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Health Impact Assessment, Physical Activity and Federal Lands Trail Policy

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Abstract

Objectives—The objectives of this paper are to describe the application of Health Impact Assessment (HIA) to inform trail decisions affecting a rural, under-resourced community and propose the routine integration of HIAs to enhance NEPA environmental assessments and environmental impact statements for trail decisions on federal lands.

Methods—Screening, scoping, assessment, recommendations, reporting, monitoring and evaluation are being used to examine the health impact of trail location and design.

Results—HIA recommendations are being integrated into the public lands National Environmental Protection Act process for planning access to a new segment of the Continental Divide National Scenic Trail. Potential users from a nearby rural New Mexico community and a region of almost one million may benefit from this HIA-informed planning.

Conclusions—HIA can be integrated into the policy and decision-making process for trails on public lands.

Keywords

health impact assessment; public lands; trail policy

Excess weight[1] and a lack of regular physical activity[2] increase the risk for most chronic diseases. Despite recommendations to participate in physical activity as a way to promote health,[2] only half of United States (US) adults currently meet the national guidelines.[3] Walking is an acceptable and accessible strategy for increasing physical activity,[4] but it occurs less frequently among rural residents compared with their suburban counterparts.[5] Factors in the built environment (eg, fewer sidewalks, limited access to exercise facilities)

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present barriers to physical activity in rural communities.[6] Policies that support positive changes in the built environment in rural communities can play a critical role in population health in the United States.

Health Impact Assessment (HIA)

Health is determined not only by genetics and personal choices, but also by policies and environmental factors.[4,7,8] Although European countries have been using HIA for decades for systematic examination of the potential influence of a proposed policy or environmental project on the health and well-being of a specific population,[9] it is only recently that the US has adopted this approach. HIA has been primarily used in the US to study health effects concurrent with an Environmental Impact Assessment (EIA) under the 1969 National Environmental Protection Act (NEPA).[10,11] The EIA can contain a variety of assessments and culminates in an Environmental Impact Statement (EIS). The HIA can add to this by providing "procedures, methods, and tools by which a policy, program or project may be judged as to its potential effects on the health of a population."[12] HIAs are intended both to predict the health consequences of potential decisions, and to inform policy decisions.[13,14] HIA is a natural extension of the EIA/EIS,[8] and integrating HIA into the EIA process can improve health and health equity.[10]

Like the EIA, the HIA assesses the effects of major projects and policies such as designing highways and extracting resources from public lands. EIAs and HIAs do not determine policy but rather, evaluate alternative proposals and their relative risks and benefits, to help decision-makers choose options that promote favorable outcomes and mitigate adverse consequences. Public health professionals have championed the HIA for encouraging decisions that protect and enhance health and advance health equity.[10,15] HIAs also can provide stakeholders with equitable input into the decision-making process.[10,16] In addition to forecasting the health effects of a proposal and the distribution of those effects within a population, HIA can identify known and projected barriers and facilitators to implementation, and can influence the drafting of laws and regulations.[17] To date, most HIAs performed in the US have examined ways to mitigate adverse health consequences and their potential costs including social and economic influences. Less is known about the use of HIA to predict the positive health consequences of a policy or planning decision.

HIA for Public Land Trail Policy and Planning

Land use planning decisions and the built environment have a great impact on the physical and mental health of local residents.[18] The concept of the built environment includes not only consideration of structures and sidewalk placement, but also contact with nature.[19–22] To date, over 250 HIAs have been conducted in the US,[23] but few have focused on trails in the natural environment. Creating or enhancing access to natural places to be physically active fits well with recommended strategies for promoting physical activity.[24,25] Recently, HIA has been used to plan trails in or near communities,[26,27] and one HIA was utilized by the National Park Service (NPS) to plan a segment of a national scenic trail across non-federal lands in rural Wisconsin.[28] To our knowledge, although NEPA assessment has been applied systematically to trail planning on federal land and includes analysis of

archeological, wildlife, environmental hazard, and socioeconomic impact surveys, HIA has not yet been integrated into the process.

The Continental Divide National Scenic Trail (CDNST) extends more than 3000 miles along the Rocky Mountains from Mexico to Canada. The CDNST crosses federal lands administered by the US Department of Agriculture, United States Forest Service (USFS), and the US Department of the Interior, Bureau of Land Management (BLM), and NPS. The trail remains incomplete and, since its inception in 1978, each new segment has been assessed for environmental impact in conformance with the NEPA process of each federal agency.[29] The choice of trail location and design usually considers scenic quality and routing convenience (ie, fewer land easements, fewer obstacles such as highway crossings) rather than health and quality of life benefits for potential users in nearby population centers. This paper describes, to the best of our knowledge, the first use of HIA to assist the USFS and BLM in maximizing the beneficial health effects of trail decisions, in this case a 15-mile CDNST segment proposed near the rural community of Cuba, NM.

HIA and the CDNST – Cuba, New Mexico Segment

An HIA is underway in Cuba, New Mexico, a rural, under-resourced, tri-ethnic (American Indian, Hispanic and Anglo) community with high rates of obesity, diabetes, cardiovascular disease, and other effects of insufficient physical activity. Health problems in the community are shared to varying degrees by other rural communities in the US, including many that have access or could have access to trails on federal and other public lands.

