Diabetes	Heart Disease	Asthma	Stress	Depression	Physical Injuries	Youth	Elderly	Low-Income	Disabilities
Land Use and Community Design																	
Architecture	↑	0	0	↑	0	0	↑	0	0	0	↕	↕	0	0	0	0	0
Neighborhood Connections	↑	↕	↕	↑	↕	↑	↕	↓	↓	↕	↓	↓	↑	↑	↑	↑	↑
Density Bonuses	↑	↕	↕	↑	0	0	0	0	0	↕	0	0	↑	0	0	0	0
Eyes on the Street	↑	0	0	↑	↕	0	0	0	0	0	↓	↓	0	↑	↑	↑	↑
Gathering Places	↑	↕	0	↑	0	↑	0	↓	↓	↕	↓	↓	↕	↑	↑	↑	↕
Lighting	↕	0	0	↑	↕	0	0	0	0	↕	↓	0	↓	↑	↑	↑	↑
Mixed Income Development	↑	0	0	↑	0	0	↑	0	0	0	↕	↕	0	↑	↑	↑	↑
Neighborhood Green	↑	↓	↑	↑	↕	↑	0	↓	↓	↕	↓	↓	↕	↑	↑	↑	↕
Regular Maintenance/Landscaping	↑	↓	↑	↑	↑	0	↕	0	0	0	↕	↕	0	↑	↑	↑	↑
Street Connectivity	↑	↕	↓	↑	↑	↑	↕	↓	↓	↕	↓	↓	↑	↑	↑	↑	↑
Economic Connections																	
Agriculture	↑	↕	↑	↑	0	↑	↕	↓	↓	↕	↓	↓	↕	↑	↑	↑	↑
Community Gardens	↑	↕	↑	↑	0	↑	↕	↓	↓	↕	↓	↓	↕	↑	↑	↑	↑
Downtowns & Shopping Centers	↑	↕	↓	↑	↕	↑	↕	0	0	↕	↓	↓	0	0	↑	↑	↕
Grocery Stores	↑	↕	↕	↕	↕	↕	↕	↓	↓	↕	↓	↓	↕	↑	↑	↑	↕
Infill Development	↑	↕	↓	↑	↕	↑	↕	0	0	↕	↓	↓	0	0	↑	↑	↕
Medical Facilities	↑	↕	↓	↑	↕	↑	↕	↓	↓	↕	↓	↓	0	↑	↑	↑	↕
Mixed Use Development	↑	↕	↓	↑	↕	↑	↕	0	0	↕	↓	↓	0	0	↑	↑	↕
Street Furniture	↑	↕	↑	↕	↑	↑	0	↓	0	↕	↓	↓	↕	↑	0	↑	↕
Housing Development and Redevelopment																	
Accessory Dwelling Units	↑	0	0	↑	0	0	↑	0	↓	0	↓	↓	0	0	↑	↑	↕
Affordable Owner Occupied Hsg.	↑	0	↕	↑	↕	↕	↑	↓	↓	↓	↓	↓	↓	↑	↑	↑	↕
Affordable Rental Housing	↑	0	↕	↑	↕	↕	↑	↓	↓	↓	↓	↓	↓	↑	↑	↑	↕
Age Restricted Senior Housing	↑	0	↕	↑	↑	0	↑	↓	↓	↓	↕	↕	↓	0	↑	↑	↕
Cluster Development	↕	↓	↑	↑	0	↑	↕	0	0	↕	↓	↓	0	↑	0	0	0
Cottage Housing	↑	↑	↕	↑	↑	↑	↑	0	↓	↓	↓	↓	0	↑	↑	↑	↕
Lead Paint Remediation	↕	↓	0	0	0	0	↑	0	0	0	↓	↓	↓	↑	↑	↑	↑
Townhomes	↑	0	↕	↑	0	0	↑	0	↓	0	↕	↓	0	0	↑	↑	↕
Vehicular Safety																	
Narrow Vehicle Lanes	↑	↕	↑	↑	0	↕	↑	↓	↓	↕	↓	↓	↕	↑	↑	↑	0
Raised Medians	↓	↓	↕	↓	0	0	0	0	0	↕	0	0	↑	0	0	0	0
Refuge Islands	↑	↕	↑	↕	↑	↑	0	↓	↓	↕	↓	↓	↕	↑	↑	↑	↑
Rotary Circles	↑	↕	↓	↑	↑	↕	0	↓	↓	↕	↓	↓	↕	↑	↑	↑	↕
Surface Treatments	↑	↓	↕	↕	↑	↕	0	↓	↓	↕	↓	↓	↕	↑	↑	↑	↓
Traffic Bumps	↑	↕	↕	↕	↑	↕	0	↓	↓	↕	↓	↓	↕	↑	↑	↑	↕

Likely direction of impacts based on existing evidence: ↑ Increase, ↓ Decrease, ↕ Variable Impacts, 0=minimal impact, no impact or no data available (note: ↑ or ↓ does not universally imply good or bad results, but simply up or down)