The decision of new CDNST trail placement, access and design has direct implications for the health and quality of life of people living in and near Cuba. The most obvious connection between trails and health is the potential for providing community members and regional visitors with access to attractive, free, safe, and convenient places for outdoor walking and hiking. The US Task Force on Community Preventive Services recommends creation of, or enhanced access to, places for physical activity as an evidence-based strategy that communities can use to promote physical activity.[30] Increased access to places to be active is also associated with an improvement in social connection and cohesion,[31,32] community identity and pride,[33] and economy.[34] Improved economic status is both a determinant of health and a requirement for discretionary time that can be used for recreation. People who are physically active also have reduced healthcare costs when compared with those who are sedentary.[35–37]

With many of these potential benefits in mind, a local group, led by a family physician, created a program and partnership respectively named Step into Cuba (https://www.stepintocuba.org) and the Step Into Cuba Alliance. Since its inception in 2008, the program's purpose has been to promote a healthy lifestyle among the local population by increasing walking and hiking in Cuba and on surrounding public lands. Early in its operation, the Alliance began recruiting key external partners including transportation and public land trail planners. As an academic partner, the University of New Mexico Prevention Research Center (UNM PRC) brought expertise in evidence-based community prevention strategies. The UNM PRC also worked with the Alliance to plan and implement a

prospective study of long-term community change as a result of Step Into Cuba efforts.[38] This study is known as Village Interventions and Venues for Activity (VIVA). The UNM PRC, including staff with previous experience in HIA, conducted a rapid HIA in 2010 to inform both community and transportation planners on the health and safety benefits of new sidewalks on US Highway 550, a busy 5-lane road that bisects Cuba.[39] Success with this rapid HIA led to an interest in applying HIA to the CDNST.

The objectives of this paper are: (1) to describe the application of HIA to inform trail decisions affecting a rural, under-resourced community; and (2) to propose the routine integration of HIAs to enhance NEPA environmental assessments and environmental impact statements when making trail decisions on federal lands. The process, progress, and lessons learned from this project, titled Studying Trail Enhancement Plans – a Health Impact Assessment (STEP-HIA), can now be shared with trail planners.

METHODS

To determine the health impact of developing trails leading to the CDNST near Cuba, we conducted an integrated HIA[11] following a modified HIA process beginning with screening, scoping, and assessment. A STEP-HIA report of formal recommendations to USFS, BLM and NPS partners is planned in the near future. This will be followed by monitoring and evaluation of the use of HIA results in final decision-making. These steps in the HIA process are traditionally described in a linear fashion. Whereas we implemented the steps in a generally consecutive manner, we occasionally revisited a step or skipped to a later step to take advantage of opportunities (eg, newly available data) or address emergent issues (eg, equestrian use). Throughout the process we engaged with the local community, fostered relationships with public lands managers, worked to improve the evidence-base for decision-making, and used a comprehensive approach to health that incorporated a broad range of determinants and outcomes.

Screening

The first step in the HIA process, screening, is concerned with determining the need and value of an HIA.[40] An HIA must have the potential for a significant public health impact, and be feasible and timely to affect the decision-making process. The STEP-HIA project was jointly conceived in early 2012 by members of the UNM PRC and the Step Into Cuba Alliance partnership studying approaches to increase physical activity among rural populations in and around Cuba, NM. A central strategy of the Alliance was planning a new CDNST segment that would better connect to the Village. The Alliance identified key constituents that the HIA would need to inform including the USFS Santa Fe National Forest and New Mexico BLM staff who will ultimately make trail decisions. We also identified key stakeholders that would need a voice in defining the issues, developing recommendations, and advocating for the most appropriate access trails, trailhead(s), and trail designs. Stakeholders included Cuba residents, residents from nearby communities, Alliance members, business owners, health care providers, local area walkers and hikers, and government officials. Additional organizational stakeholders included the NPS, Continental

Divide Trail Alliance, and Sandoval County. This diverse group of stakeholders was provided an opportunity to assist in defining the scope of the HIA.

The project was discussed with stakeholders at regular meetings of the Step Into Cuba Alliance. Alliance members felt that optimal location and design of local access to the CDNST would increase use, improve health, and strengthen the local economy. Economic improvement was expected from increased tourism to Cuba both by CDNST thru-hikers, and by residents of the US Highway 550 corridor (Figure 1) interested in convenient access to the CDNST.

Concurrent meetings with public lands managers from the USFS and BLM resulted in their support for the HIA. All parties determined that an HIA would be feasible and important, as well as provide important information for trail decisions. A USFS Proposed Action for the new CDNST segment, announced in June 2012, included plans for the HIA. The timeline provided by the USFS originally appeared daunting (completion by June 2013), but was extended to January 2014 following delays related to forest fires, turnover of federal staff, and securing easements across private land.

Scoping

Scoping, the second step in an HIA, determines what should be assessed and how,[11] setting boundaries for the HIA.[40] As part of the scoping process, the STEP-HIA Team established goals for the HIA. These included: (1) compiling recommendations regarding location and design of CDNST access trails near Cuba, NM; (2) sharing recommendations with local public lands officials for incorporation into their decision-making process and report; and, (3) developing and disseminating a model which provides guidance for the integration of HIAs in the NEPA process for decision-making governing trails on all federal lands. The STEP-HIA Team, in consultation with Health Equity Partnership and Human Impact Partners,[41] developed a Pathway Diagram to illustrate the conceptual framework for the project (Figure 2). The diagram includes underlying and intermediate health behavior determinants as well as desired intermediate and long-term outcomes of the HIA.

We identified the geographic scope of the STEP-HIA as a 10-mile radius of Cuba, while allowing for data regarding potential users of the proposed CDNST segment to extend approximately 100 miles in either direction along the US Highway 550 corridor to include populations from Albuquerque to Farmington, NM. The population of interest included the 1700 people living in the Cuba area and nearly one million individuals residing in the corridor. Visitors from this larger corridor may realize health benefits as well as affect the social and economic capital of the Cuba area population.

As part of the scoping process we generated research questions, identified potential data sources and methods, and developed a plan for stakeholder engagement. Considerations included trailhead location and design, travel distances for potential trail users, interface with connecting trails, and trail design preferences. Specific research questions fell into 2 categories, existing conditions and impact questions. The former included questions about where people walked, where people liked to walk, how people got to the locations where they walked (ie, mode of transportation), and the general walkability of the community.

Impact questions focused on which trailhead locations people would use, how trailhead locations would influence walking, how people would get to trailheads, if trailheads were accessible to motor vehicles, if trail-heads would have locations for safe parking, and if proposed trailheads would be accessible to equestrian users. Data sources, methods and stakeholder engagement are detailed in the assessment step.

Assessment

The assessment step involves identifying the potential health impacts, both positive and negative, of a policy, program or plan.[40] Data can be used from a variety of sources and may be qualitative (eg, expert opinion, community meetings, stakeholder interviews, focus groups, literature and document review) or quantitative (eg, Census data, health indicator data, community survey data, pedestrian counts, walkability scans, GIS mapping data). The STEP-HIA assessment was comprised of a literature review, document review, physical assessment of the potential trailhead locations, community meetings, community surveys, and GIS mapping of the US Highway 550 corridor. Participants in the assessment process included Step Into Cuba Alliance members, local health care providers, the New Mexico Department of Health, business owners, walkers, hikers and government officials. Evidence from the assessment will be used to project health-related outcomes for trail users and the local community.

The literature review topics were selected by the STEP-HIA Team, and covered findings directly applicable to the HIA. Two members of the Team conducted the literature review. The search of peer-reviewed articles and the gray literature encompassed: (1) the effect of trail location and design on physical activity, including trail characteristics that promote use; (2) how individuals decide to use marginal time, including motivation for using trails; (3) quality of life associated with time spent outdoors; (4) social cohesion associated with walkable communities; (5) the economic impact of trails on communities; and, (6) community identity and pride associated with outdoor space. An abstraction sheet was developed for the standardized collection of information from each resource. A matrix was created to track resources and content.

Document review included both meeting minutes and articles in the local monthly newspaper. The *Cuba News* and minutes from VIVA project meetings, Step Into Cuba Alliance meetings, and HIA meetings with the USFS, BLM and NPS were reviewed and analyzed by STEP-HIA Team members for reference to the CDNST and HIA.

A physical assessment of the potential trail access locations was conducted by members of the STEP-HIA Team in consultation with USFS and BLM planners (Figure 3).[16] The Team members traced the routes under consideration and examined the locations where the routes crossed roadways. The assessment included a preliminary scan of each of 7 roadway crossing sites for safety, feasibility, degree of difficulty, and distance from Cuba and each other. Before final recommendations can be made, a more extensive safety audit of each potential trail-head will be required.

Through facilitated community meetings, stakeholders had the opportunity to define the scope of the HIA and provided valuable input and feedback to the STEP-HIA Team. The

Pathway Diagram developed during the scoping step was presented at these meetings and participants were given an opportunity to comment on the diagram. Participants also generated ideas regarding survey questions, important outcomes, and motivating factors for the location and design of trailheads. Participants wrote down comments on index cards provided by the facilitator. This was followed by a group discussion with questions and clarifications. These ideas were incorporated into research questions and surveys.

Data from 2 community surveys, the VIVA General Survey and the Sandoval County Fairgrounds Survey, were incorporated into the STEP-HIA. The VIVA General Survey was administered to a convenience sample of adults, ≥18 years of age, living and/or working within a 5-mile radius of Cuba. The survey was conducted at public locations throughout Cuba during a 2-week period during the summer of 2011. Whereas the anonymous survey was broad in scope, several questions were relevant to the HIA including those about hiking behavior, potential trail locations, and the benefits of having trail heads and trails leading to the CDNST.