Feature	Impacts on Health Determinants							Health Outcomes						Health of Vulnerable Populations			
	Social Cohesion	Exposure to Air Pollutants	Water Quality	Crime Safety	Traffic Safety	Physical Activity	Housing Choices	Diabetes	Heart Disease	Asthma	Stress	Depression	Physical Injuries	Youth	Elderly	Low-Income	Disabilities
Transit																	
Dedicated Transit Lanes	↑	↓	↓	0	↑	0	0	0	0	↕	↓	0	↕	0	0	0	↑
Transit Priority Signalization	↕	↓	↕	↑	↑	↕	0	0	↓	↕	↓	0	↕	0	↕	↑	↑
Transit Service	↕	↓	↕	↑	↑	↕	0	0	↓	↕	↓	0	↕	0	↕	↑	↑
Transit Stop Facilities	↕	↕	↕	↑	↕	0	↑	0	0	↕	↓	↓	↕	↑	↑	↑	↑
Pedestrian Infrastructure																	
Accessible Curb Ramps	↑	↕	↕	0	↑	0	↑	↓	↓	↕	↓	↓	↓	↑	↑	↑	↑
Bulb Out	↑	↕	↕	↕	↑	↑	0	↓	↓	↕	↓	↓	↕	↑	↑	↑	↑
Crosswalks	↑	↕	↕	↕	↑	↕	0	↓	↓	↕	↓	↓	↓	↑	↑	↑	↑
Paved Shoulders	0	↕	↓	0	↑	↕	0	0	↓	↕	↕	0	↕	↑	↑	↑	↑
Pedestrian and Traffic Signals	↑	↕	↑	↕	↑	↑	0	↓	↓	↕	↓	↓	↕	↑	↑	↑	↑
Sidewalks	↑	↑	↑	↑	0	↕	↑	0	0	↕	↓	↓	0	↑	↑	↑	↑
Street Trees and Landscaping	↑	↓	↕	↑	↑	0	↑	↓	↓	↓	↓	↓	↓	↑	↑	↑	0
Bicycle Infrastructure																	
Bicycle Lanes	↑	↑	↕	↑	↑	↑	↑	0	↓	↓	↓	↓	0	↑	↑	↑	↑
Bicycle Racks	↕	↓	↕	↑	0	↕	0	↓	↓	↓	↓	↓	↓	↑	↑	↑	0
Planting Strips	0	↕	↑	0	0	0	0	0	0	↕	↓	0	0	0	↑	↑	↕
Shared Use Paths	↑	↕	↕	↕	↑	↑	↑	↓	↓	↕	↕	↓	↕	↑	↑	↑	↑
Environment																	
Planting and Landscaping Requirements	↑	↓	↑	↑	↑	0	↕	0	0	0	↕	↕	0	↑	↑	↑	↑
Public Water and Sewer	0	0	↑	0	0	0	↑	0	0	0	↕	0	0	↑	↑	↑	0
Stormwater Design	0	↓	↓	0	0	0	↑	0	0	0	0	0	0	0	0	0	↕
Low Impact Development																	
Alternative Parking Design	↕	↑	↕	↑	↑	0	↕	0	↓	↕	↓	0	↕	0	↕	↑	↑
Green Building	↕	↓	↕	↑	0	↑	↕	↓	↓	↓	↓	↓	↓	↑	↑	↑	↑
Low Impact Development	↕	↕	↕	↑	↕	0	↕	0	0	↕	↓	↓	↕	↑	↑	↑	↑
Passive Solar Design	↕	↓	↕	↑	0	↑	↕	↓	↓	↓	↓	↓	↓	↑	↑	↑	↑
Reduced Footprint	↓	↓	↕	↓	0	0	0	0	0	↕	0	0	↑	0	0	0	0
Recreation and Open Space																	
Parks	↑	↕	↑	↕	↑	↑	↑	↓	↓	↕	↓	↓	↕	↑	↑	↑	↑
Playgrounds	↑	↕	↑	↕	↑	↑	↑	↓	0	↕	↓	↓	↕	↑	0	↑	↕
Recreation Facilities	↑	↕	↑	↕	↑	↑	↑	↓	↓	↕	↓	↓	↕	↑	↑	↑	↑
Trail Connections	↑	↕	↕	↕	↑	↑	↑	↓	↓	↕	↓	↓	↕	↑	↑	↑	↕
Trails	↑	↓	↕	↕	↑	↑	↕	↓	↓	↕	↓	↓	↕	↑	↑	↑	↕
Vacant Lot Redevelopment	↑	↕	↑	↑	↑	↑	↑	↓	↓	↕	↓	↓	↕	↑	↑	↑	↑

Likely direction of impacts based on existing evidence: ↑ Increase, ↓ Decrease, ↕ Variable Impacts, 0=minimal impact, no impact or no data available (note: ↑ or ↓ does not universally imply good or bad results, but simply up or down)

APPENDIX B: DEFINITIONS

Throughout this report, there are terms which may be unfamiliar to municipal boards and local planners. The effect on individuals and health is expressed as health determinants and health outcomes. The list below provides definitions commonly found in health evaluations and planning documents.

Development Applications: The forms and all accompanying documents and exhibits required of an applicant by an approving authority for development review purposes.

Health Determinant: The range of personal, social, economic and environmental factors which determine the health status of individuals or populations.

Health Outcome: Health status of an individual, group or population which is attributable to a number of determining factors such as behaviors, social and community environments, health care services, and genetics.

Policy Planning: Public policy planning includes environmental, land use, regional, urban and spatial planning and incorporates plans that are adopted or pursued by a community.

Users: Pedestrians, bicyclists, motor vehicle drivers, public transportation riders and drivers and others that determined by the municipality of all ages and abilities. Other users may include agricultural vehicles, emergency vehicles and freight.

Vulnerable Populations: Also users, who are people of all ages and abilities, including children, youth, families, older adults, veterans and individuals with disabilities, are groups of individuals who lack necessary resources to function optimally or rely heavily on others for support.

Source: (National Policy and Legal Analysis Network, 2010; World Health Organization, 2014)

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