The Sandoval County Fairgrounds Survey, also conducted for the VIVA research study, targeted attendees of the 2013 Sandoval County Fair held at the fairgrounds located one mile south of the Village of Cuba. Attendees at the fair come from the population identified in the Geographical Information System (GIS) mapping of the US Highway 550 corridor, and therefore, represented the visitor population base that could access the CDNST near Cuba. The survey was conducted in September 2013 with 30 adults, ≥18 years of age. Survey questions focused on interest in hiking, potential CDNST trailhead locations, the importance of different trail characteristics, estimates of future use of the CDNST, and the likelihood of incurring a variety of expenses when visiting Cuba to access the trails (eg, hotel, food, gas). Similar surveys are underway in additional communities along the US Highway 550 corridor.

Recommendations and Reporting

The recommendation and reporting steps of an HIA involve the preparation and timely submission of findings to decision-makers in an appropriate format.[40] Preliminary STEP-HIA findings are being prepared, and will be presented to the Step Into Cuba Alliance and other stakeholders for input and perspectives on proposed recommendations. Following this review, recommendations will be finalized for inclusion in a STEP-HIA report. The report will be submitted to the USFS and BLM and is expected to be integrated into the NEPA assessment. Final STEP-HIA recommendations will also be presented to the Step Into Cuba Alliance, the Village Council, Sandoval County officials, and will be shared with the larger community through the local newspaper.

Monitoring and Evaluation

Monitoring and evaluation is the final step of an HIA and involves evaluating the HIA process and monitoring the acceptance and implementation of the recommendations.[40] The HIA process has been evaluated and modified on an ongoing basis by the STEP-HIA Team and HEP and HIP consultants throughout the conduct of the HIA. Final recommendations will be tracked through quarterly meetings with the USFS and BLM over a 15-month period

to determine the extent to which the recommendations are adopted and implemented. We will determine how well the CDNST final plan for the Cuba Section aligns with the STEP-HIA recommendations and will monitor the predicted outcomes of the HIA further. Results of the monitoring process will be presented to the Step Into Cuba Alliance and other key stakeholders.

RESULTS

Screening and Scoping

The screening and scoping processes laid the foundation for a successful HIA. The screening step resulted in a determination by the UNM PRC, community stakeholders and federal lands partners that the HIA would be valuable, feasible, and timely. It also resulted in a robust academic-community partnership, and successfully fostered a relationship with federal land managers. The scoping step provided a framework for researchers, community members and federal land managers to work together. It also highlighted the priorities of the different parties involved. Whereas researchers were most interested in physical and mental health outcomes, federal lands managers placed more emphasis on the economic impact of new trails and trailheads. Community members expressed interest in both. Lastly, the scoping process helped to define a major highway population corridor, providing a denominator from which to estimate trail users and use.

Assessment

The literature review included nearly 200 articles and reports. The published literature provided important information on the relationship of walk-ability and trails to health and quality of life, but required extensive extrapolation to predict Cuba CDNST segment impacts and formulate STEP-HIA recommendations. Evidence from the literature will be used, together with results from the other assessments, to project improvement in rates of physical activity, additional time outdoors, social cohesion, social capital, and local economic conditions from alternative access trail location and design decisions.

Among the 75 adults that completed the VIVA General Survey in the summer of 2011, nearly half (45.3%) reported that they hike in and around Cuba, NM. The most common reason for not hiking was poor health. The vast majority of respondents (88.0%) felt that having the CDNST and access trails closer to Cuba would benefit the community, most commonly by attracting people to Cuba (30.3%), connecting residents to nature (22.7%), and providing health benefits to residents (20.0%). Although each proposed trailhead had some advocates, a location adjacent to the fairgrounds was of interest to 48% of respondents that like to hike.

Of the 30 respondents to the Sandoval County Fairgrounds Survey, half lived more than 50 miles from Cuba. Most (86.7%) reported liking to hike or walk, and 70% reported that they were very likely or somewhat likely to use the new section of the CDNST after it is completed. Respondents indicated that the most important factors when choosing a trailhead include trail difficulty information, scenic beauty, trail safety, convenient location, and signage (Table 1). Respondents estimated that they would take an average of 3.11 day hikes

on the CDNST annually, and 1.76 overnight trips to the CDNST each year. Although only 20% of respondents reported that they would stay in a motel or bed and breakfast in Cuba when accessing the CDNST, 40% said they would stay overnight at a campground. Three-fourths of participants reported that they would likely purchase meals, snacks and gasoline in Cuba during a visit to the CDNST.

Recommendations

Preliminary recommendations include multiple, well-spaced trailheads, wider trail tread than customary, and minimal grades (<5%). Public input prioritized locations with safe and convenient access, a level and sufficiently large area for parking, signage, and a variety of hiking experiences, both with regard to scenic beauty and degree of difficulty. Other potential STEP-HIA recommendations are forthcoming.

Policy

We achieved a primary goal of the STEP-HIA when land managers indicated their intent to use results of the STEP-HIA in their decision-making process. Following early meetings with the USFS and BLM, agency personnel incorporated the HIA into their June 14, 2012 Proposed Action for the Cuba Section of the CDNST. At a June 2013 meeting, USFS and BLM personnel confirmed their commitment to integrating the HIA results into the NEPA process to be used for planning the Cuba Section of the CDNST. Meeting minutes also documented USFS and BLM interest in using the STEP-HIA as a model for decision-making on other trail projects on federal lands.

DISCUSSION

Small rural communities typically have limited access to places for physical activity,[6] but federal lands offer tremendous potential. In New Mexico, more than one-fourth of the state is comprised of public lands managed by the USFS (9.4 million acres) and the BLM (13.5 million acres) with an additional 13 National Parks.[42,43] Increasing access to these lands through the provision of safe and accessible walking and hiking paths and trails may positively affect health. In the STEP-HIA process, we delineated 3 trail user populations – thru-hikers, nearby community users, and regional visitors. We determined that significant health impact can be realized by the latter 2, and regular and repeated use by nearby communities may be a particularly important outcome of strategic trail planning.

Projected health impacts illuminated by the HIA include increased physical activity and an associated long-term decrease in chronic disease, improved mental health due to exposure to nature and improved physical health, and improved quality of life. Potential health improvement may also result from positive changes in social cohesion, social capital and local economic circumstances as a result of informed trail policy and planning. These results are based on assessment data from the literature, document review, physical assessments, and local surveys. The local surveys, while representing a small sample of the potential population, indicate that local residents and individuals living in the US Highway 550 corridor are interested in accessing new trails that are safe, convenient and scenic. They also

anticipate spending money in Cuba on items such as gas, food and lodging, injecting money into the local economy.

Our experience with the STEP-HIA highlighted several components that facilitated the process (Table 2). These included the importance of a strong academic-community partnership, and the leveraging of funds, which provided the necessary components to conduct the HIA. Experienced researchers, a local champion, community participation, and relationships with decision-makers were critical to project success. Leveraging previous work in the community with the VIVA research project, we were able to obtain funding for the HIA, and we were able to utilize the previously established connections and partnerships necessary to conduct the HIA. The involvement of the Department of Health was also a significant asset. This relationship led to the use of GIS mapping to define the visitor catchment area for the Cuba segment of the CDNST, and may provide small area analysis to monitor health risk factor and chronic disease rates for populations affected by the CDNST and other trails. Using a major highway corridor to define the potential population that could access the CDNST near Cuba helped in the projection of trail use and consequent health impact. Consideration of brief outdoor walking opportunities for road travelers may also be an important feature for future trail policy and planning, particularly in large western states such as New Mexico.

The STEP-HIA Team exercised flexibility when working with numerous partners with differing objectives and competing priorities. Taking time to establish and foster partnerships and identify the issues that different partners found important strengthened the HIA and made it more meaningful to participants. Finding solutions that addressed the needs of all partners was critical. For example, several partners were more interested in the socioeconomic impact of the trail access locations than the direct health impacts related to increased physical activity. The STEP-HIA Team incorporated this into the Pathway Diagram and into the assessment step of the HIA. The Team also learned to be flexible regarding the timeline for the trail project as unforeseen delays were encountered due to forest fires, changes in personnel, difficulties in obtaining easements, and other unexpected interruptions. These delays in the NEPA actually enabled the STEP-HIA Team to conduct a more robust HIA with the additional time provided.

Another barrier when working with long hiking trails through federal lands, especially in western states, is the issue of historical land use. When conducting an HIA it is imperative to understand historical land use, including cattle grazing, hunting and equestrian use. Researchers and communities may experience opposition from ranchers or other populations that may not understand and support efforts to establish public trails on land that they have traditionally used in other ways. Opposition may delay, derail, or divert trail planning.

In addition to barriers and facilitators, we learned that performance of the HIA was an iterative process. As we progressed through each HIA step, we returned to, reviewed, and at times, revised our approach in previous steps. This was particularly important when analyzing assessment findings in the context of the scoping pathway, responsibilities and project timeline. An example was unanticipated interest in equestrian use of the CDNST

revealed during the assessment. Based on this we revisited the scoping step of the HIA and the ability to broaden assessment to include equestrian users.

HIA is now recognized as an important public health and health equity tool and has increasingly been used in the US to examine the health impact of policies, programs and plans.[44] Though not common, HIA has shown potential for decision-making around paths and trails.[24,26–28] To our knowledge, this is the first time that HIA has been used to inform federal decision-makers regarding trails on federal lands. The process and results of this HIA, as well as the relationship-building they have fostered, have the potential for far-reaching impact on future trail policy and planning. Our federal land management partners have committed to the integration of HIA into the required NEPA EIA process for planning the Cuba segment of the CDNST, and stated their interest in using HIA to plan other trails within their jurisdictions. STEP-HIA also has the potential to set a precedent for and model future use of HIAs for public trail planning.

Whereas the STEP-HIA has already resulted in a commitment by the USFS and BLM to incorporate the HIA into the NEPA for informing trail access, location and design, the HIA is not yet complete. The recommendations and reporting will be completed following community input after which they will be submitted to the USFS and BLM. Monitoring and evaluation steps will continue for 15 months following submission of the recommendations to determine the extent to which the policy change is integrated into practice within the federal agencies. We will also monitor the adoption and implementation of the recommendations at the local level, and we will evaluate the effects on physical activity. In future research we intend to examine the impact on physical and mental health, quality of life, and the local economy.

IMPLICATIONS FOR HEALTH BEHAVIOR OR POLICY

STEP-HIA provides an important model for informing trail policy and planning on federal lands. Future HIAs for this purpose may benefit from the following approaches: (1) involve community stakeholders with every HIA step; (2) work with local and regional managers of the USFS, BLM and NPS to develop an acceptable framework; (3) find opportunities to integrate the HIA into the NEPA process; (4) consider all potential trail user populations; and, (5) be flexible but persistent in considering conventional HIA steps and initial timelines.

Human Subjects Approval Statement

Institutional review and approval for the community surveys was obtained from the Human Research Protections Office at the University of New Mexico Health Sciences Center - #10-361.

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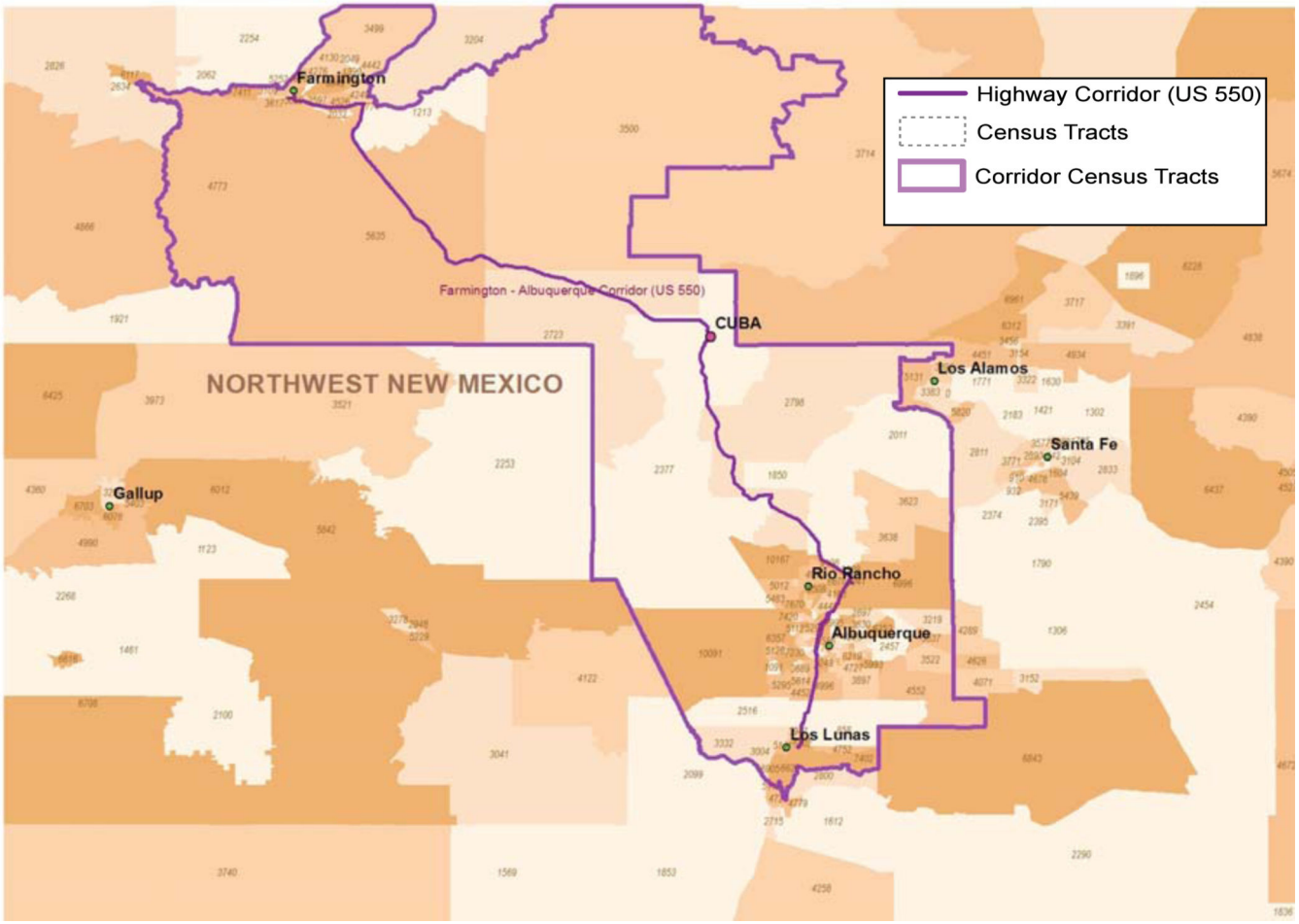

Figure 1.

US Highway 550 Corridor Map

Note.

Map identifies the population of potential walkers and hikers with convenient access to the proposed Cuba segment of the Continental Divide National Scenic Trail. More than 965,000 people live in the 217 identified census tracts.

Source: Thomas N. Scharmen, MA, MPH, Epidemiologist, Office of Community Assessment, Planning and Evaluation, Public Health Division, New Mexico Department of Health and The New Mexico Community Data Collaborative, Mapping Social and Health Conditions in New Mexico Neighborhoods: http://nmcdc.maps.arcgis.com/home/

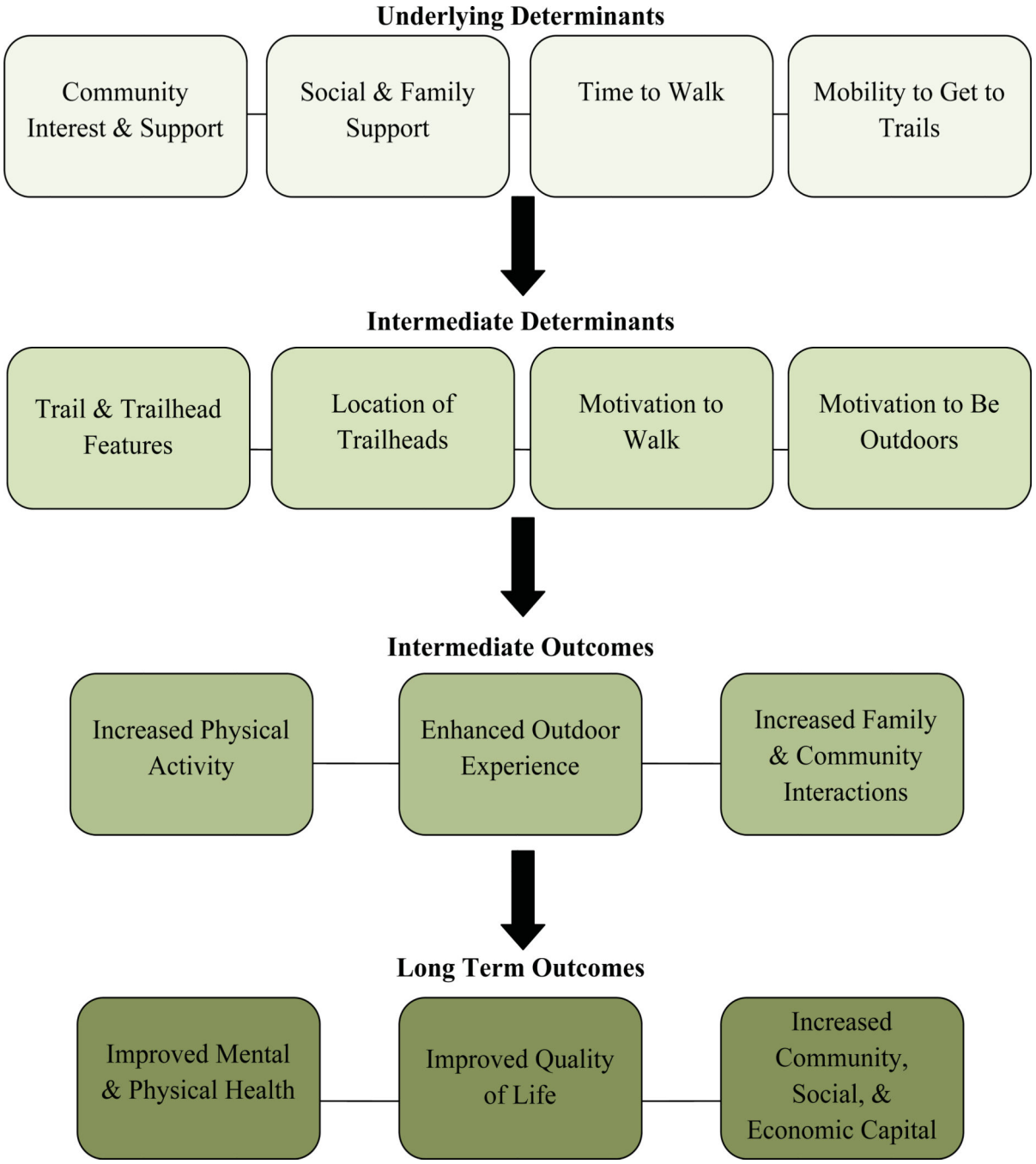

Figure 2.
Pathway Diagram Providing a Conceptual Framework for the Studying Trail Enhancement Plans – Health Impact Assessment (STEP-HIA) as Part of Scoping Process

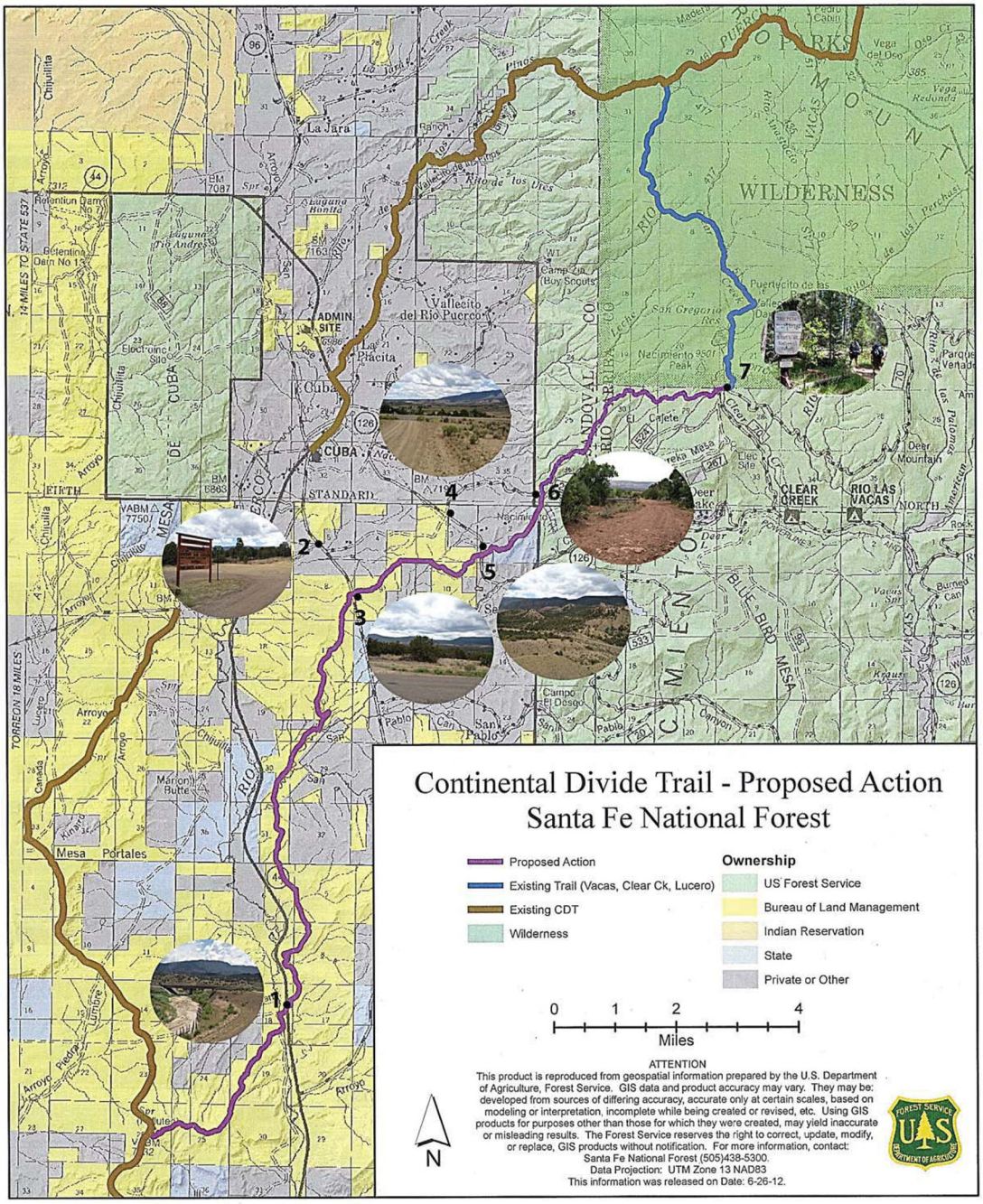

Figure 3.

Studying Trail Enhancement Plans – Health Impact Assessment (STEP-HIA) Potential Trail Access Location Map

Table 1

The Importance of Trail Characteristics When Choosing Where to Hike, 2013

Trailhead Characteristic	N	%
Information about level of difficulty of the trails	19	76
Scenic beauty of the trail	18	72
Trail safety	17	68
Convenient location	16	64
Signage	16	64
Good parking available	15	60
Access to amenities	14	56
Recommendations from friends or family	12	48
Familiarity with area	11	44
Degree of difficulty of the trails	9	36

Table 2

Barriers and Facilitators to the STEP-HIA Process and Lessons Learned

Barriers	**Lessons Learned**
Time	HAs may take longer than anticipated, especially when integrated with other assessments.
Competing priorities	While the HI A may be a priority for those working on it, other partners may have competing priorities that take precedence. Find opportunities to work with partners to move the project forward.
Securing easements	Building long distance trails can necessitate easement acquisition to access private lands. The legal process can take time and cause delays in the overall planning process.
Staff turnover	Turnover at partner agencies and organizations can set efforts back. It may be important to engage with multiple persons at multiple levels of an organization to maintain project continuity over time.
Historical use of land	Identify how land has been used in the past and include those who have historically used the land when possible.
Opposition	It may be important to identify and prepare for opposition to HIA findings. Traditional land or trail users may not support new, broader uses with greater health impact.
Facilitators	**Lessons Learned**
Relationship building	Building and fostering strong relationships with decision-makers takes time but may be crucial to HIA success.
Local champion	Identifying and working with a local champion who is respected in the community can enhance credibility and garner support.
Community involvement	Having the active involvement of community members in the HIA process may promote health equity and be essential to success.
Mapping	Geographic Information System mapping can provide essential information for the identification of the populations affected by the policy, program or plan under HIA assessment.
Leveraging resources	Leveraging resources from other programs can provide essential data, personnel or other resources that can move the HIA forward